STRATEGIES FOR IMPROVING RURAL WELFARE


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Workshop Co-ordinator: Dr. J. Mugo Gachihi

Edited by

M.E. Kempe & L.D. Smith

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INSTITUTE FOR DEVELOPMENT STUDIES
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# LIST OF PARTICIPANTS

## University of Nairobi

### Institute for Development Studies:
- T.J. Aldington  
- Dr. J. Ascroft  
- N. Bedi  
- S. Brokensha  
- F.E. Chege  
- Dr. J.S. Coleman  
- Dr. D. Court  
- Dr. J. Mugo Gachuhi  
- Dr. D.P. Ghai  
- Dr. G.D. Gwyer  
- P.N. Hopcraft  
- J.G. Karuga  
- Dr. S.W. Rohio  
- C. Barnes  
- S.K. Gatangi  
- P.G.H. Hopkins  
- Miss P. Munene  
- Mr. Crawford  
- S. Johansen  
- Mr. Mutitu  
- P.B. Muli  
- S. Kihumba  
- J.A. Nkinyangi  
- E.P. Nakitare  
- T. Okelo Odongo  
- Miss A. Placido  
- Mr. Trapman  
- G. Schultzberg  
- K. ter Venn  

### Department of Agriculture:
- Dr. E. Baum  
- B.O. Vagnby  
- Dr. I. Furtado  
- M.H. Harper  
- Dr. K.Y. Baliga  
- J.N. van Luijk  
- Dr. D.M. Etherington  
- D. Walther  
- Dr. G. Hyden  
- Dr. S.W. Rohio  
- Dr. G.C.M. Mutisi  

### Department of Economics:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  
- Dr. H. Padfield  
- Dr. K. Prewitt  
- G.M. Ruigu  
- T. Schlie  
- D. Shepard  
- L.D. Smith  
- Dr. J. Stiglitz  

### Department of Botany:
- Dr. J. Mugo Gachuhi  
- Dr. P. Mook  

### Department of Building Administration:
- Dr. D.P. Ghai  
- Dr. D. Court  
- Dr. H. Padfield  

### Department of Civil Engineering:
- Dr. J. Mugo Gachuhi  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Department of Community Health:
- Dr. D.P. Ghai  
- Dr. D. Court  
- Dr. H. Padfield  

### Department of Economics:
- Dr. J. Mugo Gachuhi  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Department of History:
- Dr. E. Baum  
- B.O. Vagnby  
- Dr. I. Furtado  
- M.H. Harper  
- Dr. K.Y. Baliga  
- J.N. van Luijk  
- Dr. D.M. Etherington  
- D. Walther  
- Dr. G. Hyden  
- Dr. S.W. Rohio  
- Dr. G.C.M. Mutisi  

### Department of Sociology:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Institute of Adult Studies:
- Dr. E. Baum  
- B.O. Vagnby  
- Dr. I. Furtado  
- M.H. Harper  
- Dr. K.Y. Baliga  
- J.N. van Luijk  
- Dr. D.M. Etherington  
- D. Walther  
- Dr. G. Hyden  
- Dr. S.W. Rohio  
- Dr. G.C.M. Mutisi  

### School of Journalism:
- Dr. E. Baum  
- B.O. Vagnby  
- Dr. I. Furtado  
- M.H. Harper  
- Dr. K.Y. Baliga  
- J.N. van Luijk  
- Dr. D.M. Etherington  
- D. Walther  
- Dr. G. Hyden  
- Dr. S.W. Rohio  
- Dr. G.C.M. Mutisi  

### Ministry of Agriculture:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Water Development Division:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Ministry of Commerce & Industry:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Board of Adult Education:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Ministry of Finance & Economic Planning:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Ministry of Health:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Ministry of Information & Broadcasting:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Ministry of Power & Communications:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

### Ministry of Works:
- Dr. F.E. Chege  
- Dr. J. Ascroft  
- Dr. P.M. Mbithi  
- P. Mook  
- J. Nellis  

---
Kenya Commercial Bank  C.K. Muraya
Kenya Polytechnic  H.F. Mtula

TANZANIA
University of Dar es Salaam
Department of Economics  K.A. Malima
Department of Political Science  S.S. Mushli
Economic Research Bureau  Dr. F.E. Temu
Department of Development Studies  S.O. Odele

UGANDA
Makerere University
Department of Rural Economy & Extension  Dr. J.J. Oloya

CANADA
University of Toronto  Dr. Cran Pratt
Carleton University
International Development Research Centre  Dr. F. Taylor

DENMARK
I.D.R. Copenhagen  Per Kongstad

GERMANY
Friedrich-Ebert Foundation  Dr. H.G. Schindler

HOLLAND
International Agricultural Centre, Wageningen  Ir. J.H. Aalberts
Department of Agricultural Extension, Wageningen  Dr. N. Roling

SWEDEN
University of Uppsala  P. Wallensteen  Bo. Schiller

UNITED KINGDOM
University of Edinburgh  K. Little

ZAMBIA
President's Citizenship College  E.C. Chalabesa

INTERNATIONAL
International Labour Organisation  I.J.L. Jones
UNESCO  Chief Olu Ibuken
UNICEF  P. Ramaer
SESSION I May 31st 10 a.m. - 11 a.m.

Opening Ceremony

Introductory remarks - J. M. Gachuhi, Workshop Coordinator

Speech welcoming the Minister of Agriculture - Dr. J. M. Karanja, Vice-Chancellor, University of Nairobi

Address - Hon. J. J. M. Nyagah, Minister of Agriculture
Hon. Minister for Agriculture, Mr. Vice-Chancellor, Distinguished Guests, Ladies and Gentlemen.

On behalf of the Workshop Co-ordinating Committee of the Institute for Development Studies, I want to welcome all of you here today. I have very few words to say to you since we are going to hear the Vice-Chancellor and the Honourable Minister. However, before I ask the Vice-Chancellor to introduce our distinguished guest, I would like to give you a brief background of how it has come about that we are here today.

In January of this year, the IDS of this University was informed that the International Development Research Centre (IDRC), an independent non-profit organisation created by the Government of Canada to initiate and support research into the development problems of Africa, Asia and Latin America was looking for imaginative and productive research programmes formulated in East Africa by the East Africans which might be suitable for IDRC financing.

As we understand it, one of the broadly defined areas of research in which the Centre wished to concentrate its work was the welfare of rural areas, with particular reference to the problems of rural income distribution, population problems, education and so on.

We were invited to apply for funds to finance a workshop (or several workshops if necessary), in order to discuss, and hopefully to prepare, a major research project in the field of rural development for the consideration by the IDRC.

Our reaction to this invitation was to request funds to hold this workshop. Our feeling was, and still is, that as the first step to formulating a worthwhile research project, it was necessary to seriously rethink the whole basis and rationale of rural development in Kenya. This is why we have entitled this...
workshop "Strategies for Improving Rural Welfare" and why it is also interdisciplinary in nature. In our estimation, rural development does not belong solely to the economist, the sociologist, the politician, Government or indeed the University. We each have a role in trying to understand how to improve our people's welfare.

A fresh look at our orientations to strategies for improving rural welfare in a Kenyan and perhaps East African context is long overdue and might serve to bring our major conclusions on the following points:-

(1) Produce an agenda for applied research by identifying the major priorities and the long term direction of Rural Development Research.

(2) Recommend a multidisciplinary research project which is felt by participants to promise a major break-through in methodology in Rural Welfare Research and give tangible indicators of the direction of Governmental and local involvement.

(3) Suggest areas of changes in current strategies and existing policy on rural change.

(4) Register areas of academic disagreement in current knowledge on rural development, if only to indicate areas of further basic research.

We are therefore grateful that so many of you have supplied us with papers as material for this workshop. But whether we succeed in our objectives of first attempting to formulate broad strategies for the improvement of rural welfare in Kenya, and second, to identify the necessary areas of research needed to fill the gap in our knowledge or to test various alternative strategies for improvement, now depends on how much effort and thought, you, as participants, put into the workshop. We for our part will keep you supplied with coffee and tea, record your discussions, provide chairmen and rapporteurs, and we do hope that you will respond by making the discussions as frank and as constructively critical as possible.

Ladies and gentlemen, may I at this time introduce to you the Vice-Chancellor of the University of Nairobi, Dr. Karanja.
I am very happy to welcome the Minister for Agriculture, the Hon. Mr. J.J.M. Nyagah, who has been very kind to accept our invitation to open this Seminar "Strategies for Improving Rural Welfare".

We are very happy with the support we are receiving from senior Government Ministers in accepting our invitations to visit the University, which is an indication of their interest in the work we are carrying out here. As you know, the Minister for Finance & Economic Planning, the Hon. Mr. Mwai Kibaki, has accepted the invitation to close the Seminar on Thursday.

Coming to the central topic of the Seminar, we all know that although economic development is proceeding at an unprecedented rate in our country, it is not providing enough jobs at adequate income levels either to alleviate poverty that already exists or provide the jobs needed by a rapidly expanding workforce. One of the most striking consequences of this failure is the extremely high rate of unemployment which plagues many of our cities. Equally true is the fact that this pattern exists in the rural areas also and it seems to me important that in predominantly rural country like our own, we should concentrate on an understanding of the problems that affect our rural populations.

The question is, what do we mean by rural welfare? How do we measure this? Is it in terms of money, or leisure, or culture, or freedom from hunger? And how does rural welfare differ from urban welfare?

It is quite clear that in the current stage of our development, knowledge about the strategies of rural transformation is sadly under-developed. The myth that the benefit of industrialization in the urban sector would somehow trickle down to the rural masses has proven to be false. The limits of expansion
of employment in the cities are becoming even more obvious as is the fact that much of the problems of mounting urban unemployment will have to be solved through rural development. The need to expand food production is self evident and the means of achieving it, and the employment capacity of rural areas and the means of utilising it effectively, are still largely unexplored. It is in this very important area that Seminars such as this can help.

The University has a role in examining all these topics so that we have foundations of factors affecting the level of rural welfare. The University will also contribute by suggesting strategies for improving rural development, which has received considerable attention in this country since the Kericho Conference in 1966. This can be done through research and enquiry and bringing people from various disciplines together to exchange views and plan for the future.

The focus of the workshop should be the need to identify areas where our knowledge about rural welfare can be exchanged and where we can contribute more by suggesting ways and means of helping rural development.

With these few remarks, Mr. Minister, may I ask you to address the Seminar.
ADDRESS
The Hon. J.J.M. Nyagah, E.G.H., M.P.,
Minister for Agriculture

Mr. Chairman, Ladies and Gentlemen.

I am pleased and honoured to have this opportunity to say a few words to you at the outset of this seminar, which I am sure will be of benefit to us all.

In my own experience, one of the most difficult aspects of the Colonial mentality to get rid of is: that of not always being able to evaluate objectively those virtues that are contained in our African Culture. Leaders and all are victims of this mentality in one form or another. For, were it not so, then our Education Systems and Curricula would by now have been revised and remodelled sufficiently as to reflect true African Culture — that Culture that would aim at producing a wholesome man, ready and capable of living in any African environment and with self confidence for active nation building.

How often then as a result of this form of education and civilization do we come across cases of "detribalised" or "urbanised" or "westernized" Africans with no proper roots in the rural areas of their ancestors. Some of these live on their wits in big towns — as a matter of fact they live in slums in preference to the beauty of the rural village surroundings, where nature abounds in plenty.

Is it because they don't know any better? No! and Yes! are the answers I'd give.

It is "NO!" for those who look down upon the rural life, of those who have been forced to abandon it by sheer forces of circumstance, or by their families; by being rejected and refusing to settle down at home after the so called "completion of their education". They must go out and earn a wage for a living, either for themselves, or for supporting the rest of the family, or both.

and it is "YES!" for a good many who find insufficient opportunity for a decent living in the rural areas. These are mainly the unemployed school leavers and even the non-school leavers. These drift into the big urban centres in the hope of finding a better living there.
Up until 4 years ago in Kenya this class was mainly made up of an almost male class, but now it has been invaded in a big way by an influx of females. The traditional tribal/cultural family ties that once existed and exercised some restraints are very slender, if not already severed or are in the course of being so severed. It is here that the struggle for supremacy between Rural Life and Urban Life throws a challenge to the Leadership and the Government of the day.

Having said all that in a way of general introduction allow me to be a bit parochial and draw my illustrations from the Kenya scene - I am sure that these experiences will be found in a great many other independent African states though in varying degrees.

Mr. Chairman, the Government of Kenya has been committed to rural development. Its importance is well-recognised. Two documents in particular illustrate this commitment to rural development on the part of Government, namely, the Development Plan 1970-74, and the recent Report of the Commission of Enquiry (Ndegwa Commission).

The Development Plan outlines a very ambitious programme of investment in the rural areas, designed to promote the social and economic advancement of all rural people.

The Ndegwa Commission Report on the Civil Service noted that the principal task during the 1960's was the Africanisation of the Civil Service whereas the main task of the 1970's will be development. The Commission in particular aimed many of its recommendations at narrowing the gap between incomes of rural areas and those of the urban.

I would like to speak a little more about the contents of these two documents, because they illustrate very well our approach to rural development, the goal of which is to improve the welfare of rural citizens.

The Development Plan indicates that path through which better living conditions may be achieved. They are:

- higher productivity;
- improved transportation facilities;
- new marketing opportunities;
- safe water supplies;
- better housing, more employment and coordinated services throughout the rural areas.
A system of rural growth centres has been planned as a focus for expanded rural services and opportunities. These growth centres will help redress the imbalance which now exists between urban and rural areas. Private enterprises will be encouraged to participate fully in developing the facilities of these centres.

If we are to achieve this goal, the country must make the best possible use of all its resources. Often this will mean better organization and co-ordination of the many programmes which have already been initiated but which were left to themselves and not properly drawn together to achieve maximum impact. Some programmes, such as roads, rural water supplies, and housing, will be expanded. New programmes will be needed also. Fortunately, the monetary resources of our healthily-growing economy, supplemented by the contributions of foreign donor countries, will be sufficient to finance quite a number of these programmes.

One of our most important resources is the capacity of the Civil Service to plan and implement development. Effective planning and administration of rural development is vital at all levels, both in Nairobi and in the field. Field officers in particular, who are familiar with local problems and opportunities, have a very important contribution to make in designing and implementing rural projects.

Many of the recommendations of the Ndegwa Commission strongly underline the need to strengthen the ability of the Civil Service to carry out successful development programmes. For example, the Commission recommended that certain planning operations be decentralised and made the responsibility of field officers (para. 296), and that the work of administration and the work of development in the Provinces should be more closely linked (para. 297). The desirability of full participation of the people in the development process was also recognized, in a recommendation to strengthen the District Development Committees and to broaden their membership to include politicians and other local representatives.

Many of these same aims are embodied in the recently-initiated programme of Government -- the Special Rural Development Programme -- which is now active in five areas throughout the country. This programme, which is only a small part of our overall rural development effort, aims to test on a small scale different methods.
of organizing resources, and different techniques of planning and co-ordinating programmes, which if, successful, may later be extended to other areas of the country. My officers, together with those from other Ministries, are now actively involved in the implementation of the proposals in the SRDF areas.

ROLE OF THE MINISTRY OF AGRICULTURE

At this point, I would like to say something about the part which the Ministry of Agriculture plays in the overall programme of rural development.

The Ministry regards the welfare of the individual farmer as paramount. He, after all, is the producer of the food and raw materials upon which we all depend. The agricultural extension services can and should promote farmer welfare and Government production policy at the same time, by giving the farmer advice and services which enable him to run his farm and home business on an economically-viable basis, thus enabling him to live a contented and happy life as any other citizen anywhere in the country. This necessitates research and planning as well as careful extension work geared to local conditions, to ensure that we recommend production programmes which in fact yield the farmer a good return. You must remember that the farmer and in particular our smallholders cannot afford to waste their limited capital on unproductive schemes. Experimentation on their limited resources must be reduced to the minimum. They want maximum return from them. Therefore, from an agricultural point of view, improving the welfare of farmers in the rural area depends on raising farm incomes with well-conceived and properly-implemented crop and livestock production programmes, and on the provision of complementary services such as roads and water supplies and credit. Our objective is to provide these services where they are most needed, but also as evenly as possible throughout the country. Is it not an English saying that "strength of any chain lies in its weakest link", it would be the same for Kenya or any other country were the development to be lop-sided. Any area thus left too far behind in these developments will always be the weakest link in the national development chain, so to speak.

Looking into the future, I would like to mention a number of ideas I have in mind. I think it is useful to bring them up here in the context of this seminar to add to the suggestions and ideas which
I am sure you will have.

Firstly, agricultural prices are a vital incentive to farmers, and are the means by which Government can encourage production to satisfy national needs and provide adequate incomes to producers. The price structure has very significant effects on the distribution of income among various parts of the population; prices must therefore be set so that they do not benefit some people at the expense of others. For example, meat prices are a case in point. On the basis of our studies of the livestock industry, we now know that meat prices have in the past had a doubly undesirable effect. Prices to livestock producers have been low, which favours consumers in urban areas but does so at the expense of the rural livestock producer. This is not only inequitable, but is also undesirable because it discourages meat production at a time when demand is rapidly expanding.

This explains the increasing weight which we are putting on careful formulation of pricing policies, especially as the prices of agricultural products are inter-related. Feed grain price policy, for example, must be related to our livestock production policies. The pricing policy provides an example of an area which requires a great deal of further research and analysis, much of which is best done in co-operation with Government by such organizations as the Institute for Development Studies here at the University.

Secondly, employment is a very important concern of the Ministry. I do not believe that we have nearly tapped the potential of the agriculture sector for generating employment, and I feel that developing this potential stands as one of our most challenging tasks in this decade. My officers have taken this goal to heart and are concentrating on formulating projects with a high labour content. At the same time, we do not know enough yet about how to devise labour-intensive methods which are productive. This I would suggest as another important focus for research, one which is absolutely essential if we are to be able to supply our rapidly-growing labour force with the jobs they deserve.

Thirdly, credit is, of course, a very important input and one which receives a lot of attention. Proposed or new schemes such as subsidized credit and small-scale seasonal credit to smallholders,
still require more analysis and experimentation before they can be widely adopted. Small seasonal loans are being tried on a test basis within the SRDP, but this is only one effort in a field which can still benefit from further research.

Fourthly, farm mechanization is becoming a more important aspect of our modernising agriculture but here again research is needed, for example into cultivation techniques for low-rainfall areas, techniques and tools suitable for small farms where tractors are inappropriate, and adaption of animal drawn equipment to improve productivity. Agricultural works in general have I think, a potential for absorbing much more useful employment than they do now; however, methods of organisation and supervision need to be worked out more carefully.

Many of these areas which we are now beginning to explore have been the subject of considerable work within other countries. We could benefit from their experience, if this experience was accessible to us through exchange of information. Collection of relevant research information is therefore a task which would be of great value to us. For example, many countries use some form of a land tax, or land management tax, as an incentive to the full development of land. Much light could be shed on its possible application in Kenya by reference to the experience of other countries.

ROLE OF THE SEMINAR

What I have said about the role of Government in rural development can be summarized generally by saying that our job is: (a) to forecast opportunities, (b) to determine appropriate policies and plan programmes, and (c) to implement and evaluate these programmes.

Full time civil servants inevitably become relatively pre-occupied with policy-making, and planning and administering programmes. I feel that those outside Government, especially those in academic or research institutions, can make a very essential contribution by focussing their professional talents on forecasting marketing opportunities, examining the effects of pricing and taxation policies, and developing effective incentives. Rigorous and constructive evaluation is also a function often best performed by objective outside bodies.

Non-Government agencies are also best able to develop ways of increasing the participation of the private sector in rural develop-
ment, which becomes more desirable and practicable as the economy expands and becomes more modern.

CONCLUSION

And now Mr. Chairman, ladies and gentlemen, may I in conclusion once again say how pleased I am to have been invited to this first session of this most important seminar as its first speaker, and may I also be allowed to emphasize that many of the ideas I have mentioned today are offered for purposes of discussion, as examples of the kinds of issues we are considering. Thus I encourage your whole-hearted discernment and I look forward to seeing your conclusions. My very best wishes for a successful seminar.
SESSION 2
May 31st 11.30 a.m. - 1 p.m; 2.30 - 4.15 p.m;
4.30 p.m. - 6 p.m.

THEME
"Strategies : The Tetu Experience"

CHAIRMAN
Dr. Mbithi

BACKGROUND PAPERS
4. Improving Rural Welfare - The Case of Farm Management : N. Bedi.
CONTROLLING ENVIRONMENTAL CHANGE:  
TOWARDS AN IDEOLOGY-FREE THEORY OF DEVELOPMENT

Joseph Ascroft
Institute for Development Studies
University of Nairobi

Modernization is the process by which man purposively cumulates control over change in environmental phenomena essential to his welfare.

The present paper amplifies and elaborates the foregoing statement. It investigates the question: What are the underlying forces impelling the process of modernization and governing its course?

THE NATURE OF CHANGE IN ENVIRONMENTAL PHENOMENA

A process view of reality, states Berlo (1960, p.24), resulted from the work of such scholars as Einstein, Russell, and Whitehead:

First, the concept of relativity suggested that any given object or event could only be analysed or described in the light of other events that were related to it. Second, something as static or stable as a table, a chair, could be looked on as a constantly changing phenomenon, acting upon and being acted upon by all other objects in its environment, changing as the person who observed it changes.

Accepting a process view of modernization, therefore, "...implies a continuous interaction of an indefinitely large number of variables with a concomitant continuous change in the values taken by these variables" (Miller, 1966, p. 33).

It is, however, extremely difficult to study a process in motion without somehow arresting its dynamic and reducing its multivariability to intellectually manageable units. Man achieves these ends by (1) abstracting distinguishing features
to form relatively unchanging categories of otherwise continually changing phenomena; and (2) by specifying arbitrary time periods and problem statements in the context of which to observe specific changes.

Physical phenomena with constituent parts structured in some discernable form and pattern of organization may be classified as systems. That is, a system consists of a "set of objects together with relationships between the objects and between their attributes" (Hall and Fagen, 1956, p.18), where objects are constituent parts of the system; attributes are properties of the constituent parts; and relationships are the interactions which bind the parts together to form the system.

Thus, man defines, or in Kelly's (1963) terms, "construes" the reality of systems by classifying similar phenomena on the basis of abstracting the essence of the form and pattern of organization of their constituent parts -- that is, by specifying essential properties of, and relationships among constituent parts common to certain phenomena. For example, man may define an organism to be a biological entity constituted to carry on the activities of life by means of organs separate in function but mutually dependent on each other. The "organisms" are the corresponding phenomena being defined; "organs" are abstracted as the organism's essential constituent parts; "function" refers to the activities attributed to the organs; and "mutual dependence" describes the relationships between the organism's constituent parts.

Constituent parts may themselves be regarded as systems, or rather sub-systems, with a definable form and pattern of organization of their constituent parts. Koestler (1964,p.287) summarizes the situation when he states that a human system:

....is an integrated hierarchy of semi-autonomous sub-whole, consisting of sub-sub-wholes, and so on. Thus, the functional units on every level of
the hierarchy are double-faced as it were: they act as a whole when facing downwards, as parts when facing upwards.

By this construction, we can place the individual human system in a dyad, the dyadic system in a family, the family system in a social and so on.

All systems, no matter how seemingly static or stable, are constantly changing. On the one hand, systems are ever-changing because their constituent parts are in continual interaction with each other - constantly acting upon and being acted upon by each other. On the other hand, systems are ever-changing because they themselves are continually interacting with other phenomena - constantly affecting and being affected by other phenomena in their environments.

Change in a system consists of any alteration of form and pattern of organization of its constituent parts resulting from internal interaction among constituent parts as well as from external interaction between the system and other phenomena in its environment.1

However, there are an indefinitely large number of determinants, both internal and external to the system, acting continuously to produce change in the system. Hall and Fagen (1956), p.20) state that: "For any given system, the environment is the set of all objects a change in whose attributes affect the system and also whose attributes are changed by the behavior of the system". To study any state of a system, or any change in state of a system, it becomes necessary, for purposes of intellectual manageability, to restrict the system's environment (1) by placing a limit upon the multivariability of internal and external determinants to be observed; and (2) by specifying some point or some span of

1. This definition is adapted from Rogers with Svenning (1966, p.3) who state that "Social change is the process by which alteration occurs in the structure and function of a social system".
time at or during which to describe the system or to observe change occurring in the system.

To restrict the universe of observable phenomena to manageable proportions, a specific issue or problem is stated. Determinants, whether internal or external, become important only insofar as they are relevant to that issue or problem. As Hall and Fagen (1956, p.18) observe, "...the relationships to be considered in the context of a given set of objects depend on the problem at hand, important or interesting relationships being included, trivial or unessential relationships excluded". Thus, if the issue is adopting a new seed variety, the matter of left-handedness in the organism, or the presence of a dog-trainer in the environment may not be as relevant as the question of physical disability in the organism or the presence of an agricultural expert in the environment.

To restrict the period of observation to some finite span of time, we may "freeze" the dynamic of the change process at some point in time, or specify an arbitrary beginning and end to the process under observation. As Lennard and Zernstein (1960, pp.13-14) state:

Implicit to a system is a span of time. By its very nature a system consists of an interaction, and this means that a sequential process of action and reaction has to take place before we are able to describe any state of the system or any change of state.

To summarize, then, the study of change in environment phenomena consists of specifying (1) the particular phenomena under study defined by abstracting the essence of the form and pattern of organization of their constituent parts;

2. A problem..is an interrogative sentence or statement that asks: What relation exists between two or more variables?" (Kerlinger, 1965, p.19)
(2) an issue or problem in the context of which to sort important from trivial interactions within and between phenomena; and (3) a point or span of time at or during which to observe any state or change in state of phenomena.

THE NATURE OF OPEN AND CLOSED SYSTEMS

There are two basic categories of systems, the closed system and the open system. Distinguishing between these categories is important mainly because open systems have crucial dealings with their environments that closed systems do not have.

A system is closed if there is no import or export of energies in any of its forms such as information, heat, physical materials, etc., and therefore no change of components, an example being a chemical reaction taking place in a sealed insulated container (Hall and Fagen, 1956, p.23).

Organic (living) systems are open systems, "... meaning they exchange materials, energies, or information with their environments" (Hall and Fagen, 1956, p.23). Open systems are characterized by wholeness, self-regulation, and equifinality.

1. Wholeness: The form and pattern of organization of an open system's constituent parts is characterized by mutual interdependence among the parts. Every part is so related to its fellow parts that a change in any one part will cause change in all of them and in the total system. That is, "... a system behaves not as a simple composite of independent elements, but coherently and as an inseparable whole" (Watzlawick et al., 1967, p.123).

2. Self-Regulation: An open system is self-regulating because it monitors its own behaviors and, hence, the behaviors of environmental phenomena as well as making its adjustments felt upon its environment. A thermostat is a self-regulating device. The metal elements of the thermostat are sensitive to temperature changes such that they automatically turn a heat-generator off and on whenever environmental temperature reaches certain specified upper and lower limits.
Self-regulation operates on the basis of information feedback. Cofer and Appley (1964, p.346) summarize the operation of feedback in relation to behavior as follows:

Reacting to disturbance (i.e., stimulation), the system (or any subsystem) responds. Its response affects the environment in some particular way, at the same time, 'reporting back' what has been done. The central regulatory apparatus then computes the discrepancy between performed and intended action and the succeeding response "is corrected for error". Such a sequence is repeated until the residual error is so small as to lie within the range of the target.

This adjustment of behavior on the basis of actual performance rather than intended performance is known as feedback which "... may be as simple as that of the common reflex, or it may be a higher order feedback, in which past experience is used not only to regulate specific movements, but also whole policies of behavior" (Weiner, 1954, p.33).

3. Equifinality: Because open systems are self-regulating, outcomes of change over a span of time are not so much determined by initial conditions before the span of time, as they are by the self-regulating processes of the system during the course of the span of time. "If the equifinal behavior of open systems is based on their independence of initial conditions then not only may different initial conditions yield the same final result, but different results may be produced by the same 'cause'" (Watzlawick et al., 1967, p.127).

A fourth and particularly important property of open systems regards the tendency for them to oppose the forces of internal as well as environmental disorganization and uncertainty. Because of the centrality of this property to our present view of the process of modernization, we shall discuss it in greater detail than we have the foregoing three characteristics.
Entropy versus Organization

Physical (thermodynamic) theory states that systems can only proceed to a state of increased disorder as time passes. The measure of this disorder is called entropy, and the "characteristic tendency for entropy is to increase" (Wiener, 1954, p.12). Physical entropy operates mainly in closed systems. "as entropy increases, ...all closed systems in the universe...tend naturally to deteriorate..., to move from the least to the most probable state, from a state of organization and differentiation...to a state of chaos and sameness" (Weiner, 1954, p.12).3

However, in a universe where order is least probable and chaos most probable, "...there are local enclaves whose direction seems opposed to that of the universe at large and in which there is a limited and temporary tendency for organization to increase" (Weiner, 1954, p.12). **Organization** is the negative of entropy, a measure of the opposition to the natural tendency for entropy in the universe to increase. The characteristic tendency for organization is to increase locally and temporarily. Physical organization operates mainly in open systems.

**Man is an open system, a local enclave with a limited and temporary capacity to oppose the natural tendency for entropy in the universe to increase. We must, however,**

3. Nature's statistical tendency to disorder, the tendency for entropy to increase in closed systems, is expressed by Newton's second law of thermodynamics. "In a descriptive sense, entropy is often referred to as a 'measure of disorder' and the Second law of thermodynamics as stating that 'systems can only proceed to a state of increased disorder': as time passes, 'entropy can never decrease' ... randomness always increase ... Physical (thermodynamic) entropy is defined for a closed system, a system which is considered utterly isolated and incapable of exchanging energy in any way with its surroundings" (Cherry, 1957, pp.214-215).

4."We are immersed in a life in which the world as a whole obeys the second law of thermodynamics: confusion increases and
distinguish between two basic kinds of opposition: (1) within-system organization; and (2) between-system (environmental) organization.

1. Within-system Organization: Man is an open system characterized by wholeness. That is, the form and patter of organization of his physical constituent parts is characterized by continuous interaction based on mutual dependence upon each other, particularly insofar as his vital organs are concerned. These interactions occur mainly in an orderly and predictable fashion such that change in one part affects change in its fellow parts in order to maintain the system in a state of stable equilibrium. 

"Stability characterizes a system ... when its parts are arranged in such a manner as to counteract or resist disturbance" (Cofer and Appley, 1964, p.346). That is, stability in a system characterizes organization or opposition to the forces of entropy.

order decreases. Yet, ... the second law ..., while it may be a valid statement about the whole of a closed system, is definitely not valid concerning a non-isolated part of it" (Weiner, 1954, p.36). Scientists are always working to discover the order and organization of the universe, and are thus playing a game against the arch enemy, disorganization. It is not a contrary enemy "... who is determined on victory and will use any trick of craftiness or dissimulation to obtain ... victory ... Nature offers resistance to decoding, but it does not show ingenuity in finding new and undecipherable methods of jamming our communication with the outside world", (1954, pp.35-36).

5. Cofer and Appley (1964, pp. 344-345) state that "... physiochemical laws governing energy conservation, particularly the second law of thermodynamics (entropy), would require that any closed system eventually reduces to a static equilibrium--a state of minimum energy exchange". Biological systems seem (at least temporarily) to disobey this natural law. "Open systems, by definition, draw upon the free energy of their environments ... and ... may attain steady states (i.e. remain constant or stable) while at the same time maintaining a continuous flow and interchange of energy and component materials! That is, open systems, such as biological systems, maintain stable equilibria, meaning that "... when displaced from a 'neutral' position, they tend to remain active until the disturbed equilibrium is restored, or, in combination with other part-systems, a new equilibrium is reached".
Man, however, did not construct himself. He is, therefore, largely not responsible for the manner in which his constituent parts operate in mutual dependence with each other to counteract or resist entropic change. We may state, then, that man is constituted by nature (at least temporarily) to oppose entropy. The measure of this opposition is organization and the natural tendency for organization, as is evident by observing the progression from infancy to adulthood, is to increase in the short run.

2. Between-system (Environmental) Organization: A system, however, can operate stably only within a given range, and deviations beyond the limits of this range would, when the limits are reached or surpassed, either temporarily or permanently destroy the system (e.g., when freezing or melting temperatures intrude upon human organisms, coma or death quickly follows). That is, changes occurring within an open system, as a function of the continuous interaction of its constituent parts, are orderly and differentiated only to the extent that the system's environment does not exceed any of the limits necessary for the system's stable operation. But the system's environment, in the largest sense, is the universe and the natural tendency in the universe, as time passes, is for entropy to increase.

It may be stated, therefore, that the system's environment is not constituted by nature to oppose the forces of entropy. It is not inherently characterized by a tendency for organization to increase. Therefore, any change occurring in any open system's environment as a function of interaction between that system and other phenomena can only be orderly and differentiated to the extent that the system itself, or other open systems in the environment, make it so. That is, the environments of human organisms are constituted by those human organisms living in them to oppose the forces of entropy.

5. (contd.)

Krech (1950) has shown that a dynamic system may even move toward states of greater heterogeneity and complexity rather than simplicity in the pursuit of maintaining stable equilibria.
Essential Variables and Safe Limited

It can be said that the goal of all stable systems, living or not, is survival - that is, survival is synonymous with the maintenance or achievement of stability. A system can operate stably only when changes within the system occur within certain limits. To maintain these internal changes within safe limits, it is necessary for the system to ensure that changes in environmental phenomena likewise do not exceed any of the limits necessary for the system's welfare. That is, the system's welfare depends upon changes occurring as a function of internal interaction of its constituent parts as well as of external interaction with other phenomena, being of an orderly and differentiated nature. But a system's environment, given a process view of events and relationships, consists of a "... continuous interaction of an indefinitely large number of variables with a concomitant continuous change in the values taken by these variables" (Miller, 1966, p.33). It would seem, therefore, to be an insurmountable problem for any open system to attempt to organize all environmental change, if only because "indefinitely" is not an operationalizable term.

Not all changes, however, occurring in an open system or in its environment are necessary to the welfare of the system. Ashby (1952) designates essential variables as being only those in which excessive change would not be compatible with the system's survival. Adaptive behavior, then, may be viewed as any behavior which serves to retain essential variables within "safe limits". In the human organism, as in all open systems, adaptive behavior operates...

6. It is worth noting, however, that there is no strict dichotomy implied between essential and nonessential variables. Depending upon the issue or problem at hand, non-essential variables may become essential variables and vice versa (at least temporarily). At any rate, essential variables may themselves be hierarchically arranged such that "... oxygen deficit has priority over water deficit, which in turn has priority over food deficit" (Cofer and Appley, p.349).
through self-regulation based upon information feedback.

For Ashby, nonessential variables have importance only to the extent that they maintain the constancy of essential variables and, hence, the stability of the system. What these safe limits are, and which variables are essential to the welfare of the system, may be empirically determine for particular systems. For example, the tolerable range of variation of bodily and environmental temperature, systolic blood pressure, oxygen content in the air and so on are empirically determinable.

THE BASIS FOR PURPOSIVENESS

Man, in order to maintain himself as an open system (i.e., to survive), must have certain crucial dealings in the form of regular and determinate energy exchanges with an environment which, as a whole, exhibits a tendency for confusion to increase and order to decrease. Therefore, man must himself continuously oppose the tendency for entropy in his environment to increase, particularly with regard to those essential variables in which excessive change would be incompatible with his continuing survival. That is, he must retain change essential to his welfare within safe limits.

It can be deduced from these observations then, that man's actions are governed by an underlying purposiveness. Berlo (1960, p.11) suggests that "... our basic purpose is to reduce the probability that we are solely a target of external forces, and increase the probability that we exert force ourselves". That is, our basic purpose is to enhance the probability of increasing organization in our environments. Inkeles' (1966) view of efficacious man is addressed to the same point. He states that man "... can learn, in substantial degree, to dominate his environment in order to advance his own purposes and goals, rather than be dominated entirely by his environment" (Inkeles, 1966). It can be stated, then,
that man's basic purpose is to maximize the chances of perpetuating his survival by inducing and sustaining a locally limited tendency for organization in his environment to increase and, thereby, reduce the characteristic tendency for entropy in his environment to increase.

THE NATURE OF CONTROL

In order to survive, man needs to retain certain essential variables operating in his organism within safe limits. However, such retention depends upon maintaining a regular intake of such essential materials external to his organism as oxygen, water and food. Therefore, man needs to control the supply of these life-sustaining materials by retaining that supply within safe limits. That is, maintaining a regular and determinate supply of these essential environmental materials enables man to retain essential variables in his organism within safe limits which, in turn, enables man to maintain himself as an open system. Therefore, control is the means by which man purposively retains change in environmental phenomena essential to his welfare within safe limits.

The goal of control is anticipation. Human systems cannot "... long survive if efforts to maintain their stability are activated only after essential variables have reached the limits of their ranges" (Cofer and Apple, 1964, p.349). Therefore, we strive to render change in environmental phenomena "...sufficiently law-abiding or repetitive for us to be able to make some prediction about what it will do" (Ashby, 1952, p.225).

Kelly (1963, p.50) asserts that "A person anticipates events by construing their replications". By 'construing' Kelly means that a person places an interpretation upon events. He erects a structure which is essentially abstractive of "... features in a series of elements which characterize some of the elements and are particularly un-characteristic of others" (1963, p.50). By 'replications'
Kelly means that man anticipates events by construing their reoccurrence. "Only when man attunes his ear to recurrent themes in the monotonous flow does his universe begin to make sense to him" (1963, p.52). Thus, the year is divided by seasons, and winter is characterized by snow which is particularly uncharacteristic of summer. A person is able to construe the replication of these events, to predict the advent of summer and winter because they occur regularly.

Of course, people are different, therefore they have different ways of anticipating events. In terms of Kelly's (1963, p.46) fundamental postulate of his psychology of personal constructs, "A person's processes are psychologically channelized by the ways in which he anticipates events". By "channelized", Kelly means that "We conceive of a person's processes as operating through a network of pathways ...(which)... is flexible and is frequently modified, but ... is structured and ... both facilitates and restricts a person's range of action" (1963, p.49).

Kelly (1963, p.49) elaborates:

The channels are established as means to ends. They are laid down devices which a person invents in order to achieve a purpose. A person's processes, psychologically speaking, slip into the grooves which are cut out by the mechanisms he adopts for realizing his objectives ... Each person may erect and utilize different ways, and it is the way which he chooses which channelizes his processes.

The different ways in which each person's processes are psychologically channelized to anticipate events under-scores the equifinal behavior of human organisms.

NEED TO CUMULATE CONTROL

Control is not a dichotomy: one does not either have or not have control over change occurring in a particular phenomenon. Control is a continuous variable. By way of intuitive example, a man who maintains room temperature within safe limits by building a fire has less control.
than one whose room temperature is thermostatically controlled. Indeed, the only dichotomy worthy of note concerns the relevance of acquiring particular controls. If environmental temperature naturally remains within safe limits, then the question of controlling environmental temperature is irrelevant.

Since control is a matter of degree, it follows that the possibility always exists for man to increase the degree of control he has already acquired over change occurring in any phenomenon. The man who builds a fire may increase his degree of acquired control over changes in room temperature by adopting a thermostatically-controlled furnace-motor.

More importantly, acquiring more degrees of control over change in one phenomenon may have the way to acquiring more degrees of control over a variety of other phenomena. For instance, the principle underlying the smallpox inoculation may be abstracted and generalized to an infinite variety of infectious diseases. In a sense, therefore, acquiring additional degrees of control with regard to change occurring in one phenomenon may well open a pandora's box of change-control possibilities with regard to many other phenomena.

Thus, control may be cumulated by gaining additional degrees of control over change occurring in any given phenomenon and by abstracting and generalizing principles underlying control in one phenomenon to a wide variety of other phenomena.

It may be expected that man's characteristic tendency is toward cumulation rather than attrition of control over environmental change, particularly over change in phenomena essential to his welfare. Stated another way, man in whom there is a limited and temporary tendency for organization to increase, constantly seeks to render this tendency less limited and less temporary. That is to say, man's basic underlying need is to cumulate control over change occurring in environmental phenomena essential to the welfare of his organism.
PREDICTING HUMAN BEHAVIOR

If man’s basic underlying need is to cumulate change-control, then it may be expected that man reacts positively to propositions which promise to enhance, and negatively to those which threaten to curtail his already acquired degree of change-control. That is to say, it may be predicted that if an individual is confronted with a promise of enhancement of his control over change, particularly in phenomena essential to his welfare, then that individual will tend to engage in behavior calculated to take advantage of the possibility to acquire the additional control. To be effective, the promise must satisfy, in the individual’s perception, an initial criterion of feasibility, either at the moment, or in the foreseeable future.

Conversely, it can be predicted that if an individual is confronted with a threat of curtailment of his control over change, particularly in phenomena essential to his welfare, then that individual will tend to engage in behavior calculated to curtail or eliminate the threat of curtailment with which he is faced. To be effective, the threat must satisfy, in the perception of the individual, an initial criterion of feasibility, either at the moment or at some time in the future. Thus, cumulating control is a function of purposive enhancement on the one hand, and purposive curtailment of threats of curtailment on the other.

These two predictive statements are clearly of a motivational nature. A motivational theory, states Brown (1961), is one containing, in a role of central importance, a unique construct to which a specific label, such as drive,

7. The conceptual origin of this line of thinking is based in Brehm’s (1966) theory of psychological reactance, which states that for any given individual, at any given point in time, there are a set of free behaviors available to him. The behaviors are "free" in the sense that the individual perceives himself to be free to engage in any one of these free behaviors either at the moment or at some
may be attached. For instance, Festinger (1957) postulates that cognitive dissonance is unpleasant and, therefore, motivates people to alter their cognitive system in such a way as to become consonant again.

Just as hunger is motivating, cognitive dissonance is motivating. Cognitive dissonance will give rise to activity oriented to reducing or eliminating the dissonance. Successful reduction of the dissonance is rewarding in the same sense that eating when one is hungry is rewarding (Festinger, 1958, p.70).

The notion of a motivational construct involving the arousal of drive is succinctly summarized in Young's (1961, p.24) definition of motivation as "... the process of arousing action, sustaining the activity in progress, and regulating the pattern of activity". Exception to a view of motivation focussing almost entirely upon its drive-like properties has been taken on at least two main issues.

On the one hand, it has been observed that changes in behavior following manipulation of a motivational variable can sometimes be explained by other non-motivational concepts such as habit strength, degree of learning, attitude, or the physiological condition of the organism. Brown (1961, p.97) suggests that "Whenever variations in factors such as these provide acceptable explanations for the observed behavior, the concept of drive may become expendable".

On the other hand, it has been argued that the motivational construct misleadingly assumes that man is inert by nature, to be pushed into activity by drives, motives, and similar stimuli, or to be pulled into activity by purposes, values or goals. Kelly, (1958, p.50), for instance, objects to a "... need for a closet full of motives to explain the future time. For the behaviors to be free, however, they must be acts which are feasible, that is, realistically practicable. Reactance theory predicts that when any of these free behaviors are curtailed or threatened with curtailment or elimination, the individual will be aroused and motivated to recover or prevent the loss of those freedoms.
fact that man was active rather than inert”.

Because the drive or arousal aspects of motivation could be shown in some cases to add either nothing or only confusion to the clarity of our explanations of human behavior, it is felt in some circles that this argues for the complete elimination of the drive-like concept. Thus, Kelly (1958, p.60) for example, created a psychological theory of ‘personal constructs’ which he claimed to employ “no catalogue of motives to clutter up ... a much more coherent psychological theory about living man”.

The problem, however, is not resolved by simple dint of dispensing with the question of motives because, as Brown (1961, p.137) concludes, "... the construct of drive is ... supported by a wide variety of findings". Perhaps a more useful answer lies in de-emphasizing the centrality of the arousal aspects of motivational constructs which forces us into a view of man as being inert until pushed or pulled into activity.

To this end, we prefer to follow Hebb’s (1949, p.172) suggestion that "... the chief problem that the psychologist is concerned with, when he speaks of motivation, is not arousal of activity but its patterning and direction”.

Thus, the statement of our fundamental modernization postulate as well as the two predictive statements derived from it, are less concerned with presenting a legalistically logic-tight formulation based upon the arousal and reduction of drive, and more concerned with providing a heuristically provocative theoretical framework dealing with the patterning and direction of human behavior in the process of modernization. Our formulations imply an ever-present drive-state in man. If the tendency for entropy in the environment to increase is ever-present, then man's opposition to that tendency is likewise also ever-present. That is, man is an ever-active individual, thereby eschewing the notion of inert man aroused
to activity only by the intrusion of nigglesome external forces upon his quiescence.

MODERNIZATION AND CONTROL

We do not conceive of modernization (or perhaps more appropriately, modernism) as a state of being, as descriptive of a typology of people. Rather, modernization is conceptually a variable. That is, one does not become modern; one modernizes by continuously, never-endingly cumulating control over environmental change. Cumulated controls are the individually specific inputs to the collectively general storehouse of modernization. That is, each degree of control acquired over change in a particular environmental phenomenon is in itself a tiny act of modernization which augments the hoard of already acquired control in the storehouse of modernization. Indeed, the storehouse is never empty; it is considerably well-stocked with a rich heritage of controls already acquired to some degree over change in a wide variety of environmental phenomena. Each human system, whether monadic or polyadic, draws upon its storehouse of modernization which has elements common to and different from each other human system's storehouse. The storehouses of some human systems are relatively better stocked than those of others. These human systems are more modern than the others. These storehouses of modernization represent the reserves drawn upon in the processes of socialization and maturation. Control is a unidimensional concept, whereas modernization may likely be multidimensional. Because we take a process view of modernization, we concede that modernization is a bewilderingly

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8. Generally speaking, socialization and maturation are processes by which new members to society (e.g. immigrants and infants) adopt prevailing societal norms.
multivariate phenomenon. This being the case, it is conceivable that the general domain of modernization may likely consist of several relatively independent dimensions. That is, the degree of modernity achieved by a human system in one area of modernization (e.g. agricultural technology) may be unrelated to the degree of modernity acquired in another area of modernization (e.g. medical technology). Control on the other hand, is unidimensional to the extent that it treats of gaining specific degrees of control over change in phenomena taken one at a time.

9. Indeed, so many variables appear to be important parts of the modernization process that it is a formidable task to put them in some kind of order. In the process of probing the nature of the process of modernization, we now find ourselves unable to see the forest for the trees" (Ascroft, 1969, p.317).

10. Research investigations tend generally to support the notion that modernization, at the individual level, is multidimensional. Ascroft (1969, p.340) synthesized the results of factor analytic studies using data gathered in several countries, and concluded that "Micro-level factor analyses of individual modernization ... show that modernization is multidimensional".
BIBLIOGRAPHY


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UNIVERSITY OF NAIROBI
INSTITUTE FOR DEVELOPMENT STUDIES

THE TETU EXTENSION PILOT PROJECT
A Special Rural Development Programme Report

prepared by

Joseph Ascroft - Project Director
with assistance from
Joseph Kariuki - Fielding Questionnaire
Tim Ahutah - Date Processing
Birgit Jacobsen - Tabulation
Fred Chege - Report Preparation
Mugo Gachuhi - Field Liaison
Nilam Bedi - Farm Management

in association with
Edward Karanja - Co-operative Amalgamation
Mugo Gachuhi - Population & Family Planning
Peter Moock - Vihiga Extension Experiment
Edward Karuga - Peri-Urban Study
B. Jacobsen - Water Development
H. Padfield - Water Development
Ronald Garst - Spatial Diffusion (Kisii)
Carolyn Barnes - Development History (Kisii)
George Gwyer - Agricultural Employment
George Rui gu - Agricultural Employment
THE TETU EXTENSION PILOT PROJECT

The present study seeks to determine the nature, characteristics and problems of farmers in a high rainfall potential, high population density area of Kenya with a view to designing extension programmes and strategies which significantly increase the efficient utilization of existing facilities, services and resources without also unduly escalating the amount of time, effort and finance currently being expended on extension. That is, we intend to study the extension clients to learn about extension-related farm level constraints so as to enable us to improve the present extension system. It is basically an exploratory, baseline study designed to produce an inventory of current farm practices in the area of animal and crop husbandry, to establish benchmarks with regard to such matters as extension agent contact with farmers, farm level resources particularly with regard to land size and tenure, farmer communication linkages with external sources of innovative ideas and practices, as well as to determine individual characteristics such as level of education and literacy of the decision maker on the farm.

As the baseline, therefore, the present study is the "before" stage or measure of a field experimental design which will eventually encompass a "treatment" or strategy stage, and finally, an "after" or strategy evaluation stage. Thus, the main purpose of the present study is to produce findings that will enable us to hypothesize possible high-pay off extension strategies or treatments for experimentation from a reliable data base rather than from a base of pure conjecture.

To this end, Tetu Division of Nyeri District was selected for study. Firstly, Tetu is a relatively advanced area both in terms of crop practices and of animal husbandry, thereby allowing us to examine a greater range of farm enterprises across farmers at different levels of progressiveness. Secondly, Tetu Division is a first phase area of the Special Rural Development Programme (SRDP) with a comprehensive development programme already drawn up. This programme emphasizes two broadly distinguishable areas of rural development: one which is characterized by capital-intensive inputs, such as the construction of costly infrastructural facilities; and the other characterized by idea-intensive inputs, such as the development of innovative extension strategies like farm management practices.
The present study is predominantly concerned with developing the idea-intensive aspect of rural development.

THE BROAD PROBLEM AREA

The state of agriculture in developing countries reflects a curious paradox: peasant farmers, "the majority of mankind" (Shanui, 1966), are still characterized as "... subsistence agricultural producers ... who are seldom completely self-sufficient" (Rogers et al, p.20 1969) and who are given to using archaic production methods and low-yielding seed varieties at a time when new, relatively inexpensive, easily accessible, high-yielding crop varieties and innovative production methods offer an undeniable potential for revolutionizing peasant agriculture into a cash economy. In order for this new technology to be beneficial, it must reach the hands of the peasant farmers. The basic research question of the present study, therefore, is: How can rural development innovations be put into practice as quickly as possible? It is our contention that the solution to this problem rests to a very large extent with the government extension personnel who are the principal agents of change in the rural areas.

"A change agent is a professional who influences innovation decision in a direction deemed desirable by a change agency" (Rogers with Svenning, 1969, p.169). This definition emphasizes the change agents function as a link between two social systems: 1) the change agency, such as government ministries, commercial organizations and similar formalized sources of new ideas and practices; and 2) the client social system which, for our purposes, is composed largely of peasant farmers. In developing countries the centrality of the change agents role in the process of development cannot be over emphasized.

If we removed the change agents, the whole process of diffusion would probably slow down and come to a grinding halt. This point is another way of saying that much social change now occurring in peasant villages is the result of programmes of planned change, programmes in which the change agent is a central figure (Rolling and Rogers, 1970).

The notions of planned or deliberately introduced change establishes the extension personnel of government as both the agent provocateur of the crisis of rising expectations as well as the principal source of satisfaction of these expectations, by preventing them from deteriorating into a crisis of rising frustrations.
For these reasons we feel justified in focusing our study upon the extension agent and his client-system.

BACKGROUND TO THE STUDY

"Throughout the world, the developing countries are attempting in a relatively brief span of time to narrow the gap between themselves and those nations with a richer technology and higher standard of living. To achieve this, they are launching and carrying forward nation-wide programs of change and are inviting from outside thousands of specialists to strengthen these programs" (Council of Social Work Education, 1959, p.ix).

Kenya is moving into the forefront of developing nations in this regard with its Special Rural Development Programme (SRDP) which is generally held to be a unique and important innovation.

The National Rural Development Committee (NRDC) of Kenya expresses the essence of the SRDP in the following way:

The Development Plan 1970-74 takes as its basic strategy the broadest possible development of the rural areas. All sectoral programmes place emphasis on rural action. Heavy investment is planned in fundamental infrastructure such as roads, bulk handling facilities, water supplies and electrification. Rural growth centres, marketing facilities, stock routes, holding grounds and disease control will all be emphasised. Land adjudication, registration, credit arrangements and cooperatives will receive increased attention. Diversification of the rural economy is also to be stressed.

While many major development programmes are to be financed and executed in respect of these broad objectives, special additional intensive efforts are to be directed to an experimental programme to test new approaches to certain basic problems in rural development. This programme is intended to test a coordinated approach to the task of increasing employment opportunities and raising the level of incomes in rural areas. To achieve maximum impact at a rapid pace, the programme will be executed within the existing machinery of Government by the application of additional inputs of personnel and resources to a plan jointly devised by field and headquarters personnel. The Special Rural Development Programme is only part of a much wider national programme of rural development, and in no way upsets the priorities of the national programme into which it fits. The implementation of this programme does not mean that other programmes will be affected or delayed, or that areas not at present covered by the programme will be neglected (Statement approved by the NRDC on the 23rd January, 1970).

To this end, 14 areas were selected in 1968 to provide a representative cross-section of levels and problems of development in
the small-holder farming areas of Kenya. Six of these areas were designated first phase areas, one of which, Tetu Division is the area with which the present study is primarily concerned.

The NRDC is responsible for co-ordinating the programme and for negotiating external financial and technical assistance with donor agencies and countries willing to participate in the programme. To date, the Swedes, Norwegians, British, Americans, Danes, Dutch, Germans and FAO are either already involved or interested in becoming involved in the SRDP.

Since it was intended to implement results as soon as they were obtained, the programme was to be monitored and evaluated as it proceeded. This monitoring was to be carried out by staff of the National Rural Development Committee secretariat with appropriate assistance from the Institute for Development Studies, University of Nairobi.

General Objectives of the SRDP. The primary objectives as stated by the NRDC, are to increase rural incomes and employment opportunities. The secondary objectives are to establish procedures and techniques for accelerated and self-generating rural development which can be repeated in other similar areas, and in particular, to improve the developmental capacity of Kenya government officials in this field.

The secondary objectives emphasize two important issues. First, all strategies and plans designed to achieve the primary objectives must meet a criterion of replicability in at least areas of similar ecology. Second, the SRDP should represent a series of initiatives explicitly designed to work through the existing machinery of Government and upon mobilizing as much as possible existing resources without having to create a major new organization, such as a Ministry of Rural Development, or to incur major expansions of staff of existing organizations.

As a planning exercise, the basic objective of the SRDP has been to set a pattern for realistic planning based on local potential. The procedure followed, in its boldest form, has been to ask a series of questions:

1. What is the potential of the area?
2. What are the constraints preventing that potential from being realised?
3. What programmes or actions can be taken to overcome those constraints?

4. What funds, staff, transport, training, etc., is needed to carry out those programmes?

Although the administrative unit represented by each of the 14 selected SRDP areas is the Division, most of the planning for the first phase areas was carried out by the Nairobi central office staff and by the Provincial-level staff, with generally considerably less participation by District and Divisional level staff.

Specific Objectives of the Tetu Division. The basic objectives, according to the Tetu Division Outline Programme (1969), are to:

... increase incomes and employment and to improve the quality of rural life. It is intended to enable smaller farmers to break out of subsistence cultivation and larger farmers to develop and provide employment. Economic diversification and the development of infrastructure will present employment opportunities and improve the amenities of rural life.

The foregoing statement provides the broad terms of reference for the present study. We must emphasize however that we are less concerned with the income/employment objective per se and more with determining and defining those behaviours which, if adopted either by the extension personnel or by the farmers in Tetu Division, will increase the likelihood in the long run of increased incomes and employment opportunities. To this end the Tetu Division Outline Programme suggests a few specific objectives:

The initial thrust of the programme will be agricultural production and marketing. An intensive extension effort, concentrating on farm management and credit, will be mounted for farmers .... Written materials, including a farm management manual, will increasingly be used to exploit the high literacy rates in the area. The capacity of the Wambugu Farmers' Training Centre will be expanded .... Through these means, attempts will be made to increase productivity of food crops, both to release land for cash cropping and to provide a regular marketable surplus which will encourage families to move further into the cash economy and buy more of their food. Special attention will be given to hybrid maize cultivation. In addition tea, pyrethrum, coffee, pigs, dairy and beef will be improved and extended as and when possible.

1. The geographic administrative units of Kenya, ranging from micro to macro, consist of sublocations within a location, locations within a division, divisions within a district, districts within a province, and provinces within the republic with the central administration located in Nairobi.
The "outline programme" does not clearly spell out what precisely is meant by "an intensive extension effort". It also leaves undefined the concept of farm management, nor does it indicate which farm management manual, if any, will be used. The specific objectives however do clearly suggest an experimental design of field research to determine which of various extension inputs produce the greatest adoption of those behaviours likely to increase productivity of food and other crops. Specifying the extension effort and experimental design marks the domain of the Tetu Extension Pilot Project.

THE TETU EXTENSION PROJECT

Almost every area of public concern has at least one type of change agent. Examples of various types of change agents are the agricultural assistants, community development officers, social workers, health visitors, commercial salesmen, missionaries, and last but certainly not least, school teachers.

School teachers, like agricultural assistants, are among a nation's front line change agents. Their job is to bring about a change in children from a state of ignorance to a state of education. They change children by giving them information, by teaching them techniques and practices of living productively. The jobs of the agricultural assistant, on the other hand, is to bring about a change in the parents of children from a state of ignorance in farming practices and productivity to a state of technological competence and efficiency. They change the parents by giving them information about new high-yielding seed varieties, improved stock breeds and more efficient husbandry techniques.

Teachers, however, attend teacher training colleges to learn how to teach. Most people would not consider leaving their children to the mercies of an untrained person. They insist on certification from a bonafide training institution. Teachers generally are not only trained in the content of what to teach but, more important, in how to teach what content to whom with what effect. Thus both the content and teaching style and approach differs markedly from class level to class level, ranging from the most elementary and simple to the most sophisticated and complex as one progresses upward through the education system. Progress from level to level is dependent upon tests to indicate eligibility for the higher level. There are different tests, different curricula, different approaches, even differently trained teachers for every
level in the educational system, ranging from kindergarten to University.

Agricultural assistants in Kenya on the other hand, are taught what content to teach, but apparently not how to teach what content to whom with what effect. They are certified not as experts in teaching but as experts in agriculture. And between these two domains, there lies a world of difference. If the content and teaching style differs from farmers at one level of development to those at another, it is the result of personal intuition rather than systematic training. Furthermore, advancement of farmers from one level to another is not based upon independent tests. There are no different tests, different curricula, different approaches, even differently trained extension personnel to teach at every level of farmer development, ranging from the most backward and laggardly farmer to the most advanced and progressive farmer.

Thus, classical errors are almost daily being perpetrated in the field by ill-prepared extension personnel. Examples abound of farmers who are still ignorant of the ABC of cultivation such as early planting, row cropping, weeding, fertilizing, rotating, disease and pest control. Yet these farmers are having foisted upon them such sophisticated and advanced innovations as farm planning and management complete with complex records and bookkeeping. In many cases, those engaged in extending farm management are themselves so poorly trained as to be incapable of planning their own farms properly let alone the farms of their clients. Consider, if we were talking about our school system, the futility of placing an untrained teacher in charge of preparing a reluctant kindergarten class of children to sit for their final school leaving certificates.

DEVELOPING A FARMER CLASSIFICATION INDEX

The primary requirement for classification is to produce an index which is both reliable and eclectic enough to rank order farmers on a socio-economic continuum ranging from laggardliness to progressiveness in terms of agricultural practices, social participation, exposure to external influences, education and such like. The

2. In a training session for agricultural assistants at a Farmer Training Centre in Western Province, a tenderfoot lecturer solemnly informed his audience that farm records were kept because (1) farming is a business enterprise and (2) the government requires farm records for tax purposes.
first problem is one of selecting the basic referent for classification. The most obvious referent is income. Throughout the world, income is usually a fairly reliable economic and social stratifier of people. In general terms, the higher the income of an individual or a family, the higher the social and economic status as well as the level of technological sophistication of that individual or family.

However, in so far as rural subsistence farmers are concerned, income as an indicant of socio-economic stratification is unreliable for the following reasons:

1. Subsistence production, according to Wharton (1963), is characterized by a low degree of commercialization or monetization and a level of living that is a minimum for survival. This being the case, it is difficult to estimate the income of a subsistence producer.

2. Even those farmers who have moved to some extent into a cash economy seldom keep records. Relying on the vagaries of the farmer's memory for a record of his income of usually protracted periods of time is not worthwhile.

3. Even those farmers who may be keeping records and who have accurate estimates of their income, are likely to be most reluctant to disclose such information to others, especially government servants, for fear that such information may be used for tax assessment.

Thus, the likelihood of getting accurate information on individual incomes is remote. Therefore, an alternative referent for classification is required. To this end, we have chosen to base our index upon the adoption of observable production increasing behaviours such as the acceptance of higher yielding seed varieties and animal breeds and more systematically controlled farming technologies. By focussing upon these overt manifestations of farmer progressiveness, we avoid the problem of estimating the value of subsistence production, the vagaries of the farmers' memory, or the farmers fears about divulging income information. The specific body of information we shall tap to achieve the index is known generally as the diffusion of innovations.

Elements of Diffusion. Diffusion is the process by which new ideas are communicated to the members of a social system. "Central elements in the diffusion processes are: (1) the innovation (defined as an
idea, practice or object perceived as new by an individual (2) which is communicated through certain channels (3) over time (4) among the members of a social system (Rogers with Shoemaker, 1970). The adoption of innovations, therefore, is the ultimate indicator of changed behaviour. It follows then that those individuals who are earlier to adopt new ideas relative to other members of the same social system are likely to enjoy the fruits of the innovations earlier than those other members. By this token, they may be deemed to be the more progressive than other members of their social system. That is, progressiveness, which we shall use synonymously with innovativeness, "... is the degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system" (Rogers, 1962, p.20).

The foregoing definition suggests a useful way of operationally rank-ordering farmers according to their degree of progressiveness: earlier adopters of an innovation, or battery of related innovations, are deemed more progressive than later or non-adopters. We are interested in agricultural progressiveness which suggests that the innovations which we select to rank-order farmers should be largely agricultural. Thus, likely innovations for selection are the adoption of hybrid maize, grade cattle, pigs as well as such practices as early planting, regular weeding, recommended spacing, disease and pest control, pruning and similar practices.

"There is much practical usefulness for change agents if they can identify the potential innovators (and laggards) in their audience, and then utilize different strategies of change with each of these sub-audiences" (Rogers with Svenning, 1969, p.292). But merely knowing who the innovators and laggards are is not enough. There are reasons why some farmers are progressive while others in the same social system are laggards. Many of these reasons of antecedent conditions can be determined by examining key concepts which are related to progressiveness in general. For instance, literacy, change agent contact, exposure to mass media, participation in formal and

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3. We do not wish to imply that every innovation is a "good" innovation and all changes of behaviour following upon its adoption are necessarily desirable and useful. That is a value judgement which becomes the problem for policy makers in selecting those innovations they wish to promote and suppressing those which they do not.
informal community activities, farm size, labour force, cosmopolitanism and land tenure status are all variables which directly or indirectly determine the degree of innovativeness of an individual farmer.

Selecting a core set of concepts or independent variables to be related to progressiveness (which is our dependent or criterion variable) tends usually to be biased in favour of the particular disciplinary orientation of the researcher. To mitigate this tendency somewhat, we relied heavily upon a vast body of multi-disciplinary documents housed in the Diffusion Document Centre (DDC), Michigan State University, East Lansing, Michigan, USA. This DDC is a repository and information retrieval system for all publications dealing with the diffusion of innovations from all over the world. As of 1969, it contained over 1,800 publications. All materials in the centre are content-analyzed, coded and punched on IBM cards to facilitate retrieval. The principal author of the present report was curator of the DDC during 1966-67 and was responsible for coding and analysing much of the data. Based upon this experience, a core set of independent variables found to be most consistently related to progressiveness across disciplines and across cultures, was established. We have mentioned some of these variables above. Each of them will be given explicit treatment during our discussion of the findings of the present study.

Thus, given that we shall be able to develop a criterion for classification based upon degree of agricultural progressiveness, it is our intention to utilize the core of independent correlates of progressiveness to develop profiles of groups of farmers at various progressiveness.

**METHODOLOGY**

The present study is the baseline or "before" measurement of a three part field experiment. "A field experiment is a research study in a realistic situation in which one or more independent variables are manipulated by the experimenter under as carefully controlled conditions as the situation will permit" (Kerlinger, 1964, p.382). The typical research design for a field experiment

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4. An independent variable is the presumed cause of the dependent variable, the presumed effect (Kerlinger 1964, p.39).
requires a three stage plan:

<table>
<thead>
<tr>
<th>STAGE I</th>
<th>STAGE II</th>
<th>STAGE III</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Before&quot; Measurement</td>
<td>Treatment</td>
<td>&quot;After&quot; Measurement</td>
</tr>
<tr>
<td>1. Of Dependent Variable (Present Degree of Progressiveness)</td>
<td>Manipulation of Active(^5) Independent Variable (Controlled change in Content/Approach of Agent/Client Contact)</td>
<td>Remeasurement of Assigned variables to estimate effects of the Treatment</td>
</tr>
<tr>
<td>2. Of Assigned(^5) Independent Variables (Present degree of Literacy, Cosmopolitaness etc.)</td>
<td>&quot;Baseline&quot; Measurement</td>
<td>Strategy</td>
</tr>
<tr>
<td>&quot;Baseline&quot; Measurement</td>
<td></td>
<td>Evaluation Measurement</td>
</tr>
</tbody>
</table>

**FIGURE 1 : TYPICAL RESEARCH DESIGN FOR A FIELD EXPERIMENT**

Stage I of a field experiment is the "Before" or Baseline measurement during which we determine precisely what degree of progressiveness each farmer in the sample to be studied possesses. This is done so that we may know at some future time what progress each farmer has made as a result of the experimental treatment. Also measured at this stage are a number of assigned independent variables with a view to gaining as much information as possible about the characteristics of the client system to help in designing experimental treatments or strategies. The present study is primarily concerned with Stage I of the total experimental design.

Stage II of the experiment concerns the manipulation of those variables which are likely to cause change in the dependent variable. For instance, change agent contact is an active independent variable which we can vary in many ways in order to speed up the process of development. More contacts per farmer could be made, a new style of approaching the farmer could be utilized, new information could be channelled to the farmers. Each of these are attempts to manipulate the farmer into accepting new ways of farming and living. In a sense, farmers here may be likened to patients needing treatment to overcome their ailments. The farmers may be said to be suffering from an ailing economy and the business

5. There are in general two kinds of operational definitions of variables: (1) measured and (2) experimental. A measured operational definition is one that describes how a variable will be measured. For example, progressiveness may be defined by a standardized progressiveness test or by earliness of adoption of new ideas. An experimental operational definition spells out the details (operations) of the investigators manipulations of a variable. Any variable that is manipulated, then is an active variable. Any variable that is measured only and not manipulated is called an assigned variable.
of the behavioural scientist is to prescribe a course of treatment which is most likely to overcome that ailment.

The final stage of experimental design is the evaluation or re-measurement. This is the moment of truth for the researcher who will now determine whether the course of treatment he has prescribed has borne fruit. He does so by comparing the degree of progressiveness of each farmer in the re-measurement against the progressiveness score that he had at the stage I measurement or baseline. If, and only if, there is an increase in degree of progressiveness that is both greater than what could be expected by chance as well as greater than what would have occurred anyway had the treatment not been prescribed, are we able to conclude that the researchers' efforts were successful.

**Sampling for the Baseline.** Tetu Division in Nyeri District is the area of the present study. The average altitude of the Division is between six and seven thousand feet. The average annual rainfall is 35 to 40 inches and the soil is volcanic and excellent for agriculture. Geographically, the area is dominated by high ridges and deep valleys with all year streams running from the eastern slopes of the Aberdares. There are two major rain seasons, known usually as the long rains from March to May, and short rains in October and November. The population of Tetu is comprised of one ethnic group, the Kikuyu. The total population of Tetu Division is over 92,000 with an average density of just under 400 per square kilometer. Thus Tetu Division is a relatively high potential (in terms of rainfall), high density area of Kenya.

There are between 12 and 13 thousand registered farms in Tetu Division. All farms in the Division are registered with the Land Registration Office in Nyeri. This registration was officially completed in 1962. These registered farms constitute the basic unit of analysis of the present study and the list of registered farms in the Land Registration Office comprised a comprehensive, reliable sampling frame from which to draw a representative cross-sectional sample of Tetu farms. From this frame, systematic

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6. The registry does not yield a list of landless farmers and so they were excluded from the study. However, they do exist. There are villages scattered throughout the Division containing landless families. These villages are compact agglomerations of family units as compared to the scattered settlement pattern of the land-owning farmers of Tetu Division.
random sampling which consists simply of taking every sampling unit in the frame after a randomly selected starting point, was used. In all a sample of 380 farms were selected from the registry of which information was eventually gathered on 354 farms. We had originally aimed for a sample of 350 and had oversampled by 30 in order to account for normal attrition. Much of the attrition that occurred was due to more than one farm being registered in the name of the same farmer. In such case, we amalgamated the multiple farms into one unit.

There are four locations within Tetu Division. Ranking them according to population size, Thigingi is the largest followed by Aguthi, then Tetu and lastly Muhoyas location.

**Data Collection.** Data pertaining to the dependent and various independent variables were gathered principally via a largely precoded interview schedule. The schedule was extensively pretested before being rendered in its present form. Nevertheless, errors will occur as it is testified by the fact that "age" of respondent, an important variable for our purpose, was somehow omitted from the schedule. But this is a pilot project which should result in greatly improved schedules as replications occur elsewhere.

The interview schedule was administered by four specially chosen agricultural assistants under the supervision of university personnel. Although each of these assistants had some training at the Embu Institute of Agriculture, they were, nevertheless, intensively briefed not only on the application of the interview schedule, but also of the theoretic concepts behind each of the questions in the schedule. This was done in order to help them probe for relevant answers intelligently. The quality of returned interviews was extremely high with hardly any incidence of missing data. We attribute this excellent return to the fact that the four interviewers became ego-involved in the study to the extent where gathering accurate information became more important than getting the jobs done quickly.

Coding, card punching, and processing of the data occurred under the expert supervision of the Data Processing Unit, Institute for Development Studies.
FINDINGS

For reasons of parsimony of reporting, we have chosen to present our findings in a series of self-contained units in which both the theoretic and operation definitions of the concepts being used as well as the findings about the relations between these concepts and our dependent variable (agricultural progressiveness) are presented.

Data will be presented in the form of two way tables of percentaged distributions and in some cases, in the form of means. We have endeavoured, as much as possible, to keep the level of statistics at a level of unsophisticated simplicity to enable even the lowest level field staff in the Kenya Government services to understand and apply.

Because qualitative differences are expected from location to location (it is, for instance, commonly held that Muhoyas location is the most progressive in Tetu Division), we shall also present all our data broken down by location. Thus, in addition to farmer progressiveness, we have a second dependent variable, location.

Indexing Progressiveness

Progressiveness is defined as the degree to which an individual is relatively earlier to adopt new ideas than other members of his social system. In operational terms, the individuals we are studying are heads of farms, i.e. individuals who are in day-to-day decision-making management of farm. The social system studied is that which is contained in the geographic boundaries of Tetu Division, excluding those individuals who are landless and living in villages. Degree of progressiveness is measured by the number of years since first adoption of each of the following innovations: (1) hybrid maize, (2) coffee, (3) tea, (4) pyrethrum, (5) certified potatoes, (6) macadamia nuts, (7) grade cows, and (8) pigs. Each farmer was asked how long he had been engaging in each of these eight practices, and his progressiveness score is acquired by summing across all eight innovations. Thus, our progressiveness scale awards farmers a larger score (1) for having
adopted a greater number of the eight innovations, and (2) at a relatively earlier time.

The farmers with the lowest score on the scale were labelled laggards. These laggards, 63 altogether, scored zero on the scale: i.e. they were not engaged in any of the eight innovations of our index. The balance of the farmers were arbitrarily divided into three groups of more or less equal size. We could just as well have divided them into four, five, ten or even only two groups. We settled for three groups in addition to the laggards as this allowed us to look at a minimum of two shades of qualitative differences between two groups above the mean (upper middle and most progressives) and two groups below the mean (lower middle and laggards).

Location and Progressiveness. In the total sample, we have designated 26 per cent of the farmers as most progressive, 27 per cent as upper middle progressives, 29 percent as lower middle progressives and 18 percent as laggards (see Table 1). When these are broken down by locations, it is noticed that Thigingi and Muhoyas emerges with somewhat higher proportions of most progressive farmers than Tetu and Aguthi. The slight advantage that Thigingi seems to have over Muhoyas is not significant.

<table>
<thead>
<tr>
<th>PROGRESSIVENESS</th>
<th>Thigingi</th>
<th>Aguthi</th>
<th>Tetu</th>
<th>Muhoyas</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Progressive</td>
<td>36%</td>
<td>20%</td>
<td>18%</td>
<td>31%</td>
<td>26%</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>24%</td>
<td>28%</td>
<td>30%</td>
<td>31%</td>
<td>27%</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>29%</td>
<td>27%</td>
<td>34%</td>
<td>23%</td>
<td>29%</td>
</tr>
<tr>
<td>Laggards</td>
<td>11%</td>
<td>25%</td>
<td>18%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
<td>39</td>
<td>354</td>
</tr>
</tbody>
</table>

In order to look at the separate effects of animal versus crop husbandry, we have designed two special indices to measure the slight advantage that Thigingi seems to have over Muhoyas is not significant.

7. In theory, a farmer who may have adopted all eight innovations may be deemed to have diversified to a point of low efficiency in any one of the enterprises. In actual practice in Tetu, few farmers were engaged in four or more enterprises at the same time. Multiple-enterprise farming tended to be balanced such that one food crop practice (hybrid), one cash crop (e.g. coffee) and one livestock enterprise (dairy farming) were those most likely to be practised simultaneously.
separately the livestock progressiveness and the crop progressiveness of farmers. These two measures, when amalgamated, produce the general progressiveness index which is used throughout the present report.

TABLE 2: LOCATION AND PROGRESSIVENESS BY LIVESTOCK AND CROP PROGRESSIVENESS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LIVESTOCK PROGRESSIVENESS</th>
<th>CROP PROGRESSIVENESS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Most Progressive</td>
<td>Upper Middle</td>
<td>Lower Middle</td>
</tr>
<tr>
<td>Thig</td>
<td>23% 8% 18% 41%</td>
<td>25 35 22 0</td>
<td>22 21 48 100</td>
</tr>
<tr>
<td>Agut</td>
<td>14 27 33</td>
<td>10 36 30 0</td>
<td>21 26 58 0 27</td>
</tr>
<tr>
<td>Tetu</td>
<td>21 26 3 22</td>
<td>2 21 48 100</td>
<td>31 11 31 100</td>
</tr>
<tr>
<td>Muho</td>
<td>33 53 29 23</td>
<td>2 21 48 100</td>
<td>38 0 0 100 100 100% 100% 100% 100% 100%</td>
</tr>
</tbody>
</table>

Muhoyas farmers distinguish themselves mainly in livestock husbandry while Thigingi farmers are the more accomplished crop husbandry people. Tetu tends more to animal husbandry while Aguthi toward crop husbandry. Muhoyas has an unaccountably high incidence of animal husbandry laggards. Both the most progressive livestock farmers and most progressive crop farmers tend also to be the most progressive farmers on the general index.

Factors of Production

The major factors of production may be listed as (1) capital, (2) land, (3) labour and (4) management. With regard to capital, our information treats more of income producing resources such as crops and livestock rather than with cash per se. Management, which in a systematized form we believe is largely absent in Tetu Division will become a major part of stage II of our experimental design. To this end, a separate paper on farm management and planning is being prepared (Bedi, 1971). Our discussion of factors of production will thus be restricted to capital, land and labour in the present paper.

Crop and Livestock. The principal cash crops in Tetu Division are hybrid maize, coffee, tea, macadamia, pyrethrum, and certified potatoes, all of which, excepting tea, coffee and pyrethrum are suited for cultivation in the whole Division. The others are restricted to
certain areas of the Division, Tea and pyrethrum, for instance, are not suitable for cultivation in Aguthi location. Coffee is restricted in a different way: since 1965 expansion of coffee acreages in the Division has been officially banned. No restrictions are currently in operation with regard to grade livestock.

The degree to which each of our eight innovations was adopted by each of the four locations and each of the four progressiveness categories of farmers is shown in Table 3:

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
</tr>
<tr>
<td>64%</td>
<td>40%</td>
<td>78%</td>
</tr>
<tr>
<td>Coffee</td>
<td>58%</td>
<td>58%</td>
</tr>
<tr>
<td>Hybrid Maize</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td>Pigs</td>
<td>30%</td>
<td>35%</td>
</tr>
<tr>
<td>Local Cattle</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>Macadamia</td>
<td>21%</td>
<td>35%</td>
</tr>
<tr>
<td>Pyrethrum</td>
<td>17%</td>
<td>0%</td>
</tr>
<tr>
<td>Tea</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>Certified</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Potatoes</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>260%</td>
<td>259%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
</tr>
</tbody>
</table>

*Totals may add up to more than 100% because many farmers engage in more than 1 of the 8 enterprises.*

Grade cattle rearing leads the roster of primary cash-producing crops and livestock in the Division. Three out of every five farmers of Tetu keep grade cattle for dairy purposes. Broadly speaking, Muhoyas and Tetu locations tend more toward grade livestock farming whereas Aguthi and Thigingi are more inclined toward crop husbandry. Aguthi particularly blends a curious mixture of progressiveness (coffee, hybrid maize, macadamia) and laggardliness (local unimproved cattle).

Total percentages are an indicator of degree of diversification: the higher the total percent, the higher the degree of diversification among the farmers of a particular group or location. Thus, Thigingi and Aguthi tend to have somewhat higher degrees of diversification than Tetu and Muhoyas.

With regard to farmer progressiveness, there is a consistent decending order of magnitude of degree of adoption from most to least progressive for each of the eight innovations. This, of course is to be expected since the scale of progressiveness is based on these
<table>
<thead>
<tr>
<th>Crop</th>
<th>Livestock</th>
<th>Grade</th>
<th>Coffee</th>
<th>Hybrid Maize</th>
<th>Sows</th>
<th>Macadamia</th>
<th>Pyrethrum</th>
<th>Tea</th>
<th>Cert Potatoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 acres or 0 animals</td>
<td></td>
<td>40%</td>
<td>54%</td>
<td>69%</td>
<td>79%</td>
<td>79%</td>
<td>88%</td>
<td>90%</td>
<td>97%</td>
</tr>
<tr>
<td>Up to 1 &quot; or 1 &quot;</td>
<td></td>
<td>27%</td>
<td>39%</td>
<td>24%</td>
<td>17%</td>
<td>21%</td>
<td>12%</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>&quot; 2 &quot; or 2 &quot;</td>
<td></td>
<td>15%</td>
<td>5%</td>
<td>6%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&quot; 3 &quot; or 3 &quot;</td>
<td></td>
<td>4%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&quot; 4 &quot; or 4 plus</td>
<td></td>
<td>6%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>BASE</td>
<td></td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
</tr>
</tbody>
</table>
eight innovations. A small percentage of laggards have grade cattle. However nearly all of these are heifers or calves since few of them are dairy farmers. Respecting local livestock, there are no significant differences from group to group regarding the proportion of farmers in each group keeping local unimproved cattle breeds. Crop acreages and livestock numbers are relatively small in Tetu, few farmers having more than one acre of any crop or more than one animal of any livestock type. These limitations may be due mainly to limited farm sizes since, as we shall show later, few farmers have more than seven acres of land in the Division. However, in the case of some crops, such as coffee, macadamia and certified potatoes, other restrictions may be operating. Further expansions of coffee growing have been legally restricted in Tetu Division since 1965. Macadamia nuts have been adopted on a very small trial basis by most farmers. Many of them have only four or five trees, a small token adoption suggesting a wait-and-see attitude. Certified potato seed is not always readily available throughout the Division, thereby creating a restriction on adoption. Table 5 shows the adoption history of each of our eight innovations.

### TABLE 5: TYPE OF CROP OR LIVESTOCK BY YEAR OF FIRST ADOPTION

<table>
<thead>
<tr>
<th>How long have you been planting crops, keeping grade cows, pigs?</th>
<th>Grade Cows</th>
<th>Hybrid Coffee</th>
<th>Maize Pigs</th>
<th>Pyrethrum</th>
<th>Macadamia</th>
<th>Tea</th>
<th>Potatoes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YEAR OF ADOPTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-adopters from 1971</td>
<td>49%</td>
<td>54%</td>
<td>69%</td>
<td>70%</td>
<td>79%</td>
<td>98%</td>
<td>90%</td>
</tr>
<tr>
<td>1 year(s) ago from 1971</td>
<td>3</td>
<td>0</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2 year(s) ago from 1971</td>
<td>5</td>
<td>0</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3 year(s) ago from 1971</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5 year(s) ago from 1971</td>
<td>10</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>10 year(s) ago from 1971</td>
<td>14</td>
<td>31</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>20 year(s) ago from 1971</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>30 year(s) ago from 1971</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>8.3</td>
<td>9.6</td>
<td>2.7</td>
<td>6.1</td>
<td>3.0</td>
<td>6.7</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>BASE</strong></td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
<td>354</td>
</tr>
</tbody>
</table>

*Computed by excluding non-adopters.*
Grade cattle may be the farm enterprise adopted by most farmers, but coffee is the one that, on the average, was adopted earliest in Tetu Division. The peak of coffee adoptions was about ten years ago followed a year later by grade cattle. Pyrethrum, tea and pigs adoption peaked mainly around 1965, while hybrid maize, macadamia, and certified potatoes are more recent comers, the bulk of adoptions only having occurred about three years ago.

Practices Associated with the Eight Innovations. Merely adopting an innovation such as hybrid maize is not enough. The adoption of each enterprise is really the adoption of a family of related innovations. For instance, merely adopting the hybrid maize seed itself is fruitless unless one also adopts the related practices (early planting, correct spacing, fertilizers, early weeding, and pest control) without which one is likely to get an even lower yield than if the local unimproved maize variety was used. Thus, for each of our eight innovations detailed information regarding the adoption of related husbandry practices was gathered. As a general rule the more progressive farmers are more conscientious about adopting the whole package of innovations associated with each enterprise than are the less progressive farmers.

Thus, an index has been constructed which appears to rank-order farmers adequately on degree of progressiveness such that we are enabled to distinguish four broad categories of farmers: (1) most progressives, (2) upper middle, (3) lower middle, and (4) laggards.

Farm Size. Only minor difference in distribution of land exists from location with Muhoyas location having slightly larger farm sizes on the average. A fifth of all farmers in Tetu Division have less than two acres of land, the problem being greatest in Tetu Location (see Table 6). Very few farmers, one out of every twenty, possess farms in excess of twenty acres. The average size of a typical farm in Tetu Division is six acres.

Of most interest is the fact that the more progressive the farmer, the larger the size of his farm is likely to be. That is, the most progressive farmers have, on the average, three times more land than the laggards. From our evidence, this disparity in land size by level of progressiveness has not always been there. In 1959, when registration was completed in Tetu
### TABLE 6: LOCATION AND PROGRESSIVENESS BY FARM ACREAGE

<table>
<thead>
<tr>
<th>FARM ACREAGE</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIV:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
</tr>
<tr>
<td>Up to 1 acre(s)</td>
<td>6%</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>&quot; &quot; 2 &quot;</td>
<td>12</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td>&quot; &quot; 7 &quot;</td>
<td>30</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>&quot; &quot; 10 &quot;</td>
<td>11</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>&quot; &quot; 15 &quot;</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>&quot; &quot; 20 &quot;</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Over 20 &quot;</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>- MEAN ACREAGE</td>
<td>5.2</td>
<td>6.7</td>
<td>5.3</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
</tr>
</tbody>
</table>

Division no single farmer had more than one piece of land registered in his name. Since then (see Table 7), the most progressive farmers have been acquiring more pieces of land so that now, more than one third of them own two or more pieces of land. Thus, it seems likely that at the time of completion of registration, the disparity in land size between the more and less progressive farmers may not have been as large as it is today.

Farm Fragmentation resulting from traditional procedures of inheritance has long been regarded in Kenya as detrimental to development. Land consolidation has therefore been energetically pursued as a necessary first step on the road to individual development. In Tetu Division this work was completed in 1959 when all farms in the Division became fully registered.

But, fragmentation is beginning to occur again. The circumstances are different this time, because it is the more progressive farmers who now tend to have more than one unconnected piece of land in the same area. This new form of fragmentation is not due to inheritance. It is more likely the result of the more progressive farmers buying up the land of their less enterprising neighbours.

There is a slight though insignificant tendency for this practice to be a little more prevalent in Tetu and Muhoyas than in Thigingi and Aguthi.

Thus, there is a very clearly an increasing tendency for some farmers to buy other farmers out, shown by a decided movement towards fewer and fewer farmers with larger and larger farms in Tetu Division. Where dispossessed farmers go to is not known to us.
TABLE 7: LOCATION AND PROGRESSIVENESS BY FARM FRAGMENTATION

<table>
<thead>
<tr>
<th>How many Separate Pieces of land do you own in this Division?</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Piece</td>
<td>Thig</td>
<td>Most</td>
<td>TOTAL</td>
</tr>
<tr>
<td>2 Pieces</td>
<td>Agut</td>
<td>Upper</td>
<td>82%</td>
</tr>
<tr>
<td>3 Pieces &amp; more</td>
<td>Tetu</td>
<td>Middle</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Muho</td>
<td>Lower</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laggards</td>
<td>96%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>TOTAL</td>
<td>80%</td>
</tr>
<tr>
<td>BASE</td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
</tr>
</tbody>
</table>

hunch is that some may still be in the division living with other landless people in the villages, while others may have gone to swell the numbers of farmers in the settlement schemes, and still others have moved to the peri-urban Mathari Valleys thereby contributing to the burgeoning urbanization problem.

Water: The principal source of water for home and farm use in Tetu Division is still the river or stream. Only in Muhoyas, where the Zaina river water reticulation scheme is in operation is the dependence upon river water for home use lessened. It is interesting to note that there are no laggards claiming to get water for home use from a reticulation scheme (see Table 8)

The more individualized sources of water for home use are rainwater tanks, wells and boreholes, most of which tend to be owned by more progressive farmers. The exception is wells which a fair number of laggards claim as a source of water for home use.

Therefore, the more progressive the farmer, the larger his total farm acreage and the more likely he is to own two or more unconnected pieces of land in the same area. The tendency is toward fewer and fewer farmers with larger and larger farms. The principal source of water of the home, animals, and small scale vegetable irrigation is the river or spring.

Farm Labour. Our primary concern here is to determine the relative numbers of household members and paid labourers employed in the different location and by farmers at different levels of progressiveness. A more detailed discussion of the agricultural employment
TABLE 8 : LOCATION AND PROGRESSIVENESS BY WATER FOR HOME USE

<table>
<thead>
<tr>
<th>Where do you get your water for home, livestock and farm use?</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
</tr>
<tr>
<td></td>
<td>Most</td>
<td>Upper</td>
<td>Lower</td>
</tr>
<tr>
<td>River/Stream</td>
<td>81%</td>
<td>91%</td>
<td>85%</td>
</tr>
<tr>
<td>Rainwater</td>
<td>6</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Tank</td>
<td>11</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Well</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Reticulation Scheme</td>
<td>4</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Borehole</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>104%</td>
<td>109%</td>
<td>107%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
</tr>
</tbody>
</table>

TABLE 9 : LOCATION AND PROGRESSIVENESS BY TYPE OF LABOUR USED

<table>
<thead>
<tr>
<th>How many Family Members and Paid Labourers work on this Shamba?</th>
<th>FAMILY LABOUR</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig Agut Tetu Muho</td>
<td>Most</td>
<td>Upper</td>
<td>Lower</td>
</tr>
<tr>
<td>Mean No working</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fulltime</td>
<td>2.7</td>
<td>2.4</td>
<td>2.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Parttime</td>
<td>2.5</td>
<td>2.3</td>
<td>2.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Seasonal</td>
<td>0.7</td>
<td>0.5</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>PAID LABOUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean No working</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fulltime</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Parttime</td>
<td>0.2</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Seasonal</td>
<td>2.3</td>
<td>2.4</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
<td>39</td>
</tr>
</tbody>
</table>

is undertaken by Gwyer and Ruigu (1971). On the whole, household members provide the full time and part-time labour force on farms throughout the Division whereas seasonal employment is more the precinct of paid labourers (See Table 9). The head of the household, if he lives on the farm, and his wife are the most frequently found fulltime employees while children at school and household members employed elsewhere in the Division are usually the part-time workers. Paid labourers are most
frequently employed at peak periods such as coffee harvesting, tea and pyrethrum picking, weeding, and in land preparation.

While there are no significant differences in the average number of full time family members working on the farm from one level of progressiveness to another, substantial differences particularly between most progressive farmers and laggards, are in evidence with regard to part time family workers and especially seasonal paid labourers.

Thus, family members are more likely to provide the full-time and part-time farm labour whereas paid employees are more likely to be only seasonally employed. The more progressive the farmer, the more likely he is to employ greater numbers of part-time family members and paid seasonal employees.

Farm Management. The subject of farm management and planning in Tetu Division is more thoroughly treated by Bedi (1971) who is responsible for discussing the management aspects of the second phase of the Tetu extension experiment. Thus, we shall limit ourselves to a discussion of the person in day-to-day management of the farm and to the registration status of the farm (Table 10).

Less than half the farmers of Tetu Division run their farms themselves. There is a tendency for the very best and very worst farmers to run their own farms. Wives and sons are the most likely people to run the farm on behalf of its owner especially among progressives. The owner, his wife or his son are seemingly the most directly committed to, and therefore responsible for making farm decisions on the farm.

About three fifths of all farmers in Tetu Division have neglected to take the relatively inexpensive (5/-) step to acquire title deeds for their farms. This apathy is largely among the less progressive farmers. Title deeds are being acquired it seems, more for achieving specific ends, such as providing loan collateral, and less merely as evidence of possession of property. There are no significant differences in the percentages of farmers who have acquired title deeds in the different locations.

The owners of large acreage farms are the ones most likely to be found living on them, and taking a personal interest in managing them (see Table 11). Small farms, particularly those
### TABLE 10: LOCATION AND PROGRESSIVENESS BY FARM MANAGEMENT AND REGISTRATION STATUS

<table>
<thead>
<tr>
<th>Who manages this farm on a day-to-day basis?</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>on a day-to-day basis?</td>
<td>Thig Agut Tetu Muho</td>
<td>Most Upper Lagg Progsve Middle Middle ards</td>
<td>TOTAL</td>
</tr>
<tr>
<td>Is this farm registered titled?</td>
<td>40% 48% 51% 43%</td>
<td>56% 39% 38% 53%</td>
<td>45%</td>
</tr>
<tr>
<td>Farm MANAGEMENT</td>
<td>69x727</td>
<td>155x727</td>
<td>222x727</td>
</tr>
<tr>
<td>Owner</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Wife</td>
<td>29</td>
<td>28</td>
<td>19</td>
</tr>
<tr>
<td>Son</td>
<td>14</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Brother</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Father</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Mother</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Other Relative</td>
<td>5</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Paid Manager</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>FARM STATUS</td>
<td>69x727</td>
<td>155x727</td>
<td>222x727</td>
</tr>
<tr>
<td>Does not know</td>
<td>2%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Registered only</td>
<td>43</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>Fully Titled</td>
<td>55</td>
<td>60</td>
<td>62</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
</tr>
</tbody>
</table>

Under two acres are most likely to be left to a wife, son or other relative to run, while the owner is presumably away elsewhere in the country.

Thus, more progressive farmers are more likely to have title deeds to their land. The larger the land, the more likely is it to be managed by the owner himself.

### TABLE 11: FARM SIZE BY FARM MANAGEMENT

<table>
<thead>
<tr>
<th>FARM MANAGEMENT</th>
<th>Up to 2 acres</th>
<th>Up to 4 acres</th>
<th>Up to 7 acres</th>
<th>Over 7 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>37% 48% 38%</td>
<td>42% 42% 42%</td>
<td>53% 53% 53%</td>
<td>64% 64% 64%</td>
</tr>
<tr>
<td>Wife</td>
<td>30 28 28</td>
<td>27 27 27</td>
<td>18 18 18</td>
<td>18 18 18</td>
</tr>
<tr>
<td>Son</td>
<td>9 13 13</td>
<td>16 16 16</td>
<td>8 8 8</td>
<td>8 8 8</td>
</tr>
<tr>
<td>Other Relative</td>
<td>4 4 4</td>
<td>6 6 6</td>
<td>2 2 2</td>
<td>2 2 2</td>
</tr>
<tr>
<td>All Others</td>
<td>4 4 4</td>
<td>6 6 6</td>
<td>2 2 2</td>
<td>2 2 2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100% 100% 100%</td>
<td>100% 100% 100%</td>
<td>100% 100% 100%</td>
<td>100% 100% 100%</td>
</tr>
<tr>
<td>BASE</td>
<td>74 95 93</td>
<td>95 93 93</td>
<td>92 92 92</td>
<td>92 92 92</td>
</tr>
</tbody>
</table>
To conclude this section on the factors of production, we have found that more progressive farmers differ markedly from less progressive farmers in terms of having greater quantity and quality control over the major factors of production, namely, land, labour, capital and management.

Factors of Communication.

Individuals who are in communication with sources of innovative ideas are likely to be more progressive than those who are not. The individual's acquisition of modern agricultural technology may depend very largely upon his access and exposure to the mass media and to interpersonal channels of communication, particularly those channels linking him with professional sources of innovation such as extension agents.

The process of technological development may be regarded as consisting of (1) those who, by profession or personal altruism, advocate the adoption of innovative ways of living and (2) those target people who are the potential adopters of these innovations. These two basic types of people must be in communication with each other, either directly or indirectly, for the transfer of the innovations to occur.

For the purposes of the present paper, communication is defined as the process by which messages of one sort or another are transmitted from a source to a receiver through channels. The messages of particular interest to us are those emanating from professional sources of new ideas such as extension agents and which convey information about innovations with the express intent of provoking the adoption of those innovations by a target set of receivers, such as peasant farmers.

It is necessary at the outset to distinguish between mass media and interpersonal channels of communication because of the differential effects which they tend to have upon receivers. Mass media channels are all those means of transmitting messages that involve a source of one individual or group of individuals to reach an audience of many. Primary examples are the electronic media such as radio, television, and movies, and the print media such as newspapers, magazines, pamphlets and posters. Interpersonal channels are all those means of communication involving direct face-to-face transfer of messages from source to receiver. Primary examples include farm visits by extension personnel, teachers in Farmer Training Centers and method demonstrations.
In comparison to inter-personal communication, mass media communication is generally distinguished by:

1. the larger potential size of receivers that can be simultaneously reached by one transmission;
2. the difficulty of obtaining feedback due to lack of direct contact between source and receiver, thereby rendering neither capable of exercising much control over the other.

As a result, research evidence on the diffusion of innovations in developing countries generally indicates that for purposes of gaining adoption of new ideas and practices, inter-personal channels of communication are more effective than mass media channels. Of the inter-personal channels, research in developing countries indicates that the single most important determinant of developmental activity in rural areas is the government extension agent. Farmers with high extension agent contact are generally more progressive than those with low contact (Rolling and Rogers, 1970).

However, when the purpose is making the greater proportion of a population aware of the existence of the innovations, then mass media channels are considerably more effective than inter-personal channels.

Another potentially important determinant of an individual's innovative behaviour is the degree to which that individual is more venturesome than other members of his social system. Certainly, the individual who frequently leaves his own neighbourhood to visit other rural and urban areas stands a better chance of face-to-face contact with sources of new farming ideas than the individual who confines himself to the immediate surroundings of his primary social system. The former type of individual is referred in the diffusion literature as being "cosmopolite" and the latter as being "localite".

Thus, we shall deal in this section on communication factors with such interpersonal channels as change agent contact, formal participation and cosmopolitanism, and such mass media channels as exposure to the print and electronic media.

**Extension Contact.**

An extension agent is a professional who influences innovation adoption decisions in directions deemed desirable by the Government. The role of the extension agent is to serve as a linkage or middleman between two basic social systems: (1) The client social system who are the farmers in Tetu Division, and (2) the main innovation source which, in so far as the agent is concerned...
is the Government which in turn is connected to such primary sources of innovation as research stations, academic institutions, and the private sector. We are especially interested in determining which farmers are contacting or being contacted by such extension agent as those connected with agriculture, community development, health and home economics, and the administrative functions of government.

Agent Initiated Contact. In this section, we shall deal with essentially two kinds of agent initiated contact; (1) One-to-one contact generally involving one extension agent contacting one farmer on an individual basis; and (2) One-to-group contact involving an extension agent contacting more than one farmer on a collective basis such as in the conduct of method demonstrations.

1. One-to-One Contact: In almost every department of extension activity, the more progressive farmers receive disproportionately greater attention from government extension staff than laggards. Indeed nearly two fifths of the laggards, compared to none of the most progressives, have never been visited by an extension officer of any kind during the last year. Note however, that we cannot tell from the data whether extension contact is actually responsible for producing progressive farmers, or whether extension agents tend merely to look for farmers who are already progressive to deal with. All we can say at this stage is that extension contact is very highly associated with farmer progressiveness.

This bias in favour of more progressive farmers notwithstanding, the results suggest a rather better than expected extension contact record in Tetu Division. Only eight percent of all the farmers of Tetu Division report never having been visited at least once during the past year by one kind of extension agent or another. No one of the four locations received any greater attention from extension agents than the other three.

2. One-to-Group Contact: Table 13 shows the finding regarding meetings and demonstrations attended by farmers at least once in the past year. Chief's barazas are the most ubiquitously attended extension activities in Tetu Division: even the vast majority of laggards attend at least one each year. However, the primary extension technique for getting farmers to attend barazas is believed to be coercion.
Table 12: Location and Progressiveness by Agent Initiated One-to-One Contact

<table>
<thead>
<tr>
<th>Division</th>
<th>Agriculture</th>
<th>Livestock</th>
<th>Community Dev.</th>
<th>Administration</th>
<th>Health</th>
<th>Home Economics</th>
<th>None</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fhig</td>
<td>89%</td>
<td>67</td>
<td>8</td>
<td>71</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>262%</td>
</tr>
<tr>
<td>Agut</td>
<td>82%</td>
<td>56</td>
<td>3</td>
<td>75</td>
<td>6</td>
<td>5</td>
<td>11</td>
<td>238%</td>
</tr>
<tr>
<td>Tetu</td>
<td>76%</td>
<td>75</td>
<td>4</td>
<td>88</td>
<td>17</td>
<td>3</td>
<td>5</td>
<td>270%</td>
</tr>
<tr>
<td>Muho</td>
<td>87%</td>
<td>87</td>
<td>8</td>
<td>82</td>
<td>21</td>
<td>3</td>
<td>10</td>
<td>298%</td>
</tr>
<tr>
<td>Most Progsve</td>
<td>100%</td>
<td>93</td>
<td>7</td>
<td>85</td>
<td>20</td>
<td>10</td>
<td>7</td>
<td>315%</td>
</tr>
<tr>
<td>Upper</td>
<td>96%</td>
<td>77</td>
<td>7</td>
<td>80</td>
<td>13</td>
<td>7</td>
<td>1</td>
<td>281%</td>
</tr>
<tr>
<td>Lower</td>
<td>85%</td>
<td>63</td>
<td>6</td>
<td>82</td>
<td>11</td>
<td>3</td>
<td>4</td>
<td>254%</td>
</tr>
<tr>
<td>Laggards</td>
<td>41%</td>
<td>22</td>
<td>2</td>
<td>53</td>
<td>0</td>
<td>2</td>
<td>37</td>
<td>157%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>84%</td>
<td>68</td>
<td>5</td>
<td>77</td>
<td>12</td>
<td>6</td>
<td>8</td>
<td>260%</td>
</tr>
</tbody>
</table>

*Note: Totals add to more than 100% because many farmers were visited by more than one agent.*

Crop and animal husbandry demonstrations are primarily attended by the more progressive farmers. So too are farming demonstrations put out by commercial firms. The Farmer Training Centres are utilized mainly by farmers who are already progressive and only the most progressive farmers ever receive farm planning advice. This latter point however is in keeping with the thesis of the present authors, who believe that only the most progressive farmers are likely to benefit from farm planning demonstrations. Home economics demonstrations, on the other hand, while having the potential of benefiting poor farmers more, are largely attended by members from more progressive farms.

Apparently contact with extension agents is greatly valued by farmers. Virtually all farmers who reported attending any of the meetings and demonstrations listed above also claimed to have found them to have been very useful in providing advice and information about agricultural and household matters.

To highlight the disproportionate extension attention received by more progressive as compared to less progressive farmers, demonstration plots are only placed on the farms of more progressive farmers. We are informed that this practice is done as a matter of...
policy in Tetu in that only co-operative and advanced farmers are selected. If it is a policy to select only the best farmers for demonstration plots, then it becomes almost axiomatic that farm demonstration plots are intended to influence only the more progressive farmers. Because none of the demonstration plots appear on the farms of less progressive farmers, it becomes difficult for less progressive farmers to believe that what is being demonstrated on the best farms can also be made to work on theirs. That is to say, it is too difficult to misinterpret the intentions of extension personnel who appear to be implicitly discouraging less progressive farmers by explicitly failing to select any of their farms for a demonstration plot.

### TABLE 13: LOCATION AND PROGRESSIVENESS BY AGENT INITIATED ONE-TO-GROUP CONTACT

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
<td>Muho</td>
</tr>
<tr>
<td>Most</td>
<td>Upper</td>
<td>Lower</td>
<td>Lagg</td>
</tr>
<tr>
<td>Progsv</td>
<td>Middle</td>
<td>Middle</td>
<td>ards</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chief's</td>
<td>Baraza</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agricul-</td>
<td>tural Dem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Husbandry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Home Econ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CommercialDem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F.T.C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Farm Plan-</td>
<td>turing Dem.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEMONSTRATION PLOT ON FARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
<tr>
<td>BASE</td>
</tr>
</tbody>
</table>

*(Totals add to more than 100% because many farmers attended more than one meeting)*
Thus, extension agents from both agricultural and non-agricultural sectors of government are more likely to contact more progressive farmers rather than laggards on a one-to-one basis. The more progressive the farmer, the more likely he is to attend one-to-group method demonstrations and farmer training courses, and the more likely he is to be selected for a demonstration plot.

**Client Initiated Contact.** In this section, we deal with two kinds of client initiated contact (1) directed contact involving a deliberated search for an expert source to provide specific answers to particular problems; and (2) non-directed contact involving a large measure of serendipity whereby the individual by his mobility increases the chances of his coming into contact, by fortuitous happenstance, with innovations.

1. **Directed Contact:** More progressive farmers are overwhelmingly more prone to voluntarily visit extension personnel for advice and information on matters not only concerning agriculture, but also personal health problems and home economics (See Table 14). Indeed, two thirds of all laggards, who are presumably the neediest of extension contact, do not even bother to visit extension personnel for advice and information about community development, health and home economics.

   We cannot tell from our data whether it is the extension staff who are avoiding laggardly farmers or whether laggardly farmers are avoiding extension personnel. What appears to be one reasonable conclusion, however, is that extension staff have few constructive suggestions to give the laggardly farmers hampered as they are by limited resources for development. Thus extension agent may well be embarrassed at the prospect of fruitless contact, and the laggardly farmer may likely be sceptical about the advice he is likely to receive anyway.

   Thus, more progressive farmers are more likely than less progressive farmers to voluntarily visit extension agents for advice and information about farmer and household matters.

2. **Non-Directed Contact:** We have studied three forms of non-directed contact; namely, formal participation, mass media exposures and cosmopolitanism. These three forms were selected for their potentially high pay-off in terms of fruitful contacts with sources of new ideas and practices.
Formal participation refers to the degree to which the individual is linked into the community networks and social organizations either as a member only or as an office bearer. Of interest here is to determine if more progressive farmers are involved both as members and as policy makers in the formal institutional life of their social system to a greater extent than less progressive farmers.

<table>
<thead>
<tr>
<th>LOCATIONS</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVISION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
</tr>
<tr>
<td>Agriculture</td>
<td>57%</td>
<td>47%</td>
<td>58%</td>
</tr>
<tr>
<td>Livestock</td>
<td>57%</td>
<td>43%</td>
<td>70%</td>
</tr>
<tr>
<td>Community</td>
<td>57%</td>
<td>43%</td>
<td>70%</td>
</tr>
<tr>
<td>Dev.</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Admin.</td>
<td>42%</td>
<td>31%</td>
<td>57%</td>
</tr>
<tr>
<td>Health</td>
<td>6%</td>
<td>1%</td>
<td>8%</td>
</tr>
<tr>
<td>Home</td>
<td>5%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>None</td>
<td>20%</td>
<td>44%</td>
<td>18%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
</tr>
</tbody>
</table>

As shown in Table 15, more progressive farmers are also more likely to be participants in the formal organizations of their communities. Furthermore, progressive farmers control the management of these organizations since they are more likely to be the office bearers than are less progressive farmers.

Mass Media Exposure treats vicarious rather than actual mobility of the individual in that the individual is only mentally rather than physically thrust into the outside world via newspapers, magazines, radio, television and cinemas. Exposure to these increases the chances of individuals becoming at least aware of the existence of other probably more desirable styles of living.

Very little differences in rates of exposure exist from location to location regarding any of the five types of mass media we measured.
TABLE 15: LOCATION AND PROGRESSIVENESS BY MEMBERSHIP OF ORGANIZATIONS

<table>
<thead>
<tr>
<th>Are you a member of the following organisations?</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
</tr>
<tr>
<td>Kanu</td>
<td>100%</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Coop society</td>
<td>74%</td>
<td>50%</td>
<td>71%</td>
</tr>
<tr>
<td>Local council</td>
<td>3%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Maendeleo</td>
<td>7%</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>School board</td>
<td>12%</td>
<td>14%</td>
<td>29%</td>
</tr>
<tr>
<td>Harambee group</td>
<td>62%</td>
<td>86%</td>
<td>78%</td>
</tr>
<tr>
<td>4K club</td>
<td>15%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Church group</td>
<td>33%</td>
<td>31%</td>
<td>36%</td>
</tr>
<tr>
<td>Sports club</td>
<td>5%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>None</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>331%</td>
<td>214%</td>
<td>325%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
</tr>
</tbody>
</table>

(Totals add to more than 100% because many farmers are members of more than one organization.)

However, the more progressive the farmer, the more likely he is to be exposed frequently to each of the five mass media channels. From our data, we cannot say whether mass media exposure is responsible for creating progressive farmers or whether the people who expose themselves to the mass media regularly already tended to be more progressive. Nor do we have any idea of the nature of the content propagated through the media which is in some way associated with farmer progressiveness.

An important adjunct of mass media exposure is functional literacy, defined as "the degree to which an individual possesses mastery over symbols in their written form, or is able to encode and decode written messages to write and to read" (Rogers with Svenning, 1969, p. 72). As the individual gains reading skills he is able to extend the scope of his experience through the print mass media. Since messages in the print (and other) media tend largely to promote or favour change, the peasant who can read is exposed to a generally favourable attitude toward new ideas, as well as to specific technical information that he may consider and adopt.
<table>
<thead>
<tr>
<th></th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVISION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig</td>
<td>Age</td>
<td>Tetu</td>
</tr>
<tr>
<td>DAILY PAPER EXPOSURE</td>
<td>Frequency</td>
<td>56%</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MAGAZINE EXPOSURE</td>
<td>Frequency</td>
<td>35</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>44</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>RADIO EXPOSURE</td>
<td>Frequency</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>TELEVISION EXPOSURE</td>
<td>Frequency</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>43</td>
<td>52</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>CINEMA EXPOSURE</td>
<td>Rarely</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>84</td>
<td>82</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>BASE</td>
<td></td>
<td>120</td>
<td>118</td>
</tr>
</tbody>
</table>
As shown in Table 17, three out of every five farmers in Tetu Division claim to be literate at least in the vernacular. This is a relatively high degree of literacy, given that the "majority (probably about 70 to 80 percent) of the peasants in less developed countries are functionally illiterate". (Rogers with Svenning, 1969, p.68).

The more progressive the farmer, the less likely he is to be functionally illiterate. Interestingly, differences between more and less progressive farmers in Tetu Division with regard to literacy in English is not very marked at all. Cosmopolitanism is the degree to which an individual is oriented outside his immediate social system. Individuals who confine their interests to their immediate environment with little interest in the world beyond are called localities. There are two Kikuyu proverbs which illustrate the importance of cosmopolitanism. The first states that "To go is to see" and it is certainly difficult to imagine that which has never been seen. It is, for example, considerably easier to describe and explain the rules of a cricket or baseball game to an individual who has seen but not understood the game as opposed to one who has never seen cricket or baseball in his life.

The second proverb states that "It is the individual who does not leave home who believes his mother to be the best cook". It is very difficult to persuade such a person by using abstract arguments that his mother's cooking can be improved upon. Thus cosmopolitanism deals with actual physical rather than vicarious mobility of the individual to escape for a time the narrow geographic confines of his primary social system.

We have operationalized cosmopolitanism as the frequency of visits made by individuals to areas of ever increasing distance from his own home (See Table 18).

### Table 17: Location and Progressiveness by Functional Literacy

<table>
<thead>
<tr>
<th>LITERACY</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig Agut</td>
<td>Tetu</td>
<td>Muho</td>
</tr>
<tr>
<td>None</td>
<td>41%</td>
<td>45%</td>
<td>37%</td>
</tr>
<tr>
<td>Vernacular</td>
<td>20</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Swahili</td>
<td>23</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>English</td>
<td>17</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
</tr>
<tr>
<td>How often do you leave your division to visit other divisions or towns in this:</td>
<td>LOCATION</td>
<td>PROGRESSIVENESS</td>
<td>DIVSN</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
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<tr>
<td>Rarely</td>
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<td>Never</td>
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<tr>
<td>Few times per month</td>
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<td>BASE</td>
<td>120</td>
<td>118</td>
<td>77</td>
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Perhaps the principal effect of the mass media exposure and concentration to new ideas, an awareness of other life ways and a greater readiness to try new ideas and practices, to escape from the bonds of time-annealed cultural habits.

To conclude this section on factors of communication, we have found that more progressive farmers have more agent contact as well as self initiated contact both directed and non-directed, with external sources of new ideas and practices, than do their more laggardly fellowmen.

**SUMMARY**

The present study was a baseline designed as both an inventory of current farming practices in Tetu Division as well as to produce a scale for rank-ordering farmers according to degree of agricultural progressiveness. The ultimate aim is to use this baseline information to design extension strategies with increased likelihoods of high pay-off, yet without substantially escalating finance and manpower and time inputs over present commitments. To this end, the Tetu Extension Pilot Project is idea-intensive rather than capital intensive, and our focus is more upon experiment with extension approach to the problem of rapid rural development.

A systematic random sample of 354 farmers were interviewed in the baseline using a largely pre-coded interview schedule. Two major areas of inquiry were focussed upon in the analysis of data: (1) factors of production, and (2) factors of communication.

1. **Factor of Production:** We were successful in developing a progressiveness scale based on the relative earliness of adoption of eight modern farm enterprises (capital factors of production). Farmers were rank-ordered on this scale and divided into four basic groups.

   Concerning the land factor, we found positive correlations between farm progressiveness and (1) farm size, and (2) farm refragmentation; the tendency being towards fewer and fewer farmers having larger and larger farms. The principal source of water for home, animal and vegetable use was the river or spring.

   Regarding farm labour, family members are the major source of full and part time farm labour whereas paid employees are the major source of seasonal labour. With respect to the management factor, we found that the larger the farm size the more likely it is to be managed
by the owner himself.

2. Factors of Communication: We found that extension agents are likely to initiate contacts with the more progressive individuals or group of individuals than with the more laggardly. The more progressive farmers are also more likely than less progressive to initiate contacts voluntarily with extension agents. Method demonstrations in crop and animal husbandry, home economics, health, and farm planning, as well as attendance at farmer training centers are more likely to involve more progressive than less progressive farmers. Demonstration plots are more likely to be found on the farms of more progressive than less progressive farmers.

The more progressive farmers are more likely than the less progressive not only to be members of, but also to be office bearers in, such formal local organizations and institutions as KANU, the co-operative society, the local council, Maendeleo ya Wanawake, the school board, the 4K club, and the church group.

More progressive farmers have a higher frequency of mass media exposure than more laggardly farmers to daily newspapers, magazines, radio, television and cinemas. There are more literates at least in the vernacular among more progressive than among less progressive farmers. More progressive farmers are more cosmopolite than more laggardly farmers in that they show a decidedly greater percent for peregrinating about the country than do laggards.

The cumulative positive effect of these communication factors upon the more progressive farmers is to foster in them a spirit of openness to innovations, a willingness to try more productive and commercial ways of agriculture, thereby providing them with increasing opportunities to break out of the bonds of subsistence farming and move toward a cash economy. The cumulative negative effects of these communication factors upon the less progressive farmers is to seal them in traditionalism, to discourage them from trying new methods and techniques, to foster in them a spirit of scepticism and frustration with extension personnel, thereby providing them with sufficient motive to sell up and move to psychologically more hospitable areas elsewhere.

IMPLICATIONS

Our primary concern is in evaluating the present research with a view to seeking out implications for phase II of the overall
Tetu Extension Pilot Project. In this regard, the weight of evidence indicates that one relatively small group of already progressive farmers is benefiting inordinately from the government extension services at the expense of a larger still laggardly mass of farmers. To be sure, this tendency is not necessarily intentional government policy but rather dictated by a production oriented practice which places a special burden upon extension agents to get the most results from their efforts in the shortest period of time. Given such an orientation, the natural line-of-least-resistance tendency is to seek the already converted and encourage them to expand. The upshot, of course, is not only to raise the average income of farmers by raising the incomes of the best farmers, but also to increase the disparity between the more progressive and the laggardly farmers. Now, poverty is a relative condition: an individual is poor only to the extent that others in his environment are rich. If you make the rich richer then the poor become relatively poorer, even though they do not suffer any actual reduction in their existing livelihood. Thus, in the main, a primary objective of the SRDP, raising local incomes, will be defeated if only "average" incomes are raised by raising the incomes of the rural elite.

The main solution to this tendency is simply to alter the current emphasis from target figures of production to target figures of producers. That is, instead of setting production goals by directing extension personnel to double the hybrid maize acreage in their division, regardless of which farmers do the doubling, producer goals should be set directing extension agents to double the number of hybrid producers in their division, regardless of whether this doubles total production of hybrid maize.

Goals, however, are not strategies. Goals are statements of intent; strategies are statements of deeds. Between the intent and the deed, there lies a world of difference. Stating goals is easy: it requires no more than a visionary perception of need. Stating strategies is tough: it requires disciplined creativity and technical competence in the step-by-step planning and implementation of the strategy. The latter is sorely lacking in the SRDP. Yet without creative, believably feasible strategies, there is really nothing "special" about the Special Rural Development Programs.

So far, strategies enunciated in SRDP areas amount to little more than elaborated goals. This comes under several guises.
Also frequent is the "intensive extension effort" guise: proper farm management and planning is unknown in the division now: by 1975, all farm enterprises must be planned and managed properly. The implicit strategy here consists of exhorting extension workers to redouble their efforts.

There is nothing creative and inspiring about exhortations. Furthermore, exhortations imply a threat of something ominous which will befall people if they disobey the exhortation. However, one cannot put all the farmers in jail or fire all extension agents. So, usually the threat implication of exhortations are quite toothless. In any case, both farmers and extension agents have heard the same tired old exhortations over and over again from platforms, lecturers, pulpits, newspapers, and radios. Their motivation value must now be very low.

Useful strategies with high probabilities of significant pay-off require (1) clearly defined goals, (2) detailed step-by-step strategies for attaining those goals; and (3) information about the area and population for which the goals and strategies are intended.

Goals must be clearly defined. Merely stating an intention to increase hybrid maize production is not enough: one needs to clarify for instance, whether the goals aim to increase production output or increase producer output. The former implies a lack of concern for equitable distribution of income in the division. In this event, a relatively simple strategy is implied: merely focus upon encouraging already progressive farmers to increase their scale of production—perhaps even to buy out smaller holding farmers to achieve this end, and, in the process, create employment for the newly disposed farmers. This strategy is relatively painless for the change agent who, by simple arithmetic manipulation, can demonstrate that the "average per capita output" in the Division has increased even though no more than five percent of the farmers in the Division contributed to the increase.

If the goals aim at producer rather than production output, their concern for equitable income distribution through the division

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8. The Swynnertan Plan (1955, p.10) suggests that "... able, energetic or rich Africans would be able to acquire more land from bad or poor farmers, creating a landed, and a landless class. This is a normal step in the evolution of a country".
is demonstrated. Thus, instead of a production target, we switch to a target of increasing the number of producers, and therefore, the number of beneficiaries. This, of course is a task which promises to be, at least initially, difficult, complex and time consuming, particularly with respect to top-management planners. It calls for great ingenuity and persuasive power in initiating new and often reluctant farmers to the notion of adopting innovations. But, in the long run, a producer orientation pays off more than a production orientation if only because it focusses upon the majority rather than a privileged few.

Setting useful producer oriented strategies, however, requires information about the socio-economic background of the producers. We need to know, for instance, what proportion of farmers in the division are growing a particular crop to be able to set a realistic producer target. The same also applies in setting production targets. If this information is not known, as is almost invariably the case through the country, then it must be determined first in the same way that we did in Tetu Division before believably feasible strategies can be planned.

A STRATEGY PROPOSAL FOR TETU DIVISION

In the light of the foregoing, we wish to outline briefly a proposed strategy aimed primarily at educating extension personnel in the techniques of reaching all sections of the community of Tetu Division with maximum efficiencies and minimum expenditure of additional cost, effort and time. We envisage a strategy divided into several stages and with the Wambugu Farmers Training Center as its focal point.

Stage 1: Consistent with our belief that extension personnel are largely not trained how to teach what content to whom with what effect, the first stage of our treatment sets out to ameliorate this condition. In stage 1, our focus will be entirely upon rewriting the existing curriculum at Wambugu F.T.C. so as to produce four separate curricula corresponding to the four levels of farmers delineated in the present study. In conjunction with this exercise, the current teachers at the F.T.C. will undergo training under the aegis of the Institute for Development Studies (IDS), University of Nairobi, in which attention will be given to both content and teaching style and approach.

Stage 2: The newly trained teachers and newly developed curricula will be given their first workout on an audience consisting of the field level extension agents -- namely, the (junior) agricultural assistants. The intention is to prepare this level of worker in the same teaching content, techniques and approaches which the F.T.C. teachers have already received.
whilst at the same time given the F.T.C. teachers practice and also pretesting the efficacy of the four stratified curricula. Thus, the University's active training program is limited mainly to stage one, whereafter the F.T.C. should move towards independent self sufficiency under the decreasing supervision of the IDS personnel.

Stage 3: Farmers are selected in such a way that they are grouped according to one of the four levels of progressiveness delineated in the present study. Each group is invited separately and the appropriate curriculum is administered to them. For instance, a group of laggards may be invited for a weeks course in which the ABC of farming is taught. Following on this newly trained group is practiced by the newly trained field level workers. That is to say, the burden of selecting farmers for visits is now removed from the field worker who instead is given a list of the new first level graduates to follow up. These graduates may return later to the F.T.C. where they are now given the "standard 2" curriculum, then sent back to their farms for practicals, then returned later for "standard 3", and so on until they qualify as fully fledged business minded farmers with farms carefully planned and managed. This gradual uplift of farmers is based on a farmer selection that is objectively and systematically planned at the level of locational or divisional administration, rather than on the haphazard, hit-or-miss non-system currently employed by individual extension agents in the field.

Stage 4: Finally, the efficacy of these treatments needs to be evaluated. After all is said and done, the proof of the pudding is in the eating. Those farmers who have undergone the treatments proposed must necessarily show a remarkable, overt difference, as opposed to a barely significant, covert statistical difference, over those farmers who did not undergo the treatments.

We must, in conclusion, emphasize as strongly as possible the fact that the Tetu Extension Project is a pilot project and as such, must be regarded as exploratory rather than confirmatory. Exploratory studies are designed to root out problems, test and retest procedures and hypotheses, and they depend to a large extent upon serendipity for guidance. However, every exploratory study must be followed by a confirmatory study in which the rules of scientific enquiry are more rigorously applied. To this end, two other areas, Vihiga Division in Kakamega District, and Iriyani Division in Kisii District have already entered upon the baseline stage of a program similar to the Tetu Extension Pilot Project.
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THE PROBLEMS OF AMALGAMATING COOPERATIVE SOCIETIES

THE CASE OF N. TETU

Edward Karanja
Institute for Development Studies
University of Nairobi

INTRODUCTION:

The problems facing the cooperative movement in the country are of many phases, which require more understanding and attention in trying to solve them. Many studies so far have dealt with general cooperative management problems and challenges. However, the present study tries to highlight another important problem in the movement which in the past studies has received very little attention. The problem itself is of trying to amalgamate various existing mono-purpose cooperative societies into viable and larger economic institutions, which is the trend in the country at present. The general belief in such cases is that economic factors must be given priority and that they should determine the shape that such amalgamation should take.

This paper sets out to show that there are other non-economic factors which cooperative society members consider to be of equal importance to the economic ones in determining the set up and the amalgamation of their cooperative societies. The survey was conducted in November and December 1970, and I am grateful to Dr. Ascroft who advised on the drawing up of the questionnaire, Dr. Hyden and Dr. Chambers who helped with suggestions and particularly during the analysis of the data.

ORGANIZATIONAL PROBLEMS:

The cooperative movement in Kenya is now 25 years old as an officially recognized movement, and has had a tremendous growth since independence. The Kenya Government recognizes the important role that the movement has played in the past and expects it to play a much wider role in the future. This has already been underlined in the country's current Development plan which states that, "cooperatives have an extremely important role to play, especially in the small-scale farming areas, and the Government intends to
intensify its efforts to encourage the healthy development of the cooperative movement.\textsuperscript{1} However, the movement has had its share of difficulties such as poor management which causes general inefficiency, favouritism to committee membership, misappropriation and misapplication of funds and lack of business experience on the part of the managing committees.

It was the recognition of these shortcomings in the movement that prompted the Government to enact the Cooperative Societies Act of 1966 whose main intention is to try to curb such malpractices. The Government has pledged to strengthen and intensify its machinery for guiding, supervising and controlling the movement through the enforcement of this Act. Thus, "the overriding concern of the Government during the next three years is that cooperatives should be disciplined and made to operate more efficiently in accordance with sound business principles."\textsuperscript{2}

At the same time, it is important to remember that we cannot discuss the successes and failures of the cooperative societies in a vacuum without considering their environmental setting and conditions that they have to work within. Many aspects of the environmental constraints and challenges facing the cooperative movement in East Africa have already been widely discussed in recent works, particularly Cooperatives and Rural Development in East Africa, edited by C.G. Widstrand (Africana Publishing Corporation, 101 Fifth Avenue, New York -- 1970), and Goran Hyden's, African Cooperatives (forthcoming).

However, for the purpose of this study it is necessary to highlight some of these problems which are of specific importance and relevance here. The success or failure of any organization depends for the most part on its ability to utilize its resources in meeting the challenges and constraints presented to it by its environment. This of course assumes that to begin with, such an organization has at the outset spelled out clearly its goals and objectives. If we view the cooperative societies as such, we find that in most cases they lack clear-cut goals and objectives and


consequently are rendered unable to manipulate the environment in the direction suitable for meeting their declared objectives.  
In such cases, cooperative societies become incapacitated organizations and thereby act as "the blind groping about in the dark."  

Sometimes where the goals and objectives are well defined, there has been a lack of whole-hearted acceptance of such goals by the members of the cooperative societies. This problem becomes a critical one since the end result is that it weakens the cooperative societies and threatens their existence in the society. This problem is no doubt prominent in many primary societies in the country and raises the question of how increased commitment and involvement on the part of the members could be achieved. Apathy on the part of the members is very evident in many primary societies and the managing committees are thereby given the whole responsibility of running such societies as they see fit. For any organization to exist and function successfully in a society, it's organizational goals must have support from those it is serving and must also adapt to the environment. The cooperatives are not exceptions to this rule, and must seek support from the members by providing the essential services to them and incorporating their requirements in their current goals. So far this has been a failure on the part of the managing committees who must make a conscious effort to make their organizations both efficient and effective. While writing on organizational goals and the environment, James D. Thompson and William J. McEwen have said that "the difference between effective and ineffective organizations may well lie in the initiative exercised by those in the organization who are responsible for goalsetting."  

While carrying out informal interviews in Tetu Division of Nyeri District on the question of who should make decisions in the society affairs, members responded by saying that it was the managing committees for they knew better what was good for the society than the members did. In many cases, the committee members are not elected to the managing committees because of their knowledge in business management or dedication in the promotion of the cooperative movement, but instead because of their social standing in the community, for  

example, those in influential positions, traders, Chiefs and teachers. Whether they have cooperative interests at heart does not even seem to matter much. In other words, members of the managing committees of the rural cooperatives are predominantly the "rural bourgeoisie" usually in powerful positions which cooperative members equate with good cooperative leadership.

Another danger of this system of recruitment is that the committee members are elected to those positions on "political constituencies." Once a member is voted in, the practice has been that he looks after the interests of his "constituency," and not the whole society. This point was well demonstrated in our case study of two cooperative societies in Kirinyaga district (and is common in many other societies) where a person who had indulged in mismanagement of the affairs of the society was re-elected to the management committee.

In places where cooperative societies cover a very wide geographical area and thereby create an opportunity for farmers from many locations or divisions to belong to one or several cooperative societies, conflicts over which location or division should provide the Chairman always arise. This point was well illustrated by the recent Meru District Cooperative Union break up because of claims that some areas were enjoying more job allocations than others. This case also shows the significance of rotating power in various regions "as a way of maintaining an organizational equilibrium." Sometimes society members complain that a Chairman or other leaders have been imposed on them without themselves making the decision or participating in electing them. Evidence from District Cooperative Unions and primary cooperative societies suggests that leadership conflicts and tensions are imminent features in the movement, and no remedial or corrective formula has been instituted up to the present time. This practice has inevitably affected working relationships of the managing committees and the cooperative society employees. In fact many cooperative employees have decided to leave the movement because of such conflicts and also because career prospects are not promising.

The end result inescapably has culminated in the movement becoming inefficient and handicapped in many ways. The immediate question that should be answered within the movement has to do with efficiency. Questions such as: When is a cooperative society efficient? And what criteria are most appropriate in measuring such efficiency and so on become relevant here. The task of evaluating the cooperatives is a multi-faceted one, and various interested students of the movement have attributed success and failure in the movement by looking at certain aspects, and not others. Raymond Apthorpe for instance has observed that to try to evaluate a complex set like cooperation is like trying to evaluate the church. The contemporary experience is that to achieve management efficiency in an organization, pressure from below becomes an important catalyst. Looking at the contemporary cooperative societies in that light then, management efficiency would not be achieved easily. In the first place, the cooperative membership as discussed already is not wholeheartedly committed to the movement, and in most cases cooperative interest is dying or is dead, thereby rendering creation of pressure from below unsuccessful.

Carl Gosta Widstrand, in his recent edited book on cooperatives in East Africa, touching on this most important aspect has observed that:

"It is not until the members themselves feel a sense of involvement and ...... have some control over the cooperative (through education, involvement in productive activities, etc.), that efficiency can be guaranteed by pressure from below, by active participation by the membership".

The subtle problem here is how to maximise the requisite active participation by the members and ultimately enable the movement to wield such pressure. One of the problems in this respect is that it is not unusual to have one farmer belonging to more than four different cooperative societies at the same time. In such circumstances, it would be a big burden for such a farmer to participate actively in every one of such single purpose cooperative societies. Such is the case that many farmers are confronting in the cooperative movement. Each such single purpose cooperative too operates under its own managing committee, employs its

8. Ibid. p. 237.
staff and locally enjoys autonomy from any other cooperative society except from the District Cooperative Union, which functions as the umbrella of the primary societies in the District.

In an attempt to create the situation in which such close involvement of the members in their society affairs could be developed, various recommendations on how to set up such farmers' marketing organizations have been made.

David H. Pickard, writing on the factors affecting success and failure in Farmers' Cooperative Associations argues that "cooperation in agriculture must grow from the ground floor upwards and not be built from the penthouse downwards," Perhaps the main objective of such farmers' organizational philosophy is to try to save the farmer from getting lost in big and complex cooperative institutions at this early stage of trying to make him change, and adapt to new methods of farming. He emphasizes this idea more by saying that:

"the farmer responds to people he knows rather than to distant organizations or to abstract concepts. All this confirms ...the belief that the primary unit in agriculture must be small, local, utilising known and respected local leadership, so that the farmer may identify himself with this organization and think of it instinctively as "us" and not as "them"."

The spirit called for by the above quotation on the part of the cooperative members is very much lacking in primary societies in the country and was confirmed in our cooperative case study, where members looked at their society as an organization expected to distribute benefits to them even if they did not contribute their time and concern to its proper running.

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10. Ibid.
To try to establish effective cooperative organizations and effective participation by the members, while bearing in mind the necessary conditions discussed, it is important to determine the optimal size of a cooperative society. In this connection, there are two types of cooperative societies that could be set up in a given area. That is, multi-purpose cooperative society or single purpose society. One could have certain advantages over the other as will be discussed shortly. However, the trend in Kenya as stated in the recent sessional paper points toward the multi-purpose type of cooperative society. The paper states that:

"At the village level, the policy is one of developing viable primaries on a multi-commodity, multi-purpose pattern so that the one village society may, in the long run, meet all the economic needs of its members." 12

One of the advantages of a multi-purpose cooperative society if appropriately located is that a farmer belongs to only one cooperative society where he/she takes the agricultural produce for marketing. Such a cooperative society would attract the majority of farmers and especially where they market more than one commodity through the cooperative societies. The location of any cooperative society is of great importance to farmers and needs to be close enough since many farmers in the rural areas have to walk long distances to attend society meetings, to deliver their produce and also to get their farming supplies such as cattle and pig feeds, fertilisers and so on. The geographic area covered by the cooperative society is of importance too, for as we saw earlier on, society members often complain that leaders, who they did not know before, have been imposed on them to run their societies. It can be argued then that if the geographic unit of a cooperative society is small enough, the members would be in a position to elect as their leaders people they trusted and knew well. The significance of this fact is that for a long time now effective leadership has been one of the scarcest resources in the movement, and is critical in some places which must be cultivated if successful cooperative societies are to thrive in the country.

Also the spirit of "belonging" on the part of the members would be cultivated easily and close the existing gap between the members and the leaders. In this respect, the understanding of the psychology of the rural farmers (an aspect that has been neglected

12. Sessional paper. op. cit. p. 3.
so far) would be of vital importance. In informal interviews, rural farmers who are members of fairly large cooperatives always indicate their distrust, fear, or both about being told to contribute money either for investing in a building or in some sort of machinery far off and which is not close to them. This practice by the cooperative leaders is very evident today, and certainly has caused considerable confusion and anxiety to the members themselves. In some cases, the major source of the farmers' suspicions is this fact that leaders are from far off, and could not be trusted with such investment money. It has been argued that in having cooperative societies of reasonable size, such attitudes could be mitigated considerably. In writing very closely to this notion, J.A.E. Morley has pointed out that:

"Small cooperatives account for a more intimate relationship between the members and the cooperative than is possible in large organizations, the fruits of which are a greater willingness to accept discipline, since this is self-imposed, and a greater willingness to subscribe capital, since the advantages of doing so are more direct and immediately apparent."

Let us now turn to this important aspect of the appropriate cooperative size that should be established in rural areas with the aim of cultivating that intimate relationship between the members and the cooperative societies themselves. The set up of the cooperative societies in Kenya has been on either multi-purpose cooperatives or single purpose cooperatives. However, there has developed some emphasis in the direction of recommending one kind in some areas of the country, and the other in others, depending on the circumstances and the environmental conditions under which they are to function.

The new Cooperative Societies Act gives the Commissioner for cooperatives considerable powers to enable him to guide the cooperative movement toward a new direction. One of such powers is that he can insist that small mono-crop or single purpose societies amalgamate into sufficiently viable multi-purpose units, perhaps affiliated to a cooperative union. By so doing he would ensure that each society is sufficiently large to be able to justify employing the staff necessary to perform its basic functions effectively, while certain services,
such as the provision of transport or bulk buying and selling can be performed by the cooperative union.\footnote{14} These measures were promulgated because of the dangerous situation the movement had reached during the post independence period when many cooperative societies were formed for the most part by politicians in their constituencies as part of the harambee spirit efforts. In most cases no planning was done for them and consequently they had to face many organizational difficulties later.

At the moment the Government is strongly encouraging strengthening of the present cooperative societies into more viable organizations. Goran Hyden in his recent work has pointed out that, "In Kenya, the effort is to consolidate already existing marketing cooperatives and turn them into multi-purpose institutions, offering a wider range of services to the members."\footnote{15} While this move has received support within the movement, single purpose cooperatives in the country have gained support in some quarters within the movement as well. However, the latter are considered as not conducive to bringing the farmers together to the same extent as the former, which G. Solomon also argues that, "if properly organized, will in no way weaken the efficiency of each individual sector of the cooperative, (but) will through its enlarged activity, increase its economic power."\footnote{16}

Having now discussed quite considerably the needs of small cooperative societies either of a multi-purpose or single purpose pattern, it is time to try to weigh the advantages and the disadvantages of either one since this will be the main focus of the cooperative case study that follows.

The notion of amalgamating cooperative societies on either line referred to above has been a question of frequent discussion in the contemporary scene of the cooperative movement. Partly, the

\footnote{15} Goran Hyden, "Cooperatives and their socio-political environment" in C.G. Widstrand op. cit. p. 62.
\footnote{16} G. Solomon, "Land reform and the promotion of small scale industries and services through rural multi-purpose cooperatives" Land Reform, Land Settlement and Cooperatives, FAO No. 1 1970. p. 89.
reason for this effort of trying to find the most appropriate pattern to be followed, is because of the present demands of consolidating the existing societies and thereby directing their orientation in a more forward-looking direction than has been the case in the past. In the whole process, the following points can be put forward in favour of multi-purpose cooperative societies.

a. As more than one function is delegated to a cooperative society the relationship between farmer and society reaches a higher level of integration and forms therefore a stronger bond.
b. The farmer has to raise less capital for share contribution. Instead of contributing to several societies he has to buy only one share in a multi-purpose society.
c. The cooperative potentials with regard to leadership, enthusiasm etc., in a village are not split but concentrated in one society.
d. There is usually a reduction in cost per unit produced or turned over, as administrative costs will be reduced by being spread over several activities.
e. Often, only the formation of multi-purpose societies can increase the viability of cooperative activities which otherwise could not be carried out. The business volume of one activity may not be large enough to form an economic basis for the operation of a society.17

The disadvantages of multi-purpose societies (single purpose advantages) can be stated as follows:

a. The burden put on the management is considerably heavier than in the single-purpose society, and with increasing size there is the danger that proper control and supervision of the society may be lost.

b. An all-round manager for this type of job is usually hard to find.

c. The dispersal of effort often leads to the neglect of certain activities, especially extension work.

d. The exact costs of certain operations are hard to assess owing to the difficulties of correct allocation of overhead expenses.

e. Conflicting interests might arise within the membership.

In amalgamating various kinds of cooperative societies into any of the two categories already referred to, it is terribly important that the advantages and disadvantages of each category are discussed thoroughly and explained to the cooperative members.

The experience of the movement so far has been that the leaders only sell the ideas of the category that they have already decided among themselves without first seeking the opinions of their clientele. In effect they only request the members at general meetings to approve the committee's preference. The economic aspects certainly should be considered as well as the sociological aspects, for irrational motives such as one area having reached a certain level of development, or traditional hostility between two neighbouring or distant villages or locations, could be issues of considerable constraint towards amalgamating two or more cooperative societies belonging to such villages or locations.

To examine the nature and intensity of such constraints, the following is a case study of cooperative societies in Tetu Division, Nyeri District where amalgamation of 14 cooperative societies was recommended and accepted by the primary society leaders and the members in principle, but not in fact.

**ATTITUDES OF COOPERATIVE MEMBERS IN TETU TOWARDS THE PROPOSED AMALGAMATION: CASE STUDY.**

Tetu Division is one of the six divisions in Nyeri District, located just on the southern part of the saddle between Mount Kenya and the Aberdare. The altitude is between 5,000 and 7,000 feet above sea level and has an area of 85 square miles. On the western side of the division is the Aberdare range which rises to well over 13,000 feet above sea level, whereas the north lies between the Aberdare and Nyeri Township. On the eastern side is the Sagana River and Gura River on the southern side.
The Division covers four administrative locations and has a total population of 92,213 people.

Table 1. POPULATION SIZE AND LAND AREA BY LOCATIONS IN N. TETU

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>POPULATION</th>
<th>AREA (sq. km.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aguthi</td>
<td>28,754</td>
<td>82</td>
</tr>
<tr>
<td>Thigingi</td>
<td>26,070</td>
<td>67</td>
</tr>
<tr>
<td>Muhoya</td>
<td>16,417</td>
<td>44</td>
</tr>
<tr>
<td>Tetu</td>
<td>18,932</td>
<td>49</td>
</tr>
<tr>
<td>TOTAL</td>
<td>92,213</td>
<td>242</td>
</tr>
</tbody>
</table>


Tetu Division serves as the transport route from Nairobi to the North West. However, the road and railway is just east of the Division and consequently any industrialisation would be external to the Division, possibly at Kiganjo or Karatina. Due to different ecological zones, Tetu is a mixed farming area, and dairy production is one of the most important monetary activities in the division. The completion of land consolidation and registration during the mid 50's has made extensive utilization of land possible and in fact has facilitated the extension of cash crops. Also of much importance in rural development is that in addition to favourable ecological conditions the inhabitants in the area have all along responded to innovative agricultural methods of farming very readily. The four dairy societies in Tetu were among the early ones to be started in the country in the early 40's.

At present there are 14 agricultural marketing cooperatives covering every part of the division. These cooperative societies have been functioning at different levels in the four locations and within the division as well. For example, all coffee farmers in the division belong to the only coffee cooperative society for the whole division. Muhoya's location has one dairy cooperative society, one pig, and shares a pyrethrum society with Tetu location. Tetu location has two dairy cooperatives and one for pigs. Thigingi location has two pyrethrum societies, one pig and one dairy, sharing a second one of each with Aguthi location. Finally, Aguthi location has one pig cooperative society. The state of the cooperatives in the division then is that each location has certain specific cooperative societies
operating within its geographical boundaries, whereas it shares another kind of a cooperative society with the neighbouring location with the exception of the coffee cooperative society which functions as a single purpose cooperative for the whole division. All these cooperatives in the division are (according to Cooperatives Act) members of the Nyeri District Cooperative Union.

Table 2. TYPES OF COOPERATIVE SOCIETIES, MEMBERSHIP AND TURNOVER IN K£ AT THE END OF 1968

<table>
<thead>
<tr>
<th>Type of Coop.</th>
<th>Number</th>
<th>Membership</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy</td>
<td>5</td>
<td>2,239</td>
<td>68,789</td>
</tr>
<tr>
<td>Pigs</td>
<td>5</td>
<td>3,340</td>
<td>85,938</td>
</tr>
<tr>
<td>Pyrethrum</td>
<td>3</td>
<td>2,066</td>
<td>25,564</td>
</tr>
<tr>
<td>Coffee</td>
<td>1</td>
<td>5,652</td>
<td>37,412</td>
</tr>
<tr>
<td>TOTAL</td>
<td>14</td>
<td>15,297</td>
<td>317,703</td>
</tr>
</tbody>
</table>

The disintegrative nature of the cooperatives in Tetu has forced many farmers in the area to belong to more than one society. A good number belong to as many as four cooperatives simultaneously. Each cooperative society has its managing committee of 9 people (according to the coop law) elected by the members, who draw a sitting allowance of Ksh. 10 each sitting. The recommended number of meetings is once every 3 months or once every month, but in most cases some committees meet more often than that. Altogether there are 126 managing committee members. Each dairy society runs its own vehicle for milk delivery to Nyeri township. Employees of cooperatives such as these are usually of two categories: the first category is that of graded staff who are employed by the District Cooperative Unions and seconded to the primary societies, the second category is that of the ungraded staff employed by individual primary societies. Tetu Coffee Growers Cooperative Society which is the only single purpose cooperative operates its own lorries for transporting coffee, while pig societies rent Union vehicles for transporting pigs to the Railway station at Kiganjo.

In considering ways and means of reducing the number of these societies, it was decided by the Nyeri District Cooperative Union that this could be achieved by amalgamating the existing cooperatives along the lines of single purpose cooperative societies division wide and thereby reduce the total number to only 4 societies. The
amalgamation issue however was not reached in a vacuum, or without a justified rationale. This decision was based on an economic feasibility study that indicated that in implementing the recommendations, an effort will have been made to reduce overhead costs and ensure maximum returns to the farmers.

Thus in amalgamating all the five dairy societies to form one divisional single purpose society, transportation would be centralized, and proper control from one point would eliminate misuse of vehicles. The pig societies if merged would ensure one more viable cooperative society, and so would the pyrethrum cooperatives. The whole idea inescapably was to set them on similar lines with the coffee in the division. The predominant rationale in the whole process was made on economic considerations and nothing else. So far, the views or opinions of the cooperative members were not known nor were they sought with regard to the proposed amalgamation of their cooperative societies. Maybe this should have been an important concern if we view the members as the backbone of the movement who should be involved in decision-making in the affairs affecting their organizations. In fact without such members there would be no such thing as cooperatives, nor would there be the managing committees to direct the affairs of such institutions on behalf of the members who elected them. In such circumstances, cooperative members have a right to be consulted. The major aim of this study therefore is to try to examine the opinions or views of the members of those cooperative societies in Tetu Division regarding the proposed amalgamation on a single purpose pattern.

An attempt will be made to try to examine the extent to which the members' views were sought and the reasons that led some committee members to favour one form of amalgamation and not the other. Cooperative members, like those in harambee groups must be given much more responsibility and must be made to feel that they have something at stake. This seems like a very important research area that has not received the same attention as other aspects of the movement. Goran Hyden while looking at both of these rural institutions has observed that "self-help groups established to produce public amenities easily gain support in the local communities, while marketing cooperatives do not." If they are to be as successful as these self-help groups, they must cultivate a new outlook. In the proposed

amalgamation, few assumptions could be made with regard to the responses of the society members. The first assumption is that the majority of the members would prefer some type of amalgamation which could lessen the burden laid on farmers by belonging to several different cooperative societies. The second assumption is that the more prosperous and well to do cooperative societies, with clear cut goals and objectives for the future would not favour a merger with the poor ones which lacked anything to show as an example of success in the past. In other words, the past history of the societies and the area where they were located had to play an important role in amalgamation. In fact, there are many assumptions that one could make but these seem to be the most relevant, and had to influence the decision of each in determining whether to amalgamate and with who on single purpose lines, that is, outside the location as recommended or whether to amalgamate along multi-purpose lines within the location.

The sample size was 332 respondents composed of 242 males and 90 women. We used a random sampling method through the land registration rolls by picking every thirtieth name in the land register. Of the total sample, all except 78 of the respondents were current active cooperative members. Some of these respondents ceased to be cooperators either because they discontinued producing anything to be marketed through the societies or because their cows were dry. Some of course have never been cooperative members.

Favourability to amalgamation

The first set of questions asked was aimed at finding out from the cooperative members themselves whether the existing number of cooperatives in their division presented inconveniences to their farming activities in the sense that they had to belong to more than one, which meant attending so many different meetings, walking long distances to where such meetings were to be held, and having to contribute for so many shares. The objective was to weigh the members' opinions as to whether they favoured or disfavoured amalgamation of their societies regardless of the specific kind. The responses were analysed according to the four locations in the division, and also according to the progressiveness of

19. In the whole analysis these abbreviations will stand for the four locations: THIG=THIGINGI, AGUT=AGUTHI, TETU=TETU, MUH0=MUH0YA. Progressive farmers are those who adopt new agricultural ideas such as cash crops, grade cows, and similar farming innovations earlier than these fellow farmers. Therefore, the most progressive farmers (footnote 19 cont.)
The farmers interviewed.

The farmers' attitudes towards amalgamation of the cooperatives societies was highly favourable (See Table 3). Almost 9 out of 10 farmers in Tetu Division favour amalgamation. On the progressiveness of the farmers more of the most progressive farmers favoured amalgamation than low farmers. The explanation for this is that the most progressive farmers were the ones who really experienced the inconveniences of having to belong to many cooperative societies and other marketing organizations like the KTDA, since they had various agricultural commodities to channel through the respective cooperatives. Such a progressive farmer in Tetu for example is very likely to have coffee, grade cattle, pigs, pyrethrum, tea and macadamia trees. So a reduced number of cooperative societies would allow them more time to dedicate to other activities. The other reason is an economic one. The bargaining power of small and weak cooperative societies is not strong, especially when negotiating with the District Cooperative Unions and other marketing organizations, and also increased payments could accrue from reduced costs. Perhaps another important reason is that most of the progressive farmers in Tetu and in the whole country are the chairman and committee members of the cooperative societies, and therefore amalgamation would in effect strengthen and elevate the status of the societies, and their leadership roles would be enhanced too, and gain them higher social status in the community. The low farmers would care less since they don't have much at stake and as many as 20% even did not express their opinion either way. Some of the farmers in this category were not cooperative members and did not know of the existence of the 14 cooperatives in the area.

On the sex distribution 88% of the men and 82% of the women favoured amalgamation. The great interest towards amalgamation by both sexes is an indication that women are equally active in society affairs as men. In fact they shoulder a big burden of having to deliver their produce long distances on their backs. Education and literacy differences among the interviewees seems to have had no great significance in deciding either way. Also there was not a remarkable difference in responses between respondents from small family (household size of up to 8), and large family (household size of beyond 9).

(footnote 19 cont.)
19. are the First Adopters of innovations, followed by the majority of adopters (upper middle and lower middle), and finally the laggards who have not adopted anything yet.
20. Ibid. p. 75
### Table 1: Location and Progressiveness by Type of Amalgamation Preferred

<table>
<thead>
<tr>
<th>ATTITUDES (LOCATION)</th>
<th>Thig</th>
<th>Agut</th>
<th>Tetu</th>
<th>Nuhu</th>
<th>Most Pros.</th>
<th>Upper</th>
<th>Lower</th>
<th>Laggards</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favourites</td>
<td>90%</td>
<td>89%</td>
<td>87%</td>
<td>81%</td>
<td>9%</td>
<td>86%</td>
<td>88%</td>
<td>77%</td>
<td>86%</td>
</tr>
<tr>
<td>Disfavourites</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>16</td>
<td>3</td>
<td>11</td>
<td>8</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>No opinion</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>BASE</td>
<td>113</td>
<td>106</td>
<td>76</td>
<td>37</td>
<td>88</td>
<td>91</td>
<td>93</td>
<td>60</td>
<td>332</td>
</tr>
</tbody>
</table>

### Table 2: What Type of Amalgamation Do You Prefer? Single purpose Divisional or Multi-purpose Local Co-operatives?

<table>
<thead>
<tr>
<th>Amalgamation Type</th>
<th>LOCATION</th>
<th>Thig</th>
<th>Agut</th>
<th>Tetu</th>
<th>Nuhu</th>
<th>Most Pros.</th>
<th>Upper</th>
<th>Lower</th>
<th>Laggards</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single purpose</td>
<td></td>
<td>50%</td>
<td>69%</td>
<td>53%</td>
<td>27%</td>
<td>52%</td>
<td>55%</td>
<td>59%</td>
<td>47%</td>
<td>5-4%</td>
</tr>
<tr>
<td>Multi-purpose</td>
<td></td>
<td>37%</td>
<td>21%</td>
<td>41%</td>
<td>65%</td>
<td>39%</td>
<td>36%</td>
<td>36%</td>
<td>31%</td>
<td>36%</td>
</tr>
<tr>
<td>No opinion</td>
<td></td>
<td>13%</td>
<td>10%</td>
<td>6%</td>
<td>8%</td>
<td>9%</td>
<td>9%</td>
<td>5%</td>
<td>22%</td>
<td>10%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>BASE</td>
<td></td>
<td>113</td>
<td>106</td>
<td>76</td>
<td>37</td>
<td>88</td>
<td>91</td>
<td>93</td>
<td>60</td>
<td>332</td>
</tr>
</tbody>
</table>
Type of amalgamation (See Table 4)

The notion of having either single purpose divisional cooperatives or multi-purpose locational cooperatives had been a subject for discussion in the area at the top leadership levels, and only to a very limited extent among the membership. It seemed important then to check the kind of cooperative amalgamation that the members felt could give them better services. The nature of both kinds of cooperatives referred to above were mentioned and explained to the respondents.

This question seems to be crucial in the future policies of these cooperatives and portrays a distinct polarization of the responses across locational boundaries. The respondents from three neighbouring locations Thigingi, Aguthi, and Tetu predominantly chose single purpose divisional cooperatives, while those in Muhoya's location strongly favoured multi-purpose locational cooperatives. There could be many explanations about these responses but first let us focus on the ecological factors in the four locations.

More than half of Muhoya's location which borders the Aberdares forest is situated within the high bracken zone where annual rainfall is plentiful and allows for good yields from cash crops such as tea, pyrethrum, wheat, also dairy and sheep which are high income earners do very well. Subsistence crops such as vegetables and potatoes do well. A small part of Tetu and Thigingi locations are also in this fertile zone, while the rest, plus more than half of Aguthi location is in the kikuyu grass zone where coffee, dairy and sheep are the income earners, and potatoes and vegetables are the subsistence food crops. Finally, a good part of Aguthi location is in the star grass zone where only coffee and dairy are the main agricultural cash crops and yields of food crops are poor. The rainfall in the latter three locations is less than 40 inches annually which is rather lower than in Muhoya's location, and could have been a constraint for the agricultural development.

Owing to the favourable ecological zone, plus the capacity and readiness of people in Muhoya's location to absorb any innovative agricultural methods, particularly grade dairy cattle, the location has always forged ahead in all spheres of agricultural development. The location historically has been the pioneer of cooperative societies, particularly dairy Cooperatives since the early 40's. The late Senior Chief Muhoya was responsible for cultivating that capacity for rapid change by the farmers in the area.
today one hardly finds non-grade cattle in the area, whereas in Aguthi, such willingness to change has not penetrated to any appreciable degree. These factors have boosted farming activities in Muhoya's location and consequently farmers get steady incomes unlike those in other locations, particularly Aguthi.

Another very important reason why Muhoya's farmers favoured multi-purpose cooperative society in their location could be that their cooperatives are better organized, and have clear cut development goals and objectives, a notion that other societies in the area are lacking. To illustrate this point further, the dairy cooperative society in the area recently constructed a big modern building to house society offices, dairy, board-room, stores and some three shops for renting. Beside the building, a petrol station has been installed and the society has already successfully attracted all motorists in the area to get their petrol supplies from there. With one exception other dairy societies in the area don't even have offices.

Leadership trust in the cooperative movement is very important and where leaders have been trusted and are faithful, the members try to keep them as long as possible and eventually such leaders use that trust to get higher offices in the nation. In this respect, farmers in Muhoya's location as it came out in informal interviews were reluctant to risk the chance of losing their present leaders. Also, it was pointed out that the achievement of their present development was due to the cooperation within the location, and to continue operating in that spirit, what they needed was self-determination and local autonomy in their location. To illustrate this point, the recent appearance on the national television of some harambee groups from the area while constructing a harambee cattle dip became a key reference point as to what they meant by locational unity in all their development activities. Another advantage that some societies in the location (dairy and pigs) have is that they are closer to Nyeri township than the other societies and it is anticipated that a tarmac road will reach the society headquarters soon.

This behaviour by cooperatives displayed by the responses of the members is an important phenomenon in the sense that despite the fact that their common objective and spirit should be to join together and fight the middleman it seems that they have developed some parochial attitudes.
In other words, one of the reasons for the proposed amalgamation was to strengthen the movement in the division, but to some cooperative societies there was an additional issue of who should amalgamate with whom. The rich ones don't want to associate with the poor ones, but the poor ones as is indicated in this case won't hesitate amalgamating with the former. Aguthi cooperatives which are relatively poor, strongly supported the single purpose divisional cooperatives, which could have provided an opportunity to join hands with those in Muhoya's location. This phenomenon is supported by Tetu cooperatives (41%) which came closer to Muhoya's position.

The least progressive farmers favoured single purpose divisional cooperatives more than multi-purpose locational cooperatives. The reason could be that there was a realization of a prospective gain from increased membership on the divisional level. The majority of such farmers probably are in both Aguthi and Thigingi locations and demonstrate solidarity in this category of farmers in an attempt to share the cooperative benefits with the wealthy ones. Again those who did not express an opinion in preference of one type over the other (22%) were the least progressive farmers.

On the sex breakdown, 57% of the men and 47% of the women preferred single purpose divisional cooperatives. The difference does not seem to be very significant, but men seem to prefer enlarged societies outside their locational boundaries. Today this is important and especially on the part of the leaders who might want high offices in the District or in the country, since large cooperatives today provide an important platform for any kind of campaign outside one's locational boundaries. Also it could well be that men generally are better informed from the outside world than women, an element that could have influenced their desire for society amalgamation on a wider geographical level.

However 42% of the women and 33% of the men preferred multi-purpose locational cooperatives. The major explanation for this difference is that in many areas of the country more women than men participate in almost all the activities of the cooperative societies. At general meetings and any other special meetings, most often they are the main attendants. It becomes their burden to participate in any kind of communal work called for by the societies. Their husbands usually are away from home and they are left in charge and responsible for the welfare of the entire family.
At informal interviews they pointed out that with locational cooperatives, the long journeys and long walking hours to such cooperative activities could be cut short. Also that the chances of their attending cooperative meetings regularly will be increased too. Because of these circumstances, they argued, cooperatives should be established at suitable geographical points. No significant differences between people of different levels of education and literacy were found in terms of their opinion towards type of amalgamation. (Table 5). This phenomenon can be attributed to the numerous appeals in the country for closer cooperation and unity in the development efforts in the country. Radio and newspapers such as Taifaleo which is widely read in the rural areas have been disseminating information of the same content. The differences in attitudes between the small family and the large family were not very significant.

By amalgamating the existing 13 cooperative societies (pigs, dairy and pyrethrum) into single purpose divisional cooperatives, the Nyeri District Cooperative Union according to the economic feasibility study that had been carried out, planned to have only 3 managing committees instead of the already existing 13 managing committees. This was a measure aimed at reducing the committee sitting allowance considerably which was already costing the farmers substantial amounts of money. The implementation of that proposal it was argued could have contributed to saving the societies money which could be diverted towards increasing farmers' payments. This however would have depended on the willingness of such societies to disband the old managing committees. Assuming that the amalgamation proposal was to materialize, this question on whether to form only one new committee or let the old ones continue functioning was posed to the society members. (Table 6).

Muhoya's differs markedly from the rest. It seems the societies in Muhoya's location are not as much opposed to continuing with the old committees like others in the division. As mentioned earlier on, the cooperative societies there have achieved more progress compared to the rest, and therefore the members seemed somewhat uncertain of whether to remove the old committees or not. The case in Aguthi is the opposite, for there is nothing that the society members can point at to indicate the committee's achievement or success in the past, something that compels them to seek new leadership on the divisional level. Thigingi and Tetu are not far from this situation either.
### Table 6: Location and Progressiveness by Disposition of Committees

<table>
<thead>
<tr>
<th>Location</th>
<th>Single Purpose</th>
<th>Multi-Purpose</th>
<th>No Opinion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>53%</td>
<td>47%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Medium</td>
<td>53%</td>
<td>47%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Small</td>
<td>54%</td>
<td>46%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Education</td>
<td>More Up to 4 yrs.</td>
<td>More</td>
<td>Less</td>
<td>Total</td>
</tr>
<tr>
<td>Large</td>
<td>41</td>
<td>35</td>
<td>13</td>
<td>99</td>
</tr>
<tr>
<td>Medium</td>
<td>34</td>
<td>36</td>
<td>9</td>
<td>89</td>
</tr>
<tr>
<td>Small</td>
<td>29</td>
<td>41</td>
<td>9</td>
<td>80</td>
</tr>
</tbody>
</table>

**Questions:**

1. What should happen to committees in the college that are outside the single purpose category?
2. How would you like to proceed with larger single purpose committees?
However, it could be safely concluded that the three locations and also Muhoya's had the notion that there were some economic benefits to be gained by reducing the expenditure on the committee sitting allowances. By talking to the farmers informally, it seems this was a relatively less complicated economic issue to justify the proposed amalgamation or the multi-purpose kind preferred by Muhoya's location. Slight differences on the same issue were shown between those with 3 and 4 or more years of education.

The higher the level of education, the higher the preference for eliminating the old committees and replacing them with one new committee. (Table 7). More support for forming only one committee came from those who had up to 4 or more years of education. Also there was a concern about the existence of so many committees among those who had no education, for example 65% wished to have only one committee and only 20% wanted the present committees to continue functioning. Only very slight differences were found in terms of literacy and family on their opinion of disposition of committees under single purpose divisional amalgamation.

The same question was asked, but this time on the multi-purpose societies. The purpose of this was to try to determine to what extent the members wanted elimination of the old committees, on every structural society level, i.e. on divisional and locational level. The question was: suppose for the moment that most people favour multi-purpose locational cooperatives, what should happen to the committees of societies which amalgamate to form one multi-purpose cooperative; should they continue to exist as sub-committees, or should one new committee replace them all? (Table 8)

About the same preference pattern is repeated here as on the single purpose divisional cooperatives, and we can now conclude that members' views on the disposition of the many existing committees after amalgamation is very uniform that only one committee should be formed. Also Muhoya's position relative to other locations on the question shows unwillingness to do away with the already existing committees straightaway.

Table 9 shows little difference with table 7, and finally we can come to one definite conclusion that the majority of the society members prefer only one managing committee for each cooperative society whether a multi-purpose or single purpose as recommended in the amalgamation proposal.
TABLE 8: LOCATION AND PROGRESSIVENESS BY DISPOSITION OF COMMITTEES UNDER MULTI-PURPOSE LOCATIONAL COOPERATIVES

Q: What should happen to committees of the coops. that amalgamate to form multi-purpose locational coops?

<table>
<thead>
<tr>
<th>DISPOSITION OF COMMITTEES</th>
<th>LOCATION</th>
<th>PROGRESSIVENESS</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thig</td>
<td>Agut</td>
<td>Tetu</td>
</tr>
<tr>
<td>Continue to exist</td>
<td>10%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Form one committee</td>
<td>73%</td>
<td>76%</td>
<td>79%</td>
</tr>
<tr>
<td>No opinion</td>
<td>17%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

BASE 113 106 76 37

Q: What should happen to committees of the coops. that amalgamate to form one single purpose divisional coops?

<table>
<thead>
<tr>
<th>DISPOSITION OF COMMITTEES</th>
<th>SEX</th>
<th>EDUCATION</th>
<th>LITERACY</th>
<th>DIVSN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
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<td>3yrs.</td>
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<tr>
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<tr>
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<td>65%</td>
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<tr>
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<td>13%</td>
<td>16%</td>
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<tr>
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</table>

BASE 242 90 137 100 95 134 66 76 56 332

TABLE 9: SEX, EDUCATION AND LITERACY BY DISPOSITION OF COMMITTEES UNDER MULTI-PURPOSE LOCATIONAL COOPERATIVES

Q: What should happen to committees of the coops. that amalgamate to form one single purpose divisional coops?

<table>
<thead>
<tr>
<th>DISPOSITION OF COMMITTEES</th>
<th>SEX</th>
<th>EDUCATION</th>
<th>LITERACY</th>
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</table>

BASE 242 90 137 100 95 134 66 76 56 332
DISCUSSION AND CONCLUSION:

The process of amalgamating cooperative societies into larger economic and social units is a complex and difficult one in the sense that members of such cooperatives and their managing committees will not necessarily follow amalgamation recommendations made by the cooperative officials. The present case study shows that there are other factors that members worry about other than the economic ones. Many comments have already been made that in developing areas cooperatives are more than economic institutions in the sense that they are also social institutions which provide other essential services. In this view then, in amalgamating cooperative societies, it is important that careful consideration should be given to the issues in terms of advantages and disadvantages. Such a consideration should not be centred only on the economic factors since sociological factors would be equally important. This is because such amalgamation involves re-organisation of peoples’ attitudes and their established traditional ways of carrying on their daily cooperative activities. If amalgamation is effected because it would look tidy on the chart of the cooperative movement, it won’t go very far. Such a type of amalgamation only causes unrest among the members and the committees, and also destroys the much needed cooperative spirit.

This then underlines the importance of involving the cooperative members in the decision of whether to amalgamate or not, and the type of amalgamation to be preferred. The implication of this strategy is that the members this way are placed in a crucial position, and would identify and support the objectives of such societies once they amalgamate. While seeking approval or support for a planned amalgamation, it is important that not only the advantages but also the disadvantages of such a move should be thoroughly explained to the members and their committees. The movement has been very weak on this point and not surprisingly was noted in Tetu cooperatives. Usually, the emphasis is put on the advantages of amalgamation and the disadvantages are deliberately never mentioned. In other words, the cooperatives are left with no alternative, but to go along with the amalgamation plans. However, in societies where the managing committees have cooperative interests at heart, usually they indicate what they prefer depending on what they want to achieve for their members. This spirit was displayed by the cooperative societies in Muhoya’s location in our study and confirmed the second assumption that the very active cooperatives with clear cut future goals and objectives would be reluctant to join with the less well-off cooperatives.
The importance of this stand taken by Muhoya's cooperatives, 
analyzing to form a multipurpose society within the location, is of that
reversing the development or emergence of self-reliance now being
cultivated by cooperatives in handling their affairs and particularly
of deploying their resources and energy to develop their community.
This can be interpreted as a departure from the traditional functions
of the cooperatives of just distributing financial benefits to the
farmers. This too implies that these cooperatives in that location have
reached a position of security to the extent that their objectives are
wholeheartedly accepted by the members of the location. As our data
indicates, the members here seem reluctant to throw out the old
committees, an indication that their work has satisfied
their clientele. This is very important for the 'organizational'
survival, an element that is lacking in many cooperatives in the country,
including many in the other three locations of the Division.

It could be argued that with the present self-conscious effort
to join together in a multi-purpose pattern, members will now have a wider
ground of participating in the affairs of their society in line with
the philosophy that "cooperatives could provide ground within which the
peasant can develop a feeling for the operation of a democracy and a
sense of participation in his own growth and development while giving him
some sense of security through group association." This form of
cooperation probably could go a long way towards eliminating many of the
weaknesses of the movement today, namely disloyalty, apathy and non-involve-
ment on the part of the members. Members would have an opportunity of
scrutinising the work of the managing committees and that of the staff.
Such an arrangement also could offer a better chance to the members of
electing leaders whom they really know and trust. The same objectives sought
by the proposed amalgamation could also be achieved by this form of
amalgamation.

In the movement today, the most important issue emerging is, what
is the most suitable geographical area for a given cooperative to cover?
A senior Cooperative Official recently put the issue this way: "today the
major problem facing the influence of the cooperative movement is the
geographical units that cooperatives should take, to make the members
more active, concerned and interested in their society affairs, so as not
to feel that these are just organizations imposed on them by the

Agricultural cooperatives and markets in Developing countries.
government." The concern here is that raised earlier of attempting to make the members develop the feeling of being "insiders" rather than "outsiders" in their societies.

While multi-purpose societies need an extremely capable and experienced manager, single purpose societies would not be terribly demanding in terms of management capability since they handle only one type of commodity. To what extent this form of cooperation could maximise individual participation and involvement in the society's affairs however, is not clear.

The optimal size of a cooperative society is that which is capable of maximising members participation. As in any other rural institution, effective participation becomes less where such an organization covers a large area, and where membership is very high. The same applies to cooperatives. The smaller the cooperative then, provided the operational costs are not unwarranted, the more the chances of its being effective in the community, and its capability of manipulating its environment. This supports the view that "effective organization and effective participation are governed by the rule of optimal size." 22

Where the size encourages members to take interest in society affairs, and where management realizes the implication of this, the society will probably have a chance of being efficient, otherwise members will become critical of it. This has been a great failure in the movement for members are not critical enough of the managing committees which causes them to deteriorate.

In concluding, certain points should be emphasized which have come out of this study with regard to the process of amalgamating existing cooperative societies. First, amalgamation should not be forcefully imposed upon the cooperative societies for this, more than anything else, would endanger the cooperative spirit. Secondly, in the whole process, a multi-disciplinary approach should be utilized in trying to understand the whole historical development of such societies and also the area in which they are situated. And thirdly, both the advantages and disadvantages of either single purpose or multi-purpose should be fully explained to the members, who should be given the opportunity to participate in the decision making of the type of amalgamation they would like to have.

22. C.G. Widstrand (ed.) op. cit. p. 239.
IMPROVING RURAL WELFARE - THE CASE OF FARM MANAGEMENT

Nilam Bedi
Institute for Development Studies,
University of Nairobi

INTRODUCTION

There is hardly a need any more to emphasise the attention that rural areas deserve for problem recognition and problem solving in terms of development. This concern for the rural areas derives not merely from humanitarian grounds but also from the desirability of bridging the gap between urban and rural levels of living on account of the concomitant social ills. A fact that can no longer be prorogued is that "...... low income coincides with a very large, predominant group of rural people that national development sooner or later, directly or indirectly, must come to terms. It is on their social and economic progress that the entire progress depends".¹

However, this recognition by itself does not leave the planners in a better position than they were in before 'rural development' became the catch-word in their manuals. The understanding that exists of the developmental process needs to be translated into workable methods of effective rural development planning. The transformation versus improvement approach controversy, the integrated rural development efforts² (Kenya, Egypt, Ethiopia), and the Intensive Agricultural District

Programme - IADP (India) are all illustrative of the tremendous experimentation on the macro-issues, in quest of overall rural development strategies. This is not to say that all the micro-level planning issues have been taken care of; the number of papers at this workshop is perhaps indicative of the amount of research going on at that level too.

BACKGROUND TO THE STUDY

The study comprises one of the several components of the on-going and proposed research in the Tetu Division of Nyeri district, namely the studies in communication, extension, co-operatives and water. It is also closely knit with the survey of the 354 farmers in the division executed by Dr. J. Ascroft in September/October, 1970. The Ascroft survey, in fact, provides the criteria for the selection of the farmers for the proposed study.

The original Special Rural Development Programme (SRDP) plan for Tetu proposed mounting an "Intensive Extension/Farm Management" experiment to find out the possible returns from more frequent visits for farmers by the extension staff than those undertaken at present and from the provision of advice designed to supplement the managerial capacity of the farmers.

In designing the proposed study it was felt that the experiment should be looked at from a slightly wider context than that of


4. Papers on co-operatives, water supplies, cotton research and extension, etc. is 'micro-level' research in that it will seek to answer questions that may possibly give empirically based guidelines to official policy on resource allocation within sectoral programmes. This paper will put forward the design of the farm management study planned for North Tetu and some attempt will be made to examine farm management in the "improving rural welfare" context -- particularly keeping in view the present stage of development of the discipline in Kenya.

as an isolated research task in Tetu answering the questions on 'returns' mentioned earlier. This aspect attains greater significance by the fact that farm management work at the smallholder level is almost virgin territory in Kenya, and that, consequently, findings from any study of this kind could have important policy implications for the relatively young farm management division of the Ministry of Agriculture. Hence discussions with various people having an interest in or connected with farm management were useful in formulating the research task. Though in no way giving a comprehensive coverage, these discussions gave a fairly broad cross-section of interests, ranging from the policy level personnel to the action oriented personnel in the field.

THE NEED FOR FARM MANAGEMENT AND THE ATTENDANT PROBLEMS

The need for a whole-farm approach in extension work, as opposed to the long-practiced technical advice based on single enterprises, has been emphasised by several researchers. The relatively recent creation of a farm management division within the Kenya Ministry of Agriculture is a step towards the fulfillment of this demand. The division aims at, amongst other things, improving the efficiency of operation of farms through farm management techniques that re-allocate the resources accessible to farmers among the different production opportunities open to them. Increased incomes and employment from this should result in improving the rural welfare. This re-allocation of resources at the farm-level would be a contribution towards "the improvement of the production base from existing sources" in terms used by Heyer, Ireri and Morris.


7. Heyer, J., Ireri, D., and Morris, J. Rural Development in Kenya, University College, Nairobi, 1969, pp.141-149. The authors also consider several other sources of the improvement of the production base, such as research, introduction of new products, etc.
plans. The farm plan finally accepted by a farmer is normally a compromise between the 'optimum' plan given to him and the subjective valuation of the farmer.

If differences in the impact of farm management advice mentioned above exist, how can the distinction be made between the groups that will show better returns from the normal technical extension than from farm plans and between groups for whom the converse is true? Of interest here is the official policy that farms below three acres in size are uneconomic and that only farms over six acres are suitable for planning. This straightforward classification on the basis of farm size is clearly unsatisfactory as it fails to take account of numerous other socio-economic factors that would influence the impact of farm planning on the productivity of the farm. Such factors include the degree of commercialisation of the farm, type of enterprises, managerial ability of the farmer, intensity of cultivation, resource structure etc. The original suggestion by the Department of Agriculture for concentration solely on the 'master' farmers in the experiment is also unsatisfactory as it presupposes, without an empirical basis, that such advice is needed most by those who have adopted most of the general run of technical innovations advocated by the extension staff.

Coming back to the impact of farm management advice, this concept can be studied from another angle -- by considering farm planning as an innovation. Though not comparable to a single, technical innovation such as hybrid maize, farm planning is an

12. The problem of farmer acceptance of farm plans is illustrated in Collison, M.P. "A survey of Technical Innovations in Tanzania", Paper presented to the East African Agricultural Society Conference, Nairobi, 1969, p.6. In a village settlement scheme in Tanzania, a group of 30 farmers agreed to revise management only on 37% of their arable acreage, 48% of their cash crop acreage and 27% of their traditional food crop acreage. Although these figures are on an aggregate basis, there are bound to be differences among the farmers as to the degree to which they adopt the farm plans prepared for them.

novation in that the decision to let the extension staff reorganize the deployment of the farm resources is a new concept to the farmer. The following is a very brief and subjective treatment of farm planning considered in the context of the five characteristics crucial to the adoption of an innovation:

1. **Relative Advantage**: is the degree to which an innovation is superior to ideas it supersedes. Economically, farm planning is advantageous to the farmer in that it brings forth an activity mix that makes the 'best' use of the resources available to the farmer. This is done on the basis of the 'marginal returns' principle - by successively selecting out activities giving the highest gross margin and maximising these within the limits of fixed resources and other constraints, such as farmers preferences, etc. In the final solution nothing can be gained by reallocation of any resource between the various activities.

   However, the farmers perception of the farm plan's relative advantage is likely to be quite different from the one outlined above on account of differences between his and our valuation of risk, self-sufficiency, leisure, etc. Complex model building (sophisticated programming and simulation techniques) in the context of smallholder agriculture is mostly in an effort to make our economic representations of smallholders more realistic by taking into account the various non-economic constraints.

2. **Compatibility**: is the degree to which an innovation is consistent with existing values and past experiences of the adopters. Compatibility with the conditions facing the farmer is normally built into the farm plans to a certain extent by making the economic adjustments within a specified framework of social and other non-economic constraints. This is in the hope that a plan which does not violate the major constraints

   Farm planning here implies the advisory service that helps in the re-allocation of farm resources by one of the gross margin methods, such as partial budgeting and programme planning.

(economic and non-economic) will in fact, be compatible with the farmer's undertaking. Furthermore, a consideration of the stage of development of the technical skills of the farmer is not handled satisfactorily by most farm planning techniques.

The acceptability of the notion of farm planning to the farmer may be based upon considerations of what the contents of the farm plan ask of him, particularly in relation to what he has been doing in the past. This would seem to suggest that farm planning will be more acceptable to farmers for whom the task is simply a re-allocation of their resources amongst the existing activities. Adoption of farm plans would be much more complex for farmers who, in addition to re-allocating their resources, have to introduce new crops or livestock to their farms or adopt new husbandry practices.

3. **Complexity**: is the degree to which an innovation is relatively difficult to understand and use. Though farm planning techniques (programme planning, partial budgeting, etc.) are complex to a degree beyond the grasp of most small-holder farmers, this aspect is taken care of in the operationalisation of the farm planning service in the Ministry. Though the extension staff have to undergo a fairly involved process to arrive at the plan for a farm, the farm plan is translated into a simple layout for the farmer.

4. **Communicability**: is the degree to which the results of an innovation may be diffused to others. An innovation must be easily communicable not only between the agents promoting it and the potential adopters, but also between the early-adopters and others in a social set-up. The former attribute probably accrues to farm plans as carried out by the Ministry, in that the formulation of a farm plan involves little expertise on the part of the farmer and the information needed for the plans can also easily be obtained through a vernacular. The diffusion of the idea within a social set-up will, however, depend to a limit on the demonstration effect farm-planning of farms has on the 'non-planned' farmers. It is difficult to foresee how strong the demonstration
effect will be since farm planning does not give a marked 'before and after' visual effect as, for example, obtained by fertiliser on a field. Moreover, changes in the variables that farm planning seeks to alter (income, etc.) manifest themselves over a longer period of time.

5. **Divisibility:** is the degree to which an innovation may be tried on a limited basis. Although the adoption of the complete farm plan may be spread over a period of time, farm planning, unlike many technical innovations like hybrid maize, is not strictly divisible in that the farm plan is prepared on a whole-farm basis and trial on a smaller scale may render the improvement sought ineffective. One question that arises from this is "To what extent is the farm plan still an improvement over the original situation in the face of only a partial adoption of the plan?"

It appears from the sketchy analysis above that a comprehensive investigation of how far the farm planning service, in its present form, has the attributes of a 'successful' innovation would involve measurement of a host of economic, sociological and psychological values.

**FIELD PROPOSAL**

**General Design and the Sample:**

The study is in the form of a field experiment whereby the effects of a farm planning manipulation on the experiment group will be evaluated. The baseline will be established from the Ascroft Survey and some initial work will be done in the next few weeks before farm planning is operationalised on the farms selected for the experiment.

A total of 119 farms have been selected from the original 354 farms surveyed. The location-wise breakdown is:
Ascroft Survey

<table>
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<tr>
<th>Muhoya's</th>
<th>Tetu</th>
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<th>Total</th>
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<td>39</td>
<td>77</td>
<td>120</td>
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</table>

The sample was drawn to give the following representation of the innovativeness index constructed by Ascroft:

Group I (early adopters) --- 45 farms
Group II --- 32 farms
Group III --- 20 farms
Group IV (late adopters) --- 21 farms

Non-selected farmers in the original survey sample will be used to obtain matched groups for control within each of the four treatment categories. Thus, in effect, farmers have been matched (within each innovativeness category) and randomly assigned to the treatment and control groups.

Personnel:

One Assistant Agricultural Officer (A.A.O.) is being assigned to the experiment together with 4 Agricultural Assistants (A.A.s) who will be the enumerators for all field work. Each A.A. will work with roughly the same number of farmers, the number being made up of farmers from all the four groups of innovativeness.

Chronological Order of Field Event:

Farmer selection being already complete, the next step is the preparation of farm plans for each of the 119 farms. The completion of the baseline will proceed simultaneously with the collection of data necessary for the farm plans.

16. The index was constructed on the basis of the adoption of various husbandry practices advocated by the Ministry of Agriculture for eight different crop and livestock items.
There are two alternatives for the organisation of the initial information gathering stage; either the extension personnel visit each farm or the farmers be centred as a group at Wambugu Training Centre (followed later by short visits to each farm). The latter approach is tied to the present ideas at the provincial level on group extension methods. It may well also shorten the time period spent on the first stage. The farm plans, it is hoped, will be operationalised during the 1971 short rains.

The four A.A.s, involved in the study will, under the supervision of an A.A.O., continue to visit the farms over the course of a full cropping year (September 1971 to August, 1972), helping the farmers with the keeping of input/output data and financial records. On an average, every farmer should receive a visit every ten days.

**Parameters to be measured and the general framework of analysis:**

The study is composed of two main components, namely:

1) An evaluation of farm planning as an innovation, and

2) finding out empirically the returns to farm planning at different levels of farmer innovativeness.

It is proposed to tackle Number (1) above in stages. A crude measure of the extent of farm plan adoption will be obtained by a survey, through the normal extension visits, of the resource allocation (acreages, etc.) revised and expressing this as proportions of the revisions advocated by the farm plans. A counter for comparison would be information on the extent to which these farmers have adopted the previously made plans and layouts. These past plans and layout were formulated on a strictly technical basis and did not take into account in any systematic manner the individual’s social, financial and other constraints. Apart from inter-group differences, there are likely to be differences between the response of all the farmers.
generally to the proposed farm plans and the resource to the past farm plans.

Evaluation of the farm plans in terms of the five attributes outlined earlier will have to draw upon the detailed data recorded over the full cropping year. This data will be used to build models of the farm situations incorporating socio-economic constraints (e.g. through programming techniques --- parametric, etc.). The original farm plans compared against these would show the magnitude and direction of differences between the two. If significant differences are found it may be advisable to invest more effort in getting a more accurate picture of the relationships in smallholder agriculture. Armed with this knowledge the experienced extension worker could make subjective adjustments in advice to suit the individual farm as also suggested by another researcher.\textsuperscript{17} This course of action may make a good pay-off in the face of the fact that simple planning techniques are not refined enough to be realistic to the farm situation and that the complex, realistic models cannot achieve an adequate coverage of farms on account of the resources (both skilled manpower and financial in terms of computer time, etc).

Observations on the other aspect of the 'innovation attributes' of farm planning will also be made during the course of the year. Correlations between the success of farm planning as an innovation and the variables used in the scale of innovativeness will be looked for.

Discerning differential returns to farm planning at various levels of innovativeness (second component of the study) will, however, require several seasons. The dependent

\textsuperscript{17} See Hall, M. op. cit., p.23
variable under manipulation is, basically, productivity. Income (per acre, per unit labour input, total farm income, etc.), yields, inputs, etc. give information on the level of productivity. Other indicators of the dependent variable may, in fact, be easier to discern in the short run - e.g. changes in enterprise combination or changes in the pattern of resource allocation. Changes in the dependent variable can be statistically measured as between the treatment and control groups within each category of innovativeness. The inter-category comparison of the effect of farm planning will probably have to be more in a qualitative manner on the grounds that the farm planning treatments for the various categories are not strictly comparable as their formulation is influenced by different characteristics prevalent in each category.

Intensive extension (through more frequent visits) being another independent variable involved in the study, a proposal (if time permits) is to see how it, in conjunction with farm planning, influences the managerial ability of the farmers. This will involve specifying production functions for certain enterprises for each category of innovativeness in a 'before and after' treatment situation. The information available in the before situation will, however, be a critical factor. Rather than getting exact differences, only rough indications of the change in this factor may be obtained.

Replicability being one of the most emphasised principles of SRDP, the techniques used in the formulation of the initial plans will be along the lines of work being currently carried out by the farm management division of the Ministry of Agriculture and the farm management officers in the field. Partial budgeting and a programme planning type method will be used by the A.A.s., supervised by the A.A.O. The current farm management courses in different parts of the country are already giving instruction in such methods, though these techniques have not been used in practice to any significant extent. The experiment may thus also have an element of evaluation of the field experience of these farm management techniques.
The necessary data for the farm plans is proposed to be extracted from existing sources. These include the Agricultural Statistics Unit of the Ministry of Finance and Economic Planning, the 'district guidelines' and information from the farmer. Getting the full input/output data for a whole cropping year for farm planning for various regions of the country being a task not likely to be accomplished in the near future, the more rewarding approach immediately would be to use the existing information as the basis for future refinement. Detailed data proposed to be collected from the 119 farmers will later be compared with the data used for planning the farms in terms of its accuracy, effect upon the final plan attained and the effort involved on the part of the extension personnel involved. This will probably also involve some theoretical programming exercises.

Other Aspects

Apart from being an evaluation of smallholder farm planning, the study will yield useful information that can be utilised in other ways. One interesting facet is that of modal planning, whereby plans applicable to many farms may be constructed. This is related to the scarcity of farm management resources mentioned earlier and investigations to develop such techniques would help to spread the farm management coverage of existing resources.

The crucial thing is to be able to plan for a farm situation that is representative of a specified group. The plan can then be adapted to individual situations with minor adjustments. Work on characterising representative farms, for the purpose of estimating aggregate supply functions, has been done by several researchers. The data from this project will be

used to investigate the possibility of getting nearer to the 'representative' farm by using the appropriately weighted innovativeness scale in conjunction with the criteria developed by the earlier researchers. These criteria include grouping of farms according to resource restrictions, land/labour ratios, etc.
CHAIRMAN: Shall we look at systems analysis especially? We want to be able to review it critically. Dr. Ascroft has been trying to imply that in fact rural development is not really composed of a very discordant behaviour. He was addressing himself to the problem of cumulation and continuity in development. Should we look at development in a Kenya sense - seek out who are the traditional leaders and who are the modern leaders, what traditional traits are carried on into latter stages of development? The area where I think we might discuss is how the economist comes to decide what development is, given its complexity and interconnectedness.

MUTISO: If you define rural development as expanding control of people who live in one particular area, is there not a danger that the more you control the environment, the more you control the individual.

ASCRÖFT: Much of the control has of necessity to be of a specialised nature. Some specialize in health care, others in food production, still others in marketing and so on. It is a matter of collective control of environment. One tries to bring the various specialists together to form a viable social system. However, when you bring people together to co-operate in collective control of common environmental variables, it is inevitable that the co-operative will begin to control individual members in order for the co-operative to operate efficiently. Development could be immensely speeded up if we were to introduce co-operative specialization. It takes time to force a spirit of co-operation among people.

HOPKINS: Given the present situation in Kenya we cannot afford to stress individual freedoms to choose, at the expense of collective overall planning. Dr. Ascroft was clearly right to mention the fact that these collective plans may constitute a threat as well as a promise. For example, the Government may promise the farmer hybrid maize but this also contains possible threats - e.g. the Government might alter its marketing policy or might not be regular in its supply of seed etc. In other words, the collective planning - which we might have - may not be seen by the rural people as increasing their security at any rate at first. This adds to the problems of all extension efforts.

PADFIELD: I think it is very important first of all to have some definition of what development is. So many people, particularly expatriate people, assume that they know what it is and they don’t. People who are being developed have to know what this is in terms of their own self-interest. Development is competitive. The people who are caught up in it, the "beneficiaries", know that it is competitive, and the question they are asking is “How is it going to benefit me?” Until we answer this question - whoever the people are - they are not going to respond.

OKELO-ODONGO: I wonder if there is a threat offered. What one is saying is, look unless this is done, there will be trouble coming and you will be worse off. There is no choice from Heaven to Hell.

ASCRÖFT: People in production will tell you that when you introduce a new more efficient method of producing anything, the first effect is not to increase production but actually to lower production, because in this changeover people are having to unlearn old habits in favour of new ones. Now unless you are prepared for this effect, unless you have
...warned about it, it can be terribly disconcerting when it occurs, so much so that the recipients of the new more efficient method of production may abandon it prematurely and return to the safety of the known but less productive old method.

PAPFER: Isn't development the increasing of the opportunity of choice? Have people to choose to take the risk or stay just as they are?

ASCROFT: Expanding control is expanding choices available.

OLOYA: The farmer always, when given advice reacts by taking into account his own interest - for instance, he grows the old type as well as the new one. Where does the threat aspect come in?

ASCROFT: It comes in so far as people perceive that somehow there is a threat involved in telling him to stop what he is doing now and accept what is being offered by way of a promise of increased production in the long run, and hence an increased span of control. All that extension personnel do is to give a promise: they don't promise to make good any losses if failure to realize the promises occurs. People have looked for ways of explaining why peasant farmers are so resistant to change. The resistance is based mainly on the fact that they are not entirely happy with government promises of extending their control over agricultural variables when they know that Governments don't underwrite their promises. Governments will give loans for instance; if the loan fails to realize a profit, the Government does not write-off the loan, rather it continues to demand repayment of the loan.

MUTISO: From a policy point of view in terms of Kenya who has the final say in what goes? Is it the Administration, the politicians, the experts? Is it local experts as opposed to outside experts? How do you solve the problem?

ASCROFT: Such a thing should not be undertaken by a number of expatriates. All they can do is impose their often inappropriate habits of controlling their environment upon you. But if you look at the Tetu experience, the people who were connected with policy makers are all Kenyans. The utility of an expatriate in a situation like Tetu's is merely to indicate alternative ways of solving problems, to increase the number of alternatives to the people. The hardest job is getting the people to begin to look at things collectively, to sit down and begin to trust each other. It is fruitless to plan an intensive production campaign without simultaneously planning the marketing of the product.

HIIHUH: Who is going to make the decision? We have had this original Plan for the Tetu SRDP from Nairobi. This plan was just not suited to the actual situation in Tetu. What can we do in terms of catering for local people to try to determine what are their needs? The range of choices that these farmers have is limited. What is the good of trying to grow hybrid maize instead of ordinary maize? We have to emphasise the inter-related nature of all these features. There must be collectivity of the people trying to project their methods towards one direction and the fear which is implied would be minimised.
ASCROFT: The person who in the end influences the decisions of people is the person with information about the maximum number of alternatives. The person who knows most about what is going on. In this particular instance it is a few people from IDS who are influencing the decisions in a place like Tetu but it is the information they are producing which is doing the influencing, not they themselves. We cannot branch into a thing like marketing until we get somebody who knows how to gather the information regarding marketing. When we do, you will find that he will begin to influence decisions in marketing as well because we will have that valuable commodity - information about alternatives. It will be instructive provided the information is accurate and sufficient.

GACHUHI: People have to work in an integrated system. How does the Tetu experience relate to policy making at the top?

ASCROFT: Whatever is done in Tetu must meet a criterion of replicability elsewhere in Kenya. Already we are replicating the Tetu experience in Vihiga, Kisii and Kiambaa. We have developed a tremendous amount of credibility as far as they are concerned, but it has to be based on accurate information. At the level of Government there has to be an increasing effort on the part of the top government officials in making sure that information used is based on information that is accurate. When somebody says I have done a sample survey, it has to adhere to very strict unbending rules of sample surveying. They have to go towards a point where the information is far more accurate than it is now.

NAKITARE: Since the Community Development approach which has existed longer than the pilot project in question has more or less the same objective, to what extent is the pilot project related to it? Also how far are the pilot project efforts related to development efforts in other parts of the country? I imagine that the whole purpose of the pilot project should be one of not only improving the rural welfare in the short run but also that of creating self-reliance and a sense of self-direction in the long run. If this is the case, then the research experience in this field is failing to point out the danger of ignoring the existing efforts and hence permitting duplication and wasteful efforts. The danger of developing environmental control ability by making wild promises in connection with better living conditions is obvious. Promises about a changed environment for the better should be more realistic and only those changes which are likely to occur should be promised. Whenever promises fail to be redeemed people get more frustrated and often lose most of their developmental enthusiasm. Hopes should not be raised without fulfilment potency, even if from the planners point of view the project seems a potential success.

ASCROFT: Our approach is not to go around raising unfulfillable hopes. Our goal is to train extension agents as effective communicators of new ideas and practices - not to go around promising things which they cannot deliver. Our first step is to extend the span of control of extension agents, many of whom have farms which are worse than those of the people they are trying to educate. Many of them need extension more than the people they are supposed to be helping.
One of the elements which must be emphasised is the increased capacity in your population of their ability to bear risks.

ASCROFT: Expanding control means reducing the fear of risk. You must reduce the amount of risk sufficiently before you can claim to have acquired a significant degree of control expansion.

ROLLING: I think there is something to control which gives persons who have had an experience of being able to control their environment a greater sense of self-reliance. The more you allow people to control things, the more self-reliant they will become. You must be very careful not to frustrate people in their effort to gain control because then they will become less able to develop, i.e. less self-confident in trying to gain more control.

**The Tetu extension pilot project: J. Ascroft.**

Dr. Ascroft described briefly the contents of the Tetu Extension Pilot Project Report. He stated that the principle purpose was to stratify farmers according to the level of progressiveness with a view to tailoring development projects according to the needs of farmers at these different levels. The study being reported is the first part, the baseline of a three part field experiment. The second part will be addressed to implementation strategies and the third to evaluation. The Tetu Project is a pilot project which is currently being replicated in Vihiga, Kisii and in the Kiambaa area of Kiambu.

In addition to highlighting the main findings of the report, Dr. Ascroft also described a study of informal rural leaders which was underway. These informal leaders are apparently a crucial link in the diffusion of innovations in that most farmers wait for them to take the lead in adopting new ideas. Whilst we know how to find these informal leaders, we still do not know how to use them.

HESTER: How do you nominate the leaders?

ASCROFT: By sociometric nominations. We asked a representative sample of farmers to give the names of those farmers to whom they would go to for information, who they would trust, or who among them would have to use a new idea in order for others to have confidence in it? We asked three names to avoid getting just the most obvious farmers being nominated.

TARE: It seems to me that if you are going to use natural leaders for demonstration purposes you are probably defeating your own purpose. The only time to use natural leaders is perhaps when you want to accelerate the diffusion of ideas. For instance you can take them to another project which is ready for observation. If you use demonstration plots on natural leaders only, you are doing little to encourage the common peasants.

ASCROFT: I agree with you. We have no plans to use natural leaders but we know much more about them. We are in the process of studying them much more closely.
NAKITARE: What experience have you got in terms of response? If you use a collective approach like self-help, my own experience has shown that you get more response from the less enlightened farmers.

ASCROFT: When we get a little further into the proposal you will find we take up the problem you have just mentioned. Turning now to the question of changing pattern of land tenure, in 1962 every single farmer in Tetu Division had no more than one piece of land. I believe this was the deliberate policy at that time, it was one way of keeping control of the population of the area so each farmer started off with one farm. Ten years later, there are a number of people who have two, three, four and five separate pieces of land. They turn out to be almost only the most progressive farmers. We are looking at the records to find out what occurred to the people who have been dispossessed in the area. Since none of the laggards currently have more than one parcel of land and since their average acreage tends to be less than three acres, and since about 45 per cent of the most progressive farmers have three or four pieces of land, with a collective average acreage of 9 acres, what is happening is that the more progressive farmers are obviously buying out the less progressive farmers. We might have found that the mean acreage of the more progressive farmers and the laggards might have been closer to each other in 1962 but the trend is towards larger and larger farms being owned by fewer and fewer people.

SMITH: Have you allowed for informal sub-division of the farms? Could it be that the number of farms that are splitting up is almost equal to the number of farms being bought by existing land owners?

ASCROFT: We are concerned mainly with recorded transactions. Each separate parcel of land in Tetu Division has a separate leaf in the land register. Some of these parcels of land have changed hands more than once, and these changes appear always to be in favour of more progressive farmers.

MOOCK: In Vihiga the same pattern exists but there has never been any land consolidation. Progressive farmers have twice as much land as the laggards.

PADFIELD: How is rural development affecting the process of landlessness?

ASCROFT: Given the present type of development that is occurring, you are going to find an increasing number of rich farmers in the area with an even greater number of landless people. There are eight or nine villages in Tetu District into which these landless people are beginning to congregate. They are recorded as emergency villages and the pressure is always upon the people in these villages to move to the Settlement Schemes or elsewhere. Many of these people are moving to Mathari Valley and places around Nairobi. Particularly it is those farmers who have become completely disenchanted with farming, who are becoming landless.

PADFIELD: Is the Kenya Government policy cognizant of this trend?

ASCROFT: I do not know. They are, however, increasingly interested in determining the nature of the linkage between rural development and the urban problem.
The U.S.A. started a rural development programme and it took 35 years to find out that, if anything, they were intensifying the migration of rural people and helping the larger and more successful farmers. Even today they still cannot do anything about it because the farm block is so powerful in the Government policy.

ASCROFT: They started to rectify the problem too late in the U.S.A.

GACHUHI: In Tetu, within one unit of land, instead of the traditional division of that land where the father gives a piece of land to his son, the progressive farmers are going into a co-operative kind of adventure with their sons. However, I am still not quite sure whether all of them are working on the same farm or whether some have left to work outside and send funds back for the farm.

ASCROFT: We did not ask that specific question in this study, but in another study there is an extremely high instance of only one of the males being on that piece of land; the others are reported as working elsewhere. That is some evidence of the fact that it is being farmed on a co-operative basis with people going off into the cities and sending money back towards this co-operative effort.

GACHUHI: So these co-operatives are the ones buying out the others.

(Dr. Ascroft proceeded to describe the proposal for experimentation contained in the Tetu Extension Pilot Project report).

SMITH: I am a little worried about the fact that you might be losing control over your own experimental design in that I am not quite sure whether you want to test as separate experiments first your ability to teach extension agents and second their ability to teach different levels of farmers. I guess as a scientist you have allowed for this.

ASCROFT: I believe in strict experimental design calling for controls at every level.

HOPKINS: How many of your research people have been trained for teaching? It seems to me you are assuming that you are going to do better than the people being trained.

ASCROFT: When I find people who have special skills I try and build them into the programme. The teaching of extension has been my particular speciality for a long time. It should be appreciated that the teaching of extension can be divorced from the teaching of agriculture. There is no reason why anyone who does extension should know anything about agriculture. He has to persuade a farmer from one way of doing things to another way. After that you send him someone who knows the techniques of what you have persuaded him to do.

SMITH: How about multiplying this so that eventually you become effective over a larger area? You can go on putting resources into schemes until the result is that they become way beyond the resources of the national development plan.
ASCROFT: This is a pilot project, we want to find out whether what we are doing has a potential for replication elsewhere in Kenya and perhaps in the rest of the developing world.

HOPKINS: Are you also thinking of producing booklets, using the radio, the TV etc?

ASCROFT: Yes. We are going in that direction, we are also not working unconnected with the outside world. I personally also have connections with the Comila Project.

TEMU: I am still not entirely happy about the fact that extension services are not reaching the lowest strata of farmers. It seems to me that a situation exists where perhaps the farmers who are most progressive are benefiting more and more. The other problem that worries me is that, in my understanding, a number of areas in the Central Province of Kenya have long been regarded as areas showing a great improvement in agriculture and this was highlighted as a successful experiment because it has led to an increase in productivity for the small scale farmer. But it looks to me as if there is a disturbing trend to establish a rural proletariat by creating a landless class of farmers as a result of the larger farmers buying them out. Is this trend one that is viewed as desirable?

ASCROFT: I am not in favour of the creation of a landless majority. As a matter of fact the extension experiment is merely a focal point of a larger problem going on in Tetu. It is fruitless to increase the production of a few people when there is nobody around to do the marketing. What I have noticed is that there is a great lack of middlemen in the rural areas. This does not encourage people to live on the land. If you could get local middlemen coming in the areas, keeping the money within the area, you are going to begin to create a new type of employment in the area which did not exist before. That is, to keep people on the land, to prevent the creation of a landless mass, we must begin to focus on the problem of creating an internally self-reliant rural economy.

GWYER: Our impression from visiting that area was that not all of the sellers of land are going to become landless. Some are selling to buy a share in a co-operative, and the landless in the villages may date back to the time of the Emergency.

MUTISO: What happens when the area of the co-operative farms is full? Do you find this same kind of buying and selling of land in areas which are not seen as good areas for farming? If one is going to think seriously of national productivity one must look at all areas, both high potential and low potential.

ASCROFT: Land is not the great constraint that people might think. Nobody has given that much thought to what happens on the small farms. I do not think that land is a constraint, it is lack of ideas about what you can do with land whatever size it is, that is the major constraint. That is where we should be concentrating our efforts. Those who are selling up are those that have not been given any constructive ideas of what to do with their two acres of land.
I understand that you intend a progressive farms approach—indicate more types of progressive farmers. How do you distinguish your group leader? Is there an indication of what makes
the prestige of a leader, is it that he is progressive or the fact that he has become wealthy?

ASCROFT: On the question of leaders we did not start out by saying, 'I wonder who people from these areas consider to be leaders', so we asked them to tell us whom they considered to be a leader and how we are going back to find out what it is about them that makes people regard them as leaders.

KIRIA: I was going to ask something about the training of teachers for the strata that you mentioned. In terms of sponsorship, under whose auspices would these fall?

ASCROFT: At this time this is a proposal which we intend to pass on to Government to ask them to finance it.

Please give us some of the background which led to the identification of the extension services as being a key variable in development.

ASCROFT: My own training is in the area of communication arts, and the particular type of communication that has been of great interest to me has been persuasive communication particularly with regard to diffusing innovations. In developing countries almost 100 per cent of the diffusion of innovations is being done at the level of the extension agent working for the Government. I believe that farmers, like school children do not fail, rather, extension agents or teachers fail. This philosophy is based on the 'late bloomer' experiment in the U.S.A. in which it was shown that children who were classified as backward and retarded and placed in slow streams in schools were able to make phenomenal progress merely by making teachers believe that such children were late bloomers and would soon surprise the teachers with the progress. The teachers apparently changed their attitude to those children designated late bloomers and unconsciously began to encourage and reinforce them more than other children. The children in turn, responded to this unaccustomed positive reinforcement by blooming as predicted. The interesting question which arises is how these children came to be designated retarded in the first place. The answer may well be that the teachers to whom they were first exposed failed to provide this positive reinforcement — indeed, they may have established a set of negative reinforcement which reified itself as conduct and achievement reports were passed on from teacher to teacher.

KIRIA: The discipline of Community Development came into operation, the realisation that the traditional idea of dissemination direct from the expert had little chance of taking root. The Community Development approach was therefore used as a 'ground preparer' before sowing the 'seed' (technical knowledge). In other words the Community Development approach does the job of education and motivation before an agricultural or veterinary expert comes to say what should be done by the people e.g. use fertilisers. This whole idea seems either ignored.
or forgotten even by University investigators!

ASCROFT: Yes, but they (Community Development officers) are untrained in the methods of extension and they have not been very successful.

MUTISO: If you look systematically at this problem it does not just extend to Community Development only, it often extends to an organization such as Maendeleo ya Wanawake.

OKelo ODONGO: On this point of informal leaders, a way has to be found of using them. Referring to the previous discussion on landlessness, I wonder whether any study has been made on the man who sells his land?

ASCROFT: Your second point is one of the things we are looking into now.

Problems of amalgamating cooperative societies - The case of North Tetu
E. Karanja

Improving rural welfare - The case of farm management: N. Bedi.

? I am interested in how you are going to get the farmer to understand and adopt a plan.
EDI: We have to distinguish what we are asking of the farmer and what we are asking of the extension officer. You have to go through an involved process to arrive at a farm plan and most of our farmers will not be able to work out these processes but this aspect is taken care of to a certain extent in the operationalisation of the service. The farm plan will be translated into very simple terms, in the form of a layout, for the farmer. We have to rely quite a bit on the farmer's faith in the extension personnel.

I was wondering would it not be better to work out the plan with the farmer?

HEYER: This is really what will happen in practice.

HEYER: You seem to be talking about getting farm plans for the farmers but at the same time not really involving them in them.

EDI: I have not tackled that point fully in this paper but one of the methods Dr. Ascroft suggested was that before we start getting information for the farm planning we get the farmers together at a Farmers Training Centre and convey to them the idea behind the whole exercise. As we go along we will learn more about this aspect.

HEYER: Then you can either do it simply enough for the farmer to make his own decisions or do something more sophisticated and make it applicable over a wide range of farmers.

EDI: In the last section of my paper I mentioned something about modal planning. That is something that has been a burning issue in farm management. There is some work being done on how to categorise farm groups. I intend to try to use these progressive categories in conjunction with other criteria used in the past, such as land/labour ratios, in order to define groups suitable for modal planning.

HEYER: Are you planning to go into both of these because they are two different kinds of exercise.

EDI: This is explorative. We are going to have a record keeping exercise after formulating the farm plans. The data so generated could probably be used in a number of ways. Pursuing these two 'different kind of exercise' will be helpful in evaluating the degree to which the simple planning techniques take into account the reality of the situation. Some light may be thrown upon the dilemma that the simple techniques are not sophisticated enough to be real and the more complex techniques cannot be used to give a satisfactory coverage of the farmers because of the enormous resources their use demands.

ASCRAFT: One of the things intended to be done is to bring all these people together before giving them an individual plan. Like Mrs. . we see the difficulty of this especially if you dish things out. That is why we are going to try to bring them together as a group and we can persuade them of the relative advantage of this kind of
HARPER: When it fails, will it be because they have not used the plans or because they have tried and failed? Will you be able to see if they have adopted the original farm plan?

BEDI: Due to failure to use the plans; and if they do not show improvement in spite of adopting the farm plans reasons for this will be examined. The answer to the second question is yes. "Before plan" and "after plan" information or the levels of various activities (enterprises) will show this.

GWYER: It seems to me that you will not find it difficult to come up with a farm plan for some of the larger farms but on the small farms it is going to be difficult because the farm planning is going to be the introduction of a specific crop and the farmer is going to tell you that his main problem is lack of money. Do you share this pessimism that it is going to be difficult to do anything for the laggards in terms of farm planning?

BEDI: Yes. That is one of the basic objects of the whole exercise here - finding out, empirically, what exactly the problems are at different levels of farmer progressiveness.

ASCROFT: Farm Planning and Farm Management appears to me to be the School Leaving Certificate of farming and it is what you give the farmer when he has learned all the other more elementary practices and processes associated with efficient progressive farming.

THIMM: I do not agree with excluding credit facilities because in many instances you may get the result that farm plans are not used because of lack of credit facilities and you then cannot judge if your farm plans are wrong or your extension approach or something else, or just lack of credit. We all know that credit has to be associated with extension services so I cannot see that you can get good results out of this without credit.

BEDI: I hope I have not given a misleading impression. We are expecting farmers to use the normal channels of credit that are open to them.

SUMMARY AND DISCUSSION OF THE DAY'S PROCEEDINGS

CHAIRMAN: Perhaps the best way to open this session would be for me to go through the list of points raised in earlier sessions today.

1. The first question is, whose welfare are we discussing?
2. The role of Government and the role of local groups and how they should individually and collectively be involved in development.
3. Should everyone get equal opportunity, should we aim at the laggard or the most progressive and forget the laggard? This is an important and extremely sensitive question.
4. Are we satisfied with landlessness as a natural result of economic development? What is in fact our current orientation to development which seems to create a situation of landlessness as a result, we satisfied or should we design some other approaches?
Do we as a workshop endorse the Tetu extension experiment as it is or do we suggest areas of modification?

6. Do we recommend anything on farm management strategy?

7. Have we identified all the bottlenecks of rural development?

8. Is extension really the major critical bottleneck?

9. Obviously we need leadership studies. It is an area which needs very careful research and more ideas.

A theory of development, do we need it, have we come up with it or should we wait?

Those are the main points for discussion now.

CRAWFORD: From what you are saying I get a certain interest in giving a little more attention to the laggards and what to do about them. Here I am having a little trouble linking up what you said this morning and the specific content of the extension project in Tetu. The project itself puts a very important emphasis on developing simplified techniques, etc. On the other hand you can see that there is another ingredient here and this is the material that you disseminate from the extension services. You spoke this morning about development being essentially a process of increasing one's control. The laggard might be in a position where he has very little room to move. With his resources he might not be able to alter their composition. Is he a laggard because he lacks information or because even if he had the information he could not afford to do anything with it?

ASCROFT: I am wondering about the same thing that you are wondering about.

CRAWFORD: The balance between the two has different importance in different areas. In Tetu you might be fairly confident it is the farmer, in areas like Kwale one just has to throw up one's hands.

ASCROFT: I have to take on agricultural experts to help me on this. We also have to get hold of a number of these laggards and get them to talk about their problems.

HEYER: Is not the question whether you are interested in the laggards for themselves or on the national output side? There is the question of whose welfare you are interested in.

ASCROFT: We have established four levels of farmers according to their degree of progressiveness and I am interested in investigating all of them. I am not interested in looking at one level, such as the laggards, to the total exclusion of the others.

HOPKINS: Eventually we may be forced to answer a fundamental question, are we going to sacrifice total production for the benefit of development of all the farmers? It is quite possible that maximum production could be obtained by squeezing out all small farmers— but this would not maximise rural welfare.

ASCROFT: I do not see why both the development of all farmers as well as increases in total production cannot be achieved together. I am not seeing an either/or business of this. Benefiting the development of all farmers redounds to the improvement of total welfare.
MUTISO: You have a situation where most of the services to the rural areas are servicing the better people in the rural areas. Where do we go from there? Should this not be part and parcel of the study we come up with?

CRAWFORD: There are two groups, one the progressive farmers and the residual in the other group. Then the residual group have room for a lot of improvement in production that satisfied your national goals as well as your equity goal.

ASCROFT: I would like to make it as clear as possible that we are not looking for a solution which applies to farmers at only one level of development. If your hypothetical situation proves to be accurate and we find that we have discovered a useful strategy for helping progressive farmers, we will chalk that up as a success and turn our attention toward determining a useful strategy for helping farmers at other levels of development. In time we hope the laggards are going to be pushed through to the top.

ROLLING: One has to help the residual farmers. I do not think it is so much a matter of production because within ten years hybrid maize will be running out of our ears. The question is not so much production, but whether the maize is to be produced by a few people or by a lot of farmers who then each have less income than the few would have had.

GWYER: In Pakistan who benefited from the hybrid maize? Was it not the progressive farmer?

ROLLING: That is right.

GWYER: So the same thing would happen here. What bothers me about the Ascroft approach is that he is concentrating on one input: the extension input, when we know that to obtain the fruits of the Green Revolution we need to give the farmer a package of inputs. If we only give the farmer the extension input then necessarily it will only be the more progressive farmers that have access to credit etc. who will benefit.

ASCROFT: Agricultural extension is not one input. It is a package of inputs. Indeed, it is the means by which the package of inputs you speak of become available to farmers.

CHAIRMAN: There are different ways of looking at the problems and then making a decision on it. Let us for a moment concentrate on this progressive farmer/laggard dichotomy. We seem to be interested in the total welfare rather than in the welfare of a particular group. If total welfare is increased, if you can increase output by improving the efficiency of the laggard farmers, you are happy. In other words, you are only interested in total welfare and really which side one takes depends on what type of objective one is trying to achieve. The emphasis is on improving the productivity of the rural areas. Another version might be to concentrate on the progressive and at the same time improving the welfare of the other groups by taking appropriate social measures which the Government can take for example by pursuing policies of subsidising. It is very difficult to come to one conclusive objective.

HEYER: That is precisely what we are questioning, whether we are at total welfare or are we in danger of equating total production with total welfare.
The discussion seems to be leading us to the fact that this question should not be dropped here but moved on to the socio/political realm. We will now move to the second question, the role of the Government and the local people and how the Government should mobilize the local people.

Plus this question of persuasion or individual choice. We should consider the balance between opportunity and persuasion. Does rural welfare mean giving people a chance or moving them from one position to another position? I am still worried about Ascroft's approach because it does seem that he does not allow in his framework for the person who opts out of his perception of change.

CHAIRMAN: Perhaps we need to clarify Ascroft's levels of analysis. He focuses on the farm level. Obviously the dimensions will change slightly at the village level, when we then consider dimensions such as community participation, government involvement in projects etc.

ROLLING: The question is a little difficult because I do not think Government can do anything unless you get people to see that what Government does satisfy their needs. That is what I like about Community Development. They are looking at needs and then trying to specify them. The ideal is to strike a balance and that seems the role of the Government.

CHAIRMAN: Who decides what the people want? This ties up with question six as well. But I think it would be premature to say yes or no on the experiment and I would be hard put to say if he is doing a good job as yet. There are other issues to be debated further before we say go on. We have a free session where I hope that we will hear more aspects of this whole approach when we can re-think and raise more questions. I think at this particular moment it is too soon, the ideas have not jelled.

HINDO: There is one thing missing from the whole study. We have a situation where you tell us of the technical aspects of what one must do to get development yet one of the main issues is leadership which you do not touch on.

ASCRFT: You sound as if you are the kind of guy that should join us, you seem to have the expertise to join us.

SOUTH: Like Dr. Gwyer, I am concerned that Dr. Ascroft's study is only concerned with one input. It will take about two years for Ascroft to come up with some definite ideas on extending the knowledge or our extension services, but will we have any useful ideas on other inputs? Is there any chance of using Ascroft's approach for other connected studies, like credit, farm management, etc? What we have done so far is just get one part of it, how long is it going to take us to fill in the whole?

ASCRFT: This report is only the first output from the whole Tetu project.
CRAWFORD: There is one general point in support of this study and that is that this project is a real live effort to do something about a subject that most of us spend time talking about. We could not have had a discussion today if we had not had this precise project to talk about. I think one important point is that if you assume good faith on the part of Government and the politicians and the Civil Servants you are on the right lines, it is merely a lack of knowledge about how to work these things out in practice.

ASCROFT: There has to be a definite policy that will be pursued. Some of our local administrators seem to be very sceptical about the ability of the people to plan and hence when they come with the plans they are never successful because the whole question of communication seems to be barred. We still have to go back to the people. Once we give them the data, are we in fact going to allow them to make the decisions as to what is going to happen to their lives or are we going to interfere with them?

ASCROFT: One way of elaborating on that is the decision to re-write Farm Training Centre curriculum. This did not come from me, it came from the present Provincial Director of Agriculture and his team.

CHAIRMAN: There is obviously a general feeling that the design of Dr. Ascroft's research itself is a very creditable effort and that Dr. Ascroft, should go ahead and if possible we should include more dimensions into his study. Now the question, should everyone get equal opportunity.

SMITH: If the Government is well intentioned then they should spend more time making sure there is an equal opportunity for everyone in the sense that services and inputs are made equally available.

CRAWFORD: The trouble is that the progressive farmers are the more vocal ones and if Government service does not know what the range of possible policies is and he has one group of the public telling him what to do, it is going to be natural for him to take that course and that is why I suggested that if we had more research into what kinds of policies benefit small farmers that are being overlooked by the Government it would be a great help.

MUTISO: If you argue that you do not do advocative research you can get where you are saying you should let Government get to. It is a very phoney issue. What is Government's attitude towards this kind of research?

This question of equal opportunity should be that of increased productivity and this is quite crucial at this stage of our development. Therefore it seems to me that we will probably have to concentrate on the people that are willing and have come forward to participate in this type of activity rather than spending a lot of time trying to persuade the other side who have not quite understood the whole thing and therefore are not participating. This is particularly so since the idea is really not just to push
people around but to instill something in the people so that they want
to help themselves and thus move on. On the question of policies, I
have the feeling that the Government policies have been quite flexible
as far as this is concerned to enable them to incorporate some of the
things that we have said.

ROLLING: It cannot be a question of supporting one group or the other,
we have to think of getting means for supporting the less developed
groups, but we cannot slaughter the cow, we have to milk some parts
of the economy to do fruitful work on the part of the laggards. This
is a very political question but it is the question we have to find an
answer to.

KURIA: I think the challenge to that must rest with academics and
economists in the Government, in that I think they should come out with
concrete ideas on how, in fact, the less favoured members of the
community can be assisted in the framework of the present policy we seem
to be advocating. It might be better to introduce labour intensive poli-
cies, etc. and any types of policies which would have the net effect
of increasing the net income without reducing the income of the
favoured. This would be more fruitful than criticising the present
policies.

I would rather put it this way, I think you would need a
social ideology that defines the kind of things we are trying to put
forward here, so I would think this is more a question of social
ideology than a question of economics.

CHAIRMAN: Now question five, are we satisfied with landlessness as a
natural conclusion of economic development.

ROLLING: All these questions are running round the same thing. We
know that at this point there is no alternative employment. It is
very difficult to avoid the question. I think there is a clear
answer: you cannot have landless people without having alternative
employment for them.

Unless there is a specific land policy which will be tied
up with the ideological orientation of the country it seems to me all
these extension services we are giving in the name of rural development
are not going to get us anywhere. The land issue is at the heart of
the whole matter of rural transformation not only in Kenya but in
all developing countries.

CHAIRMAN: So you are construing it as a major context? We must have
one base for understanding when we are talking about land policies.

WINDLER: Is there really a land shortage or a shortage of skill
in the parts of the country which are not, from an agricultural
point of view, as good as other parts? Would it not be good to have an
inventory of which facilities are in other parts of the country which
are not as good as other parts.
SMITH: Essentially land is just one of many factors and it seems to me that its use is being distorted by lack of access to other inputs. It seems to me that the people with the least land get the least chance to use any of the other inputs with the result that they do not get the income or suitable opportunity of living from that land. They therefore have to opt out of that system altogether. From this hypothesis you might argue that if you give people a chance to get hold of these other inputs you would not have a land problem.

MUTISO: If people see land as one of those things which they must have, and if also there is vacant land, then opportunities for land are there. We need a policy from the Government on this apart from the economics of land as such.

HOPKINS: Looked at from the point of view of welfare, the point made by Mr. Smith is vital. Those who are losing their land are usually those with the least access to other factors of production, such as capital and innovative skills. They need most help with the techniques of production - especially with simpler methods: and yet the researches seem to indicate that they get least help from the extension services.

CHAIRMAN: This issue seems to revolve around technology and I understand it is going to be discussed in connection with the water development policy.

SMITH: If we were able to do research in the area of land policy it might be possible to discuss the problems of moving people from the populated areas to the less populated areas. This would open up a very wide field which I think we could contribute to.

? We must realise the constraints of technology that we find ourselves in, we should have a policy which at least gives us a better position to plan as far as the land use if concerned. This is a key issue and underlines the development of our country.

CHAIRMAN: We agree that this is an area of which we need more research. This is an area which is extremely interesting and an area needing much research. Now, have we identified all the bottlenecks?

ASCROFT: This question absolutely requires shelving because we will answer it when everyone has presented their Papers.

CHAIRMAN: So let us deal with the last two questions, what kind of leadership studies we need and what kind of priority they should be given and do we have a theory of development.

MUTISO: There has been a tendency for the studies which have been done on the political life of Kenya to be centre orientated. One of the basic problems is that we do not have an inventory anywhere about the social and political life of the rural areas and the area of priority in terms of leadership is really the process at the local level. We know so very little about it.
ASCROFT: We have data on people holding elected offices in organizations like Kando, Kaendeleo ya Wanawake and so on, and we would pass it on to somebody who wants to study this form of leadership. What use can be made of local leaders should be one of the questions studied.

ROLLING: What you are really saying is that you want to study leaders.

CHAIRMAN: The final question which is very amenable to shelving is the theory of development and what we really are asking Ascroft to do is briefly to expound on his interpretation of the systems approach to rural development. We have noticed a lot of criticism and we might say that the question I am asking you is if Ascroft's approach is one we might consider later on.

ASCROFT: My paper will be available on Wednesday evening.

CHAIRMAN: Then we will work on that document. Now let us adjourn for Madaraka Day which will give us time to study these papers.
SESSION 3 June 2nd 9 a.m. - 11 a.m.

THEME "Agricultural and Economic Aspects of Rural Welfare"

CHAIRMAN H. Mule

BACKGROUND PAPERS

5. Land Use and Labour Productivity under Growing Land Shortage: E. Baum.
AGRICULTURAL POLICY AND THE IMPROVEMENT OF RURAL WELFARE

Lawrence D. Smith
Institute for Development Studies
University of Nairobi

INTRODUCTION

This paper is concerned with two aspects of rural welfare only, namely the amount of real income available to the rural population and the way this income, or purchasing power, is distributed amongst the rural population. The paper’s main focus is on how agricultural policy can influence income generation and distribution, and whilst discussing this issue it is hoped that some topics where research could usefully be carried out will be identified. Income generation and income redistribution in the rural sector are examined separately and then some of the relationships between rural sector and the urban sector are considered. It is however obvious that in practice all these issues interact and one has to bear this in mind when formulating agricultural policies.

AGRICULTURAL POLICY AND INCOME GENERATION IN THE RURAL SECTOR

Turning first to income generation in the rural sector, it would appear the agricultural policy can influence several separate parameters which in turn can interact with each other to affect the net income accruing to the rural sector from agriculture. These parameters are the farm-gate prices paid for agricultural produce, the structure of farming, the resources available to the agricultural sector and the cost of inputs purchased from outside the rural sector. It will be useful to examine each of the parameters in turn, together with the interactions between them.


2. These are the same parameters which with probably affect the level of agricultural employment see G.D. Gwyer (1971) Agricultural employment: a research proposal. IDS Staff Paper No.99.
The Farm-gate Price for Agricultural Products

There are at the moment a wide variety of pricing policies being practised in Kenya. Commodities can be broadly separated into those where price is allowed to find its own level through the interaction of supply and demand, and those where the price is influenced, directly or indirectly, by Government actions. Superimposed on this general distinction, one must also consider the actions of marketing boards, cooperative unions and societies, private middlemen and county councils all of whom can influence the price which the producer receives for the agricultural commodities which he produces. It is of vital importance that all the factors affecting the farm-gate price for agricultural products are kept under continuous surveillance because in a relatively market-oriented economy such as the Kenya one, price has a crucial role to play in influencing production decisions.

There is now little doubt that the overall level of agricultural output responds positively to increases in the real price of agricultural products. This increase occurs both at the extensive margin by making it economically worthwhile to use resources such as land and labour which would otherwise remain unused, and also at the intensive margin by encouraging more intensive agricultural production and acting as a positive incentive to the adoption of improved technologies.

The relative prices of agricultural products also play a key role in influencing agriculture's output mix, and the output of a commodity can be influenced considerably by the prices being paid for other commodities compared with the price for that commodity.

Whilst we can make general statements that output will respond positively to price, there is a remarkable lack of quantitative information regarding supply responses in East Africa which can create serious problems in forecasting output and the level of agricultural exports and imports of commodities such as maize, wheat, pyrethrum etc.

How then should the pricing system be influenced by agricultural policy in order to increase the income accruing to the agricultural sector? First, providing agriculture is subject to the influences of world market conditions, we can argue that the overall level of prices should be made as high as is consistent with market conditions by reducing marketing costs to the lowest level consistent with meeting the requirements of the purchasers. Marketing 'costs' in Kenya have also been increased by cesses levied on marketed products by county councils and by spurious 'stabilisation' funds operated by marketing boards etc. and the existence of such charges warrants careful examination. But to what extent should one go further and 'subsidise' the prices of agricultural products in an attempt to raise agricultural incomes still further? Here the issues become less clear because so many forms of price subsidy create implicit or explicit income redistribution effects and the effects on overall economic welfare then become indeterminate. Let us take some examples to illustrate this. Let us suppose that it is Government policy to raise the prices of all agricultural products by, say, 20 percent above their equilibrium price in order to increase rural incomes. First, what is meant by 'all agricultural products'? Does it mean only those commodities which are marketed through statutory boards or other centralised systems, or does it include items which at the moment are either marketed privately e.g. eggs, vegetables, potatoes etc. or are consumed on the farm? If the former definition is used it would probably include no more than one-third of total agricultural production. Moreover, this subsidy system would be biased toward the 'elite' of farmers who are producing cash crops, and who are probably in the upper income strata of the rural population. Of course, one effect of influencing relative prices in this manner is that farmers would move, wherever possible, to the production of centrally marketed commodities. The resulting reduction in the production of free market commodities would probably lead to a price rise, hence at least partially redressing the balance, but the net effect is indeterminate.
Second, who would finance the subsidy? For commodities which are wholly, or almost wholly exported, the subsidy would presumably have to be financed by the Central Government. However, for commodities which are consumed entirely in Kenya, or where only a portion is exported, there will be a strong temptation to finance the subsidy through consumers. There are several drawbacks to this method. The unionised urban wage sector may seek to recoup this food tax through a rise in wages, which besides having the possible effect of making exports from the manufacturing sector less competitive on world markets (and imports more attractive to Kenyan consumers) could be passed back to the rural sector through increased prices for commodities purchased from the urban sector i.e. there would be a partial reversal of the favourable terms of trade vis-a-vis the urban sector created for the rural sector by the initial subsidy, and the increase in real purchasing power would not be as great as intended. The food tax could also affect the average level of remittances from urban workers to the rural sector, especially if demands for wage increases were resisted. Furthermore, the experience of food taxes in Kenya suggest that they are highly regressive 4 with the greatest incidence on the poorest people who spend the largest proportion of their income on food. 5

4. This system has traditionally been used for both wheat and maize in Kenya.

5. It is interesting to note that COTU, whilst recognizing the need to raise the prices small holders receive, do not want these passed on to low income urban dwellers in the form of higher food prices. See East African Standard 19 May, 1971.

6. This can also be criticised in terms of social injustice as these people are frequently those who have been forced to migrate to urban areas because of lack of earning ability in the rural sector.
Third, one must consider whether one is concerned solely with rural welfare, or whether the prime objective is overall national welfare because it is patently obvious that not everyone in the rural sector is poorer than everyone in the urban sector.

For all these reasons it is therefore extremely debatable whether one should attempt to use distortions in a price system which is geared to optimizing the contribution of agriculture to GDP in order to raise rural incomes. 7

Nevertheless, there are two areas in which a form of subsidy might be justified. Because of the peculiar pricing system used by the E.A. Railways Corporation, most goods being railed from Nairobi to Mombasa i.e. for export, are charged substantially more than the true (marginal) cost of freighting them. At the moment, farmers are essentially subsidizing the railways when exporting goods. This subsidy could be transferred to the Central Government. On the other hand it would appear that agricultural inputs imported into Kenya and railed from Mombasa to Nairobi are currently subsidised by other freight carried by the railways hence disguising the true cost of using some imported agricultural inputs.

There might also be a case for abandoning the wide variety of transport pool arrangements used by various statutory boards and marketing agencies and instead introducing a general transport subsidy for those remote areas on the extensive margin of agricultural output would be expected to exceed the cost of the subsidy when both are measured in social values.

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The Level of Agricultural Technology

It is undoubtedly true that one of the main factors affecting the level of technology used in agriculture is the absolute and relative farm-gate prices paid for agricultural products. The overall level of technology in the agricultural sector is however also governed by the present state of available knowledge in the country, the efficiency with which this knowledge is transmitted to the farming community and farmers' receptivity to this knowledge. The whole question of the efficiency of the research and extension services, the problems of evaluating their contribution to rural welfare, and the way they order their overall priorities is too large to be discussed here. It is however an extremely important field and some policy guidelines could probably be developed now from a consolidation of the available material. Such a review would also provide a useful basis for further research endeavours in this field.


The Structure of Farming

The structure of farming could also have important implications for the level of agricultural output and hence incomes for the agricultural sector. If there is an imperfect land market which prevents land being traded freely and openly amongst informed buyers and sellers there is a strong possibility that it is not allocated in a manner which will maximise agricultural output. Until now the operation of the land market in Kenya has been a relatively neglected area of research. There is of course a possibility that maximising agricultural output through land redistribution will have a significant effect on income distribution. This could have important policy implications but to date this is an unexplored issue in Kenya.

The Availability of Resources to the Agricultural Sector

There are two aspects of the availability of resources to the agricultural sector which have important implications for the level of agricultural output and which can be considered as facets of agricultural policy. First there is the whole question of the amount of Government investment in the rural sector, the form this should take, and its effect on rural welfare. Related to this, but frequently neglected, is the relative levels of investments in the rural and the urban sector. It is an interesting thought that in the long run overall economic welfare (both rural and urban) might be increased by a more positive approach to urbanisation and an even higher level of investment in urban areas than occurs now.

Second, there is the role that the Government can play in increasing the availability of resources to the agricultural sector. Thus it can provide improved access to credit, purchased inputs such as


I am indebted to my colleague George E. Johnson for perpetually reminding me of this point.
as fertilisers, insecticides etc. It might also conceivably improve the mobility and information systems in the seasonal labour market in the agricultural sector.

The Cost of Agricultural Inputs

Related to the problem of the physical availability of resources to the agricultural sector is the cost of inputs purchased from outside the agricultural sector. If one is concerned solely with maximising agricultural incomes then it would appear obvious that inputs should be used in a combination, and up to that point, where marginal revenue equals marginal cost. There would appear to be no case for either subsidising or taxing inputs under these conditions. There may be a case for using a temporary subsidy on an input to accelerate the acceptance of a new technology as a form of learning device. Taxes on inputs are also sometimes advocated if they appear to be 'unduly labour displacing', but this topic needs very careful analysis in conditions such as Kenya's where climatic conditions cause marked seasonal peaks in labour requirements which may be relieved by the use of mechanisation services, weedkillers etc.

Indeed, this problem of capital-labour substitution is probably more a function of farm size than any other single variable. There are three factors supporting this contention. First, purchased inputs such as mechanisation are characterised by economies of scale which makes their use attractive on large scale farms. Second, large farmers have to supply housing and other benefits for their workers which the small farmer can avoid. Third, a high level of managerial ability is needed to supervise a permanently large labour force and many farmers prefer labour saving inputs such as mechanisation to avoid this management problem.

12. Several suggestions relating to this are in the Report of the Working Party on the Cost of Agricultural Inputs (Chairman: Sir Wilfred Havelock) of which the author was a member.

13. This intriguing suggestion is made by G.D. Gwyer and G. Ruigu (1971) Agricultural employment in selected areas of Kenya: some preliminary findings presented at this workshop.


Turning now to income redistribution, we find that Sessional Paper No. 10 of 1965 on "African Socialism and its Application to Planning" states that two objectives of Government policy in Kenya are 'equal opportunities for advancement' and 'high and growing per capita incomes, equitably distributed among the population'. The Sessional Paper suggests that the weights attached to these two objectives (among others) are unspecified and may change over time. It is also suggested that the main policy instruments for achieving income equality will be progressive income taxes, capital gains tax and death duties. These will therefore be assumed in this discussion and attention will be focused on other possible methods of achieving these objectives.

Pricing Policies

One interesting feature of Kenya's agricultural pricing policy in the past has been the indirect, and to some extent unintentional effect it has had on income redistribution. Thus we find that in 1969 a sum in excess of £K650,000 was transferred from consumers of wheat in Kenya to producers of wheat, 60 per cent of which accrued to 400 large scale farmers, whilst at the same time beef producers have been subsidising domestic urban consumers.16

Although the use of product pricing as a means of redistributing income initially sounds attractive, it is extremely difficult to find commodities where one could unambiguously select one group of people to assist without both affecting people outside this group and also causing a resource allocation distortion. For instance, if the producer price of maize is set well above its equilibrium level in order to assist small farmers, a considerable income transfer will occur to large scale farmers as well. It will also encourage farmers to move out of competing commodities such as wheat and beef into maize production. At the same time, an artificially inflated maize price will increase the cost of feeding stuffs and effectively shift the supply curve for intensively fed livestock to the left.

considered too low even with the use of modern technology. In this event there might be a case for introducing policy measures to achieve a redistribution of land. Several measures might be considered suitable for this purpose.

The most obvious is the introduction of a land tax based on the productive potential of land, and preferably progressive with respect to area. As land registration in Kenya, especially in the high potential areas nears completion such a policy becomes increasingly feasible. A land tax should cause a measure of land redistribution because at the moment the land area available to many farmers is not optimal (with respect to maximum output per acre) in relation to the other resources currently available to the farmer. The imposition of a land tax, especially if progressive with respect to area, would cause many farmers to choose to farm a smaller area of land more intensively, especially as the disposal of some land would lower both the marginal and average rates of tax. Furthermore, for a variety of reasons, many people with regular urban employment are reluctant to dispose of their land but equally have no great incentive at the moment to ensure that it is productively used. A land tax would probably heighten the incentive to either sell or lease the land, thus making it available to other users.

A land tax has a further advantage in that it would appear to be more equitable than either the present graduated personal tax or the cesses levied on agricultural produce by County Councils etc.

There is also a case for adopting an even more active policy towards land redistribution through resettlement. It has been argued that a strong case can be made on economic grounds for subdividing many of the farms on high potential land in the farm areas, especially those which are mismanaged, and creating low cost settlement schemes in their place. Similar schemes could be developed on much of the medium to high potential land area which is presently being grossly under-utilised owing to the absence of a free market in land and ethnic barriers to migration.

Spatial inequalities of Opportunity

Not only can there be unequal opportunities on a farm size basis, but these can occur on a spatial basis as well. Thus the ability of farmers in different areas to produce certain commodities can often be influenced by the level of infrastructure provided by the government. For instance, milk production may be hampered by the absence of milk cooling plants, poor roads, the lack of a local A.I. service etc. Similarly tea production is dependent on the very close proximity of a regular leaf collection service to the farm. The provision of water and electricity also have similar effects on the types of opportunities open to farmers.

THE NON-AGRICULTURAL SECTOR AND RURAL INCOMES

Whilst this paper's main focus has been agricultural policy it must be stressed that rural incomes must be considered within the framework of the whole economy. Thus in a thorough analysis it would be useful to separate the amount of income generated in the agricultural and the non-agricultural rural sector which accrues to the rural population, and the amount of income generated in the urban sector which is transferred to people living in rural areas. In this way one could begin to examine the linkages which exist between the various sectors of

the economy and the influence these can have on both the level of rural income and its distribution.

For example, the size of the urban sector will obviously have an effect on the value of cash sales of food from the rural sector. It is very difficult to get a precise estimate for the farm but it is unlikely to be less than 15 percent of the urban wage bill which would imply a value of £21m. in 1969. To this should be added the farm-gate value of food consumed by people living in the urban areas but not counted in the 'urban wage bill', which would probably bring the minimum farm-gate value of food consumed by the urban sector to around £25m. in 1969. Thus the urban demand for food represented nearly 17 percent of agriculture's total contribution to G.D.P. in 1969.

Now if it is accepted that the urban population is growing at 6 per cent per annum, one should expect at least a similar increase in the urban demand for food. Indeed, it should be higher than this if urban per capita incomes are rising as it has been estimated that the income elasticity of the farm-gate value of foodstuffs was around 0.6 in 1962. Thus the present direct influence of urbanisation is to increase the urban demand for marketed agricultural products by at least £1.5m. per annum.

It is also important to evaluate the massive flow of remittances from the urban to the rural sector. Preliminary evidence from the Nairobi Urban Study suggests that the average remittance from urban workers to the rural sector is around 20 per cent of incomes. If this percentage applies to


22. Private communication George E. Johnson, Institute for Development Studies.
the whole of the urban wage bill of around £150m. in 1969 this
would suggest that as much as £30m. is remitted from the urban
to the rural sector annually. However, as the likely level of
output of these workers had they remained in the rural sector
is not known, we cannot estimate the net effect of urban
employment on rural incomes.

The existence of links of this type suggests that
perhaps more attention should be paid to the influence of
urbanisation on rural welfare - there is always the
possibility that a positive policy of urbanisation could
in fact improve the level of welfare of those remaining in
the rural areas.
INTRODUCTION

The theme of this paper is agricultural employment creation which is an important component of any strategy for improving rural welfare in Kenya. Our paper is essentially a progress report, in that we have recently embarked on the first phase of a multi-objective research project under the general head of agricultural employment, and we are taking the opportunity of this workshop to present preliminary ideas and results for discussion.

The specific objectives of this phase of our research project are to obtain information about the relative magnitudes of the unemployment and underemployment problems in different agricultural areas; to relate these to the agricultural resources and structures of each area, and to gain understanding of the nature and workings of the agricultural labour market. We feel that more needs to be known about these aspects, both for the appropriate location and phasing of employment creating projects, and because with greater knowledge about seasonal underemployment of labour in different areas and of the present agricultural labour market, it may be possible to link peaks with troughs and promote short-term movements of labour from one area to another.

We have started by studying the situation in three SRDP areas: Tetu, Mbere and Vihiga. We chose these areas because of their SRDP status which meant two things: an introduction to the area through the good offices of the I.D.S. area evaluator, and better than....


2. Our thanks are due to Mugo Gachuhi, David Brokensha, Nilam Bedi, and Peter and Joyce Mook for helping us gain improved understanding of the agricultural employment situation in the field.
average information about the agriculture of the division. It was
apparent too that the three areas are, in an SRDP sense, representative
of other areas in the country, and are sufficiently dissimilar from
each other in their basic agriculture that it seemed likely their
employment situations would differ also.

We have been especially fortunate in beginning this study
at a time when the Ascroft and Ascroft-Moock farm survey data are
being processed and we are very grateful to them for allowing us
access to this information which forms the main quantitative base
of this paper.

There are four sections to this paper: in the first we
use the Ascroft and Ascroft-Moock data to give a general idea of
the structure of employment in the two areas in relation to the
agricultural base, and raise certain questions about the functioning
of the labour market. Second, we present a simple model of the
agricultural labour market, emphasising the seasonality of labour
demand in relation to employment of family and hired labour.
Third, we emphasise the need for agricultural labour use profiles.
Lastly, we consider different methods of building up the labour
profiles for an agricultural district. Throughout we have attempted
to relate quantitative information to the qualitative impressions
we obtained from brief visits to each division, and Appendices
A, B, and C record some of the informal interviews we had in these
areas with farmers, unemployed persons, agricultural workers and
agricultural extension staff.

DIFFERENCES IN AGRICULTURAL LABOUR USE: VIHIGA AND TETU

The mainstay of this paper is the data collected by Ascroft
for Tetu, and Moock and Ascroft for Vihiga, which provide a
basis for relating agricultural employment to the underlying
agricultural situation in terms of cropping patterns, and also
by comparison between the districts, to farm size and population
density. Some of the important differences in the basic agricultural
situations of these two areas are recorded in Table 1. One striking
difference is that farm size in Tetu is almost double that in Vihiga,
a reflection of the different population densities (538 per sq. km.
in Vihiga, and 291 per sq. km. in Tetu, according to the 1969
Population census). Perhaps surprisingly, the apparent outmigration
TABLE 1: COMPARISON OF AGRICULTURE IN VIHIGA AND TETU DIVISIONS

<table>
<thead>
<tr>
<th></th>
<th>VIHIGA</th>
<th>TETU</th>
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<tbody>
<tr>
<td>Number of farms in sample</td>
<td>386</td>
<td>326</td>
</tr>
<tr>
<td>Average farm size</td>
<td>3.49 acres</td>
<td>6.21 acres</td>
</tr>
</tbody>
</table>

A. Percentage of farms growing:

(i) Hybrid maize: 59% vs. 31%
(ii) Coffee: 16% vs. 43%
(iii) Tea: 4% vs. 11%
(iv) Macadamia nuts: 0% vs. 21%
(v) Certified potatoes: 9% vs. 3%
(vi) Groundnuts: 15% vs. 0%
(vii) Pyrethrum: 0% vs. 13%

B. Percentage of farms keeping:

(i) Grade cows: - vs. 49%
(ii) Pigs: 0% vs. 20%

Sources: Ascroft Tetu Data, Moock and Ascroft Vihiga data.

Rates for the two areas suggest that outmigration from Tetu, with its lower population growth rate and lower population density, is slightly greater in percentage terms than from Vihiga (Table 2). Table 1 also shows that cash cropping is more pronounced in Tetu. Both coffee and tea, as perennial cash crops, are likely to entail higher opportunity costs on small farms than on large farms, when a certain minimum acreage has to be allocated to food crops. The rapid spread of hybrid maize in Vihiga, which reduces the acreage needed for the food crop through higher yields, will likely pave the way for perennial cash crops like tea.

Table 3 summarises the agricultural employment situation in the two areas, in terms of the percentage of farms employing different number of workers in six categories. The major differences between the two areas are that Vihiga farms employ less full-time and part-time family members than Tetu, while Tetu farms employ more full-time hired workers.
In seeking to relate these differences in employment to the two agricultures we may note that the demand for agricultural labour, both family and hired, depends on agricultural productivity, itself a function of the crop mix, and the levels of material inputs. Because Tetu agriculture is more advanced in both these respects, one would expect the labour absorptive capacity of Tetu agriculture to be higher than Vihiga for given farm size.

TABLE 2: APPARENT OUTMIGRATION BY LOCATION: VIHIGA, TETU, AND MBERE

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<tbody>
<tr>
<td></td>
<td>A.O.M. as % of adult males</td>
<td>A.O.M. as % of adult male</td>
<td>growth 1962-69</td>
<td>density 1969</td>
<td></td>
</tr>
<tr>
<td>Bumyore</td>
<td>4200</td>
<td>27</td>
<td>4463</td>
<td>19</td>
<td>4.9</td>
</tr>
<tr>
<td>N Maragoli</td>
<td>3127</td>
<td>25</td>
<td>3895</td>
<td>23</td>
<td>2.6</td>
</tr>
<tr>
<td>S Maragoli</td>
<td>1799</td>
<td>21</td>
<td>2684</td>
<td>22</td>
<td>3.1</td>
</tr>
<tr>
<td>Tiriki</td>
<td>1462</td>
<td>16</td>
<td>1846</td>
<td>13</td>
<td>3.9</td>
</tr>
<tr>
<td>Muyang a</td>
<td>695</td>
<td>8</td>
<td>648</td>
<td>12</td>
<td>...</td>
</tr>
<tr>
<td>Vihiga</td>
<td>11283</td>
<td>22</td>
<td>13336</td>
<td>19</td>
<td>3.2</td>
</tr>
<tr>
<td>Aguthi</td>
<td>1401</td>
<td>23</td>
<td>1610</td>
<td>23</td>
<td>3.1</td>
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<tr>
<td>Thig ingi</td>
<td>1359</td>
<td>24</td>
<td>1781</td>
<td>27</td>
<td>2.8</td>
</tr>
<tr>
<td>Tetu</td>
<td>1353</td>
<td>28</td>
<td>1136</td>
<td>24</td>
<td>...</td>
</tr>
<tr>
<td>Muhoya</td>
<td>690</td>
<td>21</td>
<td>1082</td>
<td>26</td>
<td>2.5</td>
</tr>
<tr>
<td>Tetu</td>
<td>4803</td>
<td>24</td>
<td>5808</td>
<td>25</td>
<td>2.0</td>
</tr>
<tr>
<td>Nyamur a</td>
<td>1275</td>
<td>29</td>
<td>1052</td>
<td>22</td>
<td>1.8</td>
</tr>
<tr>
<td>Mba a</td>
<td>516</td>
<td>20</td>
<td>629</td>
<td>21</td>
<td>2.8</td>
</tr>
<tr>
<td>Evu oro</td>
<td>1095</td>
<td>29</td>
<td>1100</td>
<td>24</td>
<td>3.1</td>
</tr>
<tr>
<td>Mb e- v</td>
<td>...</td>
<td>...</td>
<td>241</td>
<td>6</td>
<td>...</td>
</tr>
<tr>
<td>(MBere)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: the 1962 and 1969 censuses
d. A.O.M. (apparent outmigration) refer to outmigration of adult males (over 16), calculated as the difference between estimated adult males originating in the division, and actual males resident in the division at the time of the census. Estimated males originating in the division was calculated by applying the national male/female ratio to the number of female adults resident in the division.
However the actual situation as shown in Table 4 indicates that the effect of increasing intensity of production with declining farm size gives Vihiga the edge in labour absorptive capacity, albeit at lower per capita farm income.

The relative inputs of full-time versus part-time versus casual labour (both family and hired) are a reflection of the types of crops grown with their varying monthly labour requirements, as is discussed in more detail below. For a given labour profile one may conceive of two polar situations with respect to the use of hired versus family labour: the first, where family labour is fully employed the year round, and hired labour at peak periods; the second, where family labour is underemployed except at peak times, and does not employ outside labour. An impression is that Vihiga, with low farm incomes and small farm size tends towards the first polar situation (note from Table 3 the higher percentage of farms in Vihiga with no fulltime or part time family labour input), while Tetu approximates to the second, with farm size and incomes sufficiently high for family members to live off the farm even though their contribution to farm output is zero for much of the year. An important policy distinction is that in one case under-employment is hidden on the farms, while in the other, under-employment is conspicuous and manifested by landless people living in villages. Intermediate situations exist where hiring of labour occurs but the agricultural workers have small farms of their own, typically of half the size or less of the employing farmers.

Differences between the use of hired versus family labour are related to the distribution of farm income through the year, as well as its level, because of credit constraints. Thus in the absence of off-farm income, cash crop production is necessary for employment of hired labour, while the employment of full-time hired labour may require a crop that provides cash income through the year. These sorts of consideration may help explain the observed differences in employment of full-time hired labour in Tetu and Vihiga.
Average farm size in sample: VIHIGA 3.49 acres, TETU 6.21 acres
No of farms in sample: VIHIGA 386, TETU 326

<table>
<thead>
<tr>
<th>LABOUR INPUTS (DAYS)</th>
<th>PER FARM</th>
<th>PER ACRE</th>
<th>PER FARM</th>
<th>PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time family</td>
<td>860</td>
<td>140</td>
<td>678</td>
<td>104</td>
</tr>
<tr>
<td>Part-time family</td>
<td>167</td>
<td>48</td>
<td>336</td>
<td>54</td>
</tr>
<tr>
<td>Seasonal family</td>
<td>29</td>
<td>8</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>B Hired</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>96</td>
<td>10</td>
<td>65</td>
<td>10</td>
</tr>
<tr>
<td>Part-time</td>
<td>64</td>
<td>18</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>Seasonal</td>
<td>123</td>
<td>20</td>
<td>146</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>907</td>
<td>240</td>
<td>718</td>
<td>224</td>
</tr>
</tbody>
</table>

Source: Ascroft and Ascroft-Moork surveys

Labour inputs are in mandays, and have been converted by assuming that full-time workers work 260 days a year, part-time workers work 130 days a year, and seasonal labor work 50 days a year.

A paradoxical feature of Vihiga agriculture that impressed us was, and which was confirmed from calculations of Moerk is that despite the high population density, small farm size and open unemployment, there are many shambas that have uncultivated land (Appendix G, p.4). Similarly in Mbere, where land is abundant, albeit of medium potential, many small farmers coexist with larger farmers who employ them seasonally. Why don't these small farmers expand their land area in the slack season, so that they too become 'large' farmers? A frequent reply to a similar question "why do you not hire more cultivated land?", in both Mbere and Vihiga was, "I have no money". One farmer in Vihiga asked whether we could help him get a loan to clear land. The possibility of bolstering both agricultural production and employment in these areas through land clearing-creating loans appears worthy of further investigation.

A SIMPLIFIED MODEL OF THE AGRICULTURAL LABOUR MARKET

An attempt to illustrate the nature of the agricultural market emphasizing the effects of seasonality of demand is given in Figure 1, where the diagram of the top left represents a stylized
Figure 1. The Seasonality of Agricultural Labour Markets.

(a) 

(b)
A typical labour profile for an agricultural district, with a boundary corresponding to levels of labour use such that \( MP = 0 \), and the lower diagram (b) is a complementary representation of the labour market for the same district; the lines originating at point A representing alternative demand curves for labour, and the curve MBQS the supply curve of wage labour in the district. The total amount of labour available each month from the people living in the district is \( Q \). Total district labour is composed of non-wage resident farm family labour \( QF \) and landless wage labour \( QW \).

In the slack month the demand for labour is given by \( A \) and farm family labour is employed to the point \( OP \) such that \( PM \) of farm family labour is unemployed. We assume that farm family labour works up to the point where \( MP = 0 \) and receives average product as its reward. In the slack month all landless wage labour is unemployed. In normal months, the demand for labour is given by \( AN \) and family labour is fully employed up to the point \( M \), where \( MP = 0 \), and again landless wage labour is unemployed.

In the peak month let us assume first that the demand curve for labour is given by \( AZ \) of Figure 1(b) corresponding to the situation depicted in Figure 1(a). Then family labour will be fully employed and all of wage labour will be employed at the going agricultural wage rate of \( OW \) equal to its marginal product leaving landless labour unemployed even at peak months. The question arises why \( 17 \) of landless wage labour should not be prepared to work at less than the wage rate \( OW \). Two points may be noted. First, in a long term situation, work opportunities of seasonal nature may exist outside the district in say, estate agriculture. Hence \( AZ \) is not that wage levels below \( OW \) are not sufficient to attract the migration costs associated with out-of-district employment, and tribal constraints preclude permanent movement to the urban areas. Second, from a short term standpoint, we found evidence in all three districts that agricultural wage rates seem resistant to downward pressures. This was particularly noticeable where it was to be expected that the effects of the harvest might have shifted the demand curve for labour to the right (owing to reduction in farm income) and the supply curve to the left (owing to increased need for cash to buy food). Yet we consistently received negative replies to the question...
"Are wage levels lower this year than last?", and at the same time we were told that it was especially difficult to find work this year because of the drought (see Appendix B 1). If some theoretical interest in the situation just depicted of unemployment among agricultural labour even at peak months, Type A, is the possibility of it being converted to one of full employment in peak months by redistribution of land, if we assume the labour input per acre is neutral to size of farm.

This may be contrasted with a Type B situation corresponding to a demand for labour in the peak month that intersects the CE axis to the left of Z, say L. Here it is apparent that no amount of land redistribution will provide employment for peak times unless there is an associated change in crop mix which increases labour input per acre as farm size declines. Clearly if demand curve AL represents labour demand in normal (rather than a crop failure) year, landless labour must rely on out-of-district employment as their chief income source.

Type C is an equilibrium situation in the sense that the demand curve for labour AQ intersects the supply curve at the point where all landless labour is employed in the peak month, and hence does not migrate out of the district looking for work in peak months.

Type D, corresponding to demand curve AD, is a situation where not only does agriculture provide full employment for labour in the peak month, but will attract seasonal labour from outside the district, if market information spreads, in the same way. If such outside labour is not available, wage rates will rise above OW.

THE NEED FOR DISTRICT LABOUR USE PROFILES

The foregoing section shows that basic to any understanding of the agricultural labour market in a given area is knowledge of the aggregate labour use profile, as it is this profile in conjunction with available labour which determines the extent of employment and underemployment in a particular agricultural area.

There are difficulties both conceptual and of measurement.

An explanation of this apparent stickiness in agricultural wages may be that real wages do in fact decline because food prices are higher following famine.
ment in calculating in absolute terms the extent of unemployment in agriculture by the method implied above, and these have been reviewed in the literature. Our purpose in this research investigation is less ambitious in that (i) we want to compare agricultural districts with respect to their unemployment problems, so that policy makers may know where to locate projects aimed at having most effect on the overall unemployment situation, and (ii) we want to compare aggregate labour profiles for districts with a view to determining either formally, using a linear programming transportation model, or informally, the possibilities for seasonal short term migration of labour from a trough in one district to peak in another. In this paper we are mainly concerned with this second objective.

The distribution of rainfall in Kenya which gives rise to disparate crop calendars among districts, suggests that the potential for labour movements of this type is large. On the other hand, there are various indicators that the actual movement of labour between agricultural areas is small. One example of this is the difficulty that coffee estates in Central Province experience in obtaining labour for coffee harvesting. Another is a report in the East African Standard of 16th April 1971 of Mr. Githuki observing in Nyeri District that small farmers are running into serious labour peaks with the coincidence of tea plucking and coffee picking.

A third use of the labour profile for an agricultural area may be noted. This use occurs when a new employment generating activity capable of seasonal phasing is introduced into an agricultural area. Thus in Mwea the building of rice roads adversely affected the supply of labour for planting rice (Appendix A.6) when this activity could have been phased into the agricultural calendar. The lessons of experience of Mwea will hopefully be applied in the rest of Mbere division, where rice roads are to be constructed using labour intensive methods under the guidance of the NORAD Eastern Province Planning Team. See Average Monthly and Annual Rainfall Maps of East Africa, E. Tomsett, Meteorological Department, East African Community, Nairobi, September 1969.
We found evidence in our visits to the three areas that short term movements of labour between agricultural areas are occurring, but an impression gained is that lack of market information, transport costs, and problems of accommodation are limiting the flows. Thus in Tetu we learnt that people from the Valley seek short term employment as herdsmen and as coffee pickers, but that underemployed landless labour in Tetu are not finding or seeking agricultural employment outside the division (Appendix A; 2, 3, and 4). In Mbere we found that Kambas who had experienced drought in Machakos were looking for temporary work weeding, despite the fact that Mbere had experienced a similar drought, and the local people were finding it difficult to get employment. One Kamba we interviewed said that he came to Mbere because it was within walking distance, and he could not afford the fare to Nyeri (Appendix B; 1, 6, 7). In Vihiga we found little evidence of outmigration for seasonal agricultural work, despite the severe unemployment problem, and the possibilities of seasonal employment in tea and coffee production within a 75 mile radius. (Appendix C; 2, 3). Thus there seems to be a prima facie case for active promotion of seasonal movements of labour through the provision of market information, subsidized transport, and housing facilities in important 'peak' areas.

Given, then that the construction of aggregate labour profiles for the important agricultural areas of Kenya is likely to be a fruitful exercise in gaining knowledge of the unemployment situation in rural areas and suggesting ways in which it can be alleviated, we turn now to methods by which such profiles may be estimated.

TRADITIONAL METHODS OF ESTIMATING AGRICULTURAL LABOUR USE PROFILES

The labour profiles shown in Figures 2, 3, 4, 5 and 6 are for the divisions of Nyeri and Nyeri district and are illustrative of the sort of approach that when refined will yield the apparent agricultural employment for each district. The profiles were drawn up using the 1960/61 Kenya African Agricultural Sample census as the source of crop acreages, while the labour inputs/acre were obtained from Some Aspects of Agricultural Development in Nyeri District, 1964 Report No. 25 of the Statistics Division of the Ministry of Economic Planning & Development. The exercise will be updated as soon as the latest sample statistics become available and improved by incorporating other activities.
Figure 2. Othaya Division

Figure 3. Mathira Division
Figure 4. South Tetu Division

Figure 5. North Tetu Division
### Table 5: TALI Profiles

<table>
<thead>
<tr>
<th>CROP</th>
<th>SAMPLE SIZE</th>
<th>TOTAL LABOUR INPUT</th>
<th>C.V.</th>
<th>C</th>
<th>M</th>
<th>A</th>
<th>X</th>
<th>Y</th>
<th>J</th>
<th>A</th>
<th>S</th>
<th>N</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>25</td>
<td>10.3</td>
<td>302</td>
<td>165</td>
<td>121</td>
<td>119</td>
<td>213</td>
<td>51</td>
<td>133</td>
<td>193</td>
<td>245</td>
<td>133</td>
<td>193</td>
</tr>
<tr>
<td>Tea</td>
<td>14</td>
<td>15.0</td>
<td>292</td>
<td>198</td>
<td>178</td>
<td>252</td>
<td>245</td>
<td>2.0</td>
<td>232</td>
<td>187</td>
<td>254</td>
<td>247</td>
<td></td>
</tr>
<tr>
<td>Asian Pear</td>
<td>16</td>
<td>41.3</td>
<td>16</td>
<td>49</td>
<td>34</td>
<td>26</td>
<td>88</td>
<td>42</td>
<td>26</td>
<td>26</td>
<td>27</td>
<td>26</td>
<td>10</td>
</tr>
<tr>
<td>Okra</td>
<td>18</td>
<td>10.1</td>
<td>50</td>
<td>47</td>
<td>51</td>
<td>43</td>
<td>53</td>
<td>53</td>
<td>61</td>
<td>60</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
</tbody>
</table>

*Number of farms*

As Table 5 shows, the four major enterprises in the District have very different labour intensities and labour profiles. While tea and coffee are both labour intensive crops, tea's labour profile, with a coefficient of monthly variation of 15.9, is relatively flat while coffee has a marked seasonal peak at harvest time giving rise to a coefficient of variation of 40.3. Maize and beans have a relatively low labour intensity, but with a marked peak at weeding time, have a high coefficient of variation in comparison with coffee.

The labour inputs/acre of a given crop were multiplied by the acreage of the crop in that division to give the number of manhours required in a given month. The total manhour requirements for each division in a month were obtained by summing over crops, and the district profile by summing over divisions. In all divisions, the peak period of labour requirement fall in May, June and July (first peak) and October (second peak). In all cases, April was the slackest month.

### Table 6: Crop Shares by Division & the Effect on Aggregate Labour Profiles

<table>
<thead>
<tr>
<th>Division</th>
<th>Tea Area (acres)</th>
<th>Coffee Area (acres)</th>
<th>Maize &amp; Beans (acres)</th>
<th>Livestock (Numbers)</th>
<th>C.V. of</th>
<th>Divis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetu</td>
<td>800(1.6)</td>
<td>25800(71.0)</td>
<td>10000(27.4)</td>
<td>19.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathio</td>
<td>450(1.5)</td>
<td>1100(2.7)</td>
<td>32200(93.6)</td>
<td>900(2.2)</td>
<td>24.2</td>
<td></td>
</tr>
<tr>
<td>South Tetu</td>
<td>1000(4.3)</td>
<td>23200(95.7)</td>
<td>900(2.2)</td>
<td>24.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Othaya</td>
<td>560(3.7)</td>
<td>400(1.8)</td>
<td>10600(70.8)</td>
<td>900(2.2)</td>
<td>15.3</td>
<td></td>
</tr>
<tr>
<td>Nyeri Dist</td>
<td>140(1.1)</td>
<td>3100(2.2)</td>
<td>103200(84.4)</td>
<td>11700(12.0)</td>
<td>21.3</td>
<td></td>
</tr>
</tbody>
</table>

*Figures in parentheses are the percentage shares of crop area for this purpose a stocking rate of one cow per acre has been assumed.

Source: Kenya African Agricultural Sample census, 1960/61

The division profiles reflect the dominance of maize and beans, as Table 6 shows. It is interesting to note, however, the moderating influence of other crops by comparing the division coefficient of variation. Thus South Tetu, with the highest coefficient of variation, has none of the crops with the lower coefficients of variation (tea and livestock) while Othaya, which has both, has the lowest coefficient of variation.
The method by which whole farm labour inputs are allocated to individual enterprises is that of multiple regression, under the hypothesis that total labour used on the farm will be largely dependent on the size and combination of the enterprises on the farm. The underlying assumption is that, though decisions on the optimum size and combinations of enterprise will be influenced by labour availability, the actual amount of labour used will be closely determined by the choice of enterprises and the particular size and that therefore a single equation model is appropriate.\footnote{See G.T. Tyler's article "The use of Multiple Regression Analysis of Whole-Farm Data in the Estimation of Enterprise Labour Coefficients," in The Farm Economist, XI, 3, 1966.}

Assuming a linear relationship the regression equation is of the form:-

\[ Y = a + b_1 X_1 + b_2 X_2 + \ldots + b_k X_k + e \]

where \( Y \) is total labour input on the whole farm measured in man-days; \( X_i \) is the size of the \( i \)th enterprise, measured in acres for crops, and numbers of livestock; \( e \) is the error term.

The \( b \) coefficients are estimates of the labour input per unit of each enterprise.

A partial test of the validity of this approach in the Kenya context was made using data for a sample of 364 farms in Tetu division, Myeri District collected by Dr. J. Ascroft of I.D.S. in September and October 1970, and kindly made available to us.\footnote{Ascroft, J. Tetu Extension Survey, Institute for Development Studies, Nairobi, 1971.} The test involves a comparison of the regression coefficients obtained from Ascroft's data with the direct observation of labour inputs made in the same district by staff of the Statistics Division of the Ministry of Economic Planning and Development carried out for three successive twelve month periods from February 1962 to January 1965.\footnote{Report No. 21, 24 and 25, Farm Economic Survey Unit, Statistics Division, Ministry of Economic Planning and Development.} It needs to be pointed out at the outset that the test is an imperfect one in as much as a five year gap separates the two data sets, and that while the Ascroft sample survey is a random one covering one division, the Ministry data cover a smaller non-random sample of more progressive farmers.
Because the information collected in Ascroft's survey was not geared specifically to obtaining information about labour-enterprise coefficients, certain adjustments had to be made to the raw data prior to analysis.

The questions in the survey on labour inputs asked for the numbers of persons working on the farm, subdivided into six categories: full-time, part-time and seasonal household, and full-time, part-time and seasonal hired. We allocated weights to each of these categories to convert to man-days on the simple but arbitrary assumptions that full-time labour worked 260 man-days a year, part-time labour 130 days a year, and seasonal labour 65 days per year. In the first runs three dependent variables were tried: total seasonal labour (family plus hired), full-time hired labour, and total labour.

Information in the survey about size of enterprise came from questions asking for the proportion in tenths of the total acreage under certified potatoes, hybrid maize, coffee, tea, pyrethrum and macadamia. These were converted to crop areas by multiplying by the total farm area. As hybrid maize only accounts for about a third of total maize grown, a residual variable was calculated as the difference between total farm area and the coffee, certified potatoes, tea, pyrethrum and macadamia area. This variable may be regarded as a proxy for area under food crops, which are predominantly maize, pulses, sweet potatoes, and bananas.\footnote{Statistical Abstract, 1970. Ministry of Finance and Economic Planning, Table 79(b).}

The size of the dairy and pig enterprises were measured as the total number of cows (local and grade) in milk and dry, and the number of sows, respectively.

In addition to the Tetu data we also had access to similar data collected for a random sample of farms in Vihiga division. This was made available to us by kind permission of Mr. Peter Moock and Dr. Ascroft. The labour data for Vihiga corresponds to that for Tetu, but differences occur between the recording of crop areas in the two surveys. In the Vihiga survey maize area was recorded directly as area under local maize and area under hybrid maize, which we simply aggregated to get a total maize acreage for the long rains. For coffee and tea, farmers
were asked how many trees/stumps they had, and these were converted into area equivalents using the standard planting densities of 540 trees per acre (coffee) and 3000 stems per acre (tea).

The regression results are shown in Table 7. The column headings are the dependent variables in successive runs, while the rows represent the enterprise coefficients for different categories of labour: total labour, total seasonal labour, and full-time hired. For the second and third categories, the regressions were run on sub-samples comprising only farms that used seasonal labour, and full-time hired labour, respectively. In reflecting the limitations of the data and possibly of the method, they are however sufficiently promising to warrant further investigation and consideration.

We may begin our interpretation of the results by noting the highly significant intercept terms for most of the regressions. In this specification, the intercept represents the amount of labour that is used on the farm when the levels of the enterprises included in the regression are zero. These non-enterprise activities may include the Z goods of Hymer and Resnick,11 and leisure, as well as water carrying, cooking, and looking after the children. The greater magnitude of the intercept for Tetu than Vihiga is consistent both with larger farm size in Tetu, and the suggestion made earlier that underemployment in Tetu tends to be concentrated on the farms, whereas in Vihiga farm incomes are too low to support surplus family members.

The coefficients that achieve significance for total labour input in Tetu are coffee, cows, pigs, pyrethrum, and residual with maize. For Vihiga all the enterprise coefficients achieve significance. The reason that macadamia does not achieve significance for Tetu is probably that it has a very low labour requirement until maturity, and most trees in Tetu are still immature. The non-significance of tea in the Tetu sample may be due to the different stages of maturity of the tea, which have widely different labour requirements,12 or due to its collinearity with cows (.42). The non-signifi-

cance of certified potatoes probably reflects the low proportion of farms in the total sample growing this crop (3.4%).

The magnitudes of the coefficients for the enterprises that are significant are fairly consistent with those recorded by direct observation in Report No.25. Table XI of this report shows that on 19 farms in North Tetu, labour input on maize and beans for an average of 19 farms was 748 hours. The average area under maize and beans was 2.5 acres for the long and short rains crops taken together, which implies a per acre labour input of 299 hours, or man-days input of 37, assuming an eight-hour working day, which we were told was usual on our visit to Tetu. This compares well with the regression estimate for total labour input of ‘residual’ maize of 34, for the Tetu sample. The figure for maize input for Vihiga is considerably higher (118 man-days), but we recall that twice as many farmers in Vihiga are growing the much more labour-intensive hybrid maize than in Tetu, and that the working day in Vihiga contains fewer hours.

The results for cows for Tetu seem to be affected by collinearity with coffee (0.36) and tea (0.42), for the regression estimate of 120 man-days per cow exceeds that of Report No.25 of 80 man-days from a sample taken over 48 farms. This difference cannot be explained by an increase in the proportion of grade cows, as the Report’s sample covered grade cows only. On the other hand the Vihiga estimate of 86 conforms well with that from Report No.25, although there are no grade cows in the sample. This estimate does not appear to be troubled by collinearity (highest correlation is with maize at 0.31). Lower labour inputs in milking non-grade cows are probably more than offset in Vihiga by more labour intensive grazing systems.

The labour input per sow regression estimate for Tetu corresponds closely with that given in Report No.25 for a sample of 26 farms, while the regression estimate for pyrethrum labour input exceeds that of Report No.25 quite considerably (317 man-days compared with a range of 83 man-days to 210 man-days). We are not inclined to attribute this difference to errors in the regression analysis, but instead contend that the small sample size in the Report No.25 of 3 and 8 farms is the cause of the difference. For coffee the results are in need of interpretation.
<table>
<thead>
<tr>
<th></th>
<th>Tetu</th>
<th>Vihiga</th>
<th>Tetu</th>
<th>Vihiga</th>
<th>Tetu</th>
<th>Vihiga</th>
<th>Tetu</th>
<th>Vihiga</th>
<th>Tetu</th>
<th>Vihiga</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>898(18.81)</td>
<td>541(13.14)</td>
<td>936(10.04)</td>
<td>168(8.50)</td>
<td>286(7.41)</td>
<td>280(1.94)</td>
<td>322(12.96)</td>
<td>272(7.75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffee</td>
<td>89(3.71)</td>
<td>500(2.89)</td>
<td>20(2.23)</td>
<td>200(3.04)</td>
<td>43(4.6)</td>
<td>5(0.02)</td>
<td>16(1.40)</td>
<td>10(0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tea</td>
<td>32(0.93)</td>
<td>215(1.81)</td>
<td>7(0.57)</td>
<td>-32(0.75)</td>
<td>16(1.24)</td>
<td>128(0.74)</td>
<td>21(1.26)</td>
<td>59(0.76)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td></td>
<td>118(4.82)</td>
<td></td>
<td>45(4.51)</td>
<td></td>
<td>29(0.90)</td>
<td></td>
<td>17(0.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cows</td>
<td>120(5.89)</td>
<td>86(7.13)</td>
<td>18(2.15)</td>
<td>9(1.69)</td>
<td>0(0.01)</td>
<td>4(0.14)</td>
<td>28(2.81)</td>
<td>38(3.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pigs</td>
<td>161(3.37)</td>
<td></td>
<td>21(1.19)</td>
<td></td>
<td>1.3(0.04)</td>
<td></td>
<td>91(3.81)</td>
<td></td>
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<tr>
<td>Macadamia</td>
<td>-91(1.24)</td>
<td></td>
<td>-16(0.58)</td>
<td></td>
<td>-30(1.12)</td>
<td></td>
<td>-19(0.53)</td>
<td></td>
<td></td>
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<tr>
<td>Potatoes</td>
<td>135(0.72)</td>
<td></td>
<td>43(0.65)</td>
<td></td>
<td>95(1.59)</td>
<td></td>
<td>40(0.46)</td>
<td></td>
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<tr>
<td>Resid(residual)</td>
<td>34(3.69)</td>
<td></td>
<td>2(0.51)</td>
<td></td>
<td>-4(0.86)</td>
<td></td>
<td>12(2.59)</td>
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</tr>
<tr>
<td>Resid.</td>
<td></td>
<td>8(1.61)</td>
<td></td>
<td>3(1.13)</td>
<td></td>
<td>-14(0.74)</td>
<td></td>
<td>8(21,21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyrethrum</td>
<td>317(3.07)</td>
<td></td>
<td>-32(0.68)</td>
<td></td>
<td>-1(0.02)</td>
<td></td>
<td>84(1.70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>.87</td>
<td>.81</td>
<td>.76</td>
<td>.76</td>
<td>.90</td>
<td>.69</td>
<td>.78</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>317</td>
<td>373</td>
<td>182</td>
<td>211</td>
<td>51</td>
<td>25</td>
<td>258</td>
<td>222</td>
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</tbody>
</table>

* Figures in parentheses are t-ratios.
because it is apparent that the regression estimates for two areas differ markedly. Report No.25 for Nyeri district over a sample of 25 farms gave an average input of 251 man-days compared with the regression estimate of 89 man-days for Tetu. We think the low regression estimate is because of collinearity between coffee and cows (.36). When we ran the same regression suppressing cows, potatoes and macadamia we obtained the following regression equation:

\[
\begin{align*}
\text{Intercept} & : 1139 \quad (31.95) \\
\text{coffee} & : 164 \quad (9.51) \\
\text{tea} & : 30 \quad (2.94) \\
\text{pyrethrum} & : 335 \quad (3.03) \\
\text{residual maize} & : 4 \quad (0.55) \\
R^2 & : 0.92
\end{align*}
\]

The coffee coefficient is increased to 164, which seems plausible when one recalls that the Report No.25 sample covers progressive farms only who may be expected to spend more time on their coffee in mulching and pruning, weeding and picking. It may also be noted that the tea coefficient becomes significant when cows are omitted: the partial correlation coefficient between cows and tea is .42. For Vihiga the coefficient at 500 man-days per acre is manifestly too high, and the reason for this is not hard to find. It will be recalled that area of coffee in acres was obtained by dividing number of coffee trees by 540; the recommended planting for coffee. It seems likely that in practice farmers plant at a lower planting density than that recommended by the research station, and hence dividing tree numbers by 540 led to an underestimate of the actual area under coffee.\footnote{Plant populations also often fall below standard because of non-replacement of trees that have die-back.} This would tend to exaggerate the labour input per acre in the regression result.

We now turn to the results for total seasonal labour input and full time hired labour. From prior reasoning one expects crops with a high coefficient of monthly variation in labour demand to exhibit significant coefficients for seasonal labour, and that crops which are very labour intensive with flat profiles to lead to the hiring of full-time labour. By and large the results bear out these expectations. For Vihiga, coffee and maize are the enterprises that record significant coefficients. As Table 5 shows, both these crops have high coefficients of monthly variation in labour use.
Crop profiles are interesting in that they indicate the likely employment effects when a new crop is added to an existing enterprise. A farmer growing 5 acres of maize and beans will likely be able to replace one acre with coffee without additions to the labour force, as the peak labour demands for coffee coincide for the most part with slack periods for maize and beans. Conversely, the addition of tea to an existing farm situation with its fairly constant and heavy labour demand through the year is likely to require additional farm workers. These considerations are important when attempts are made to predict the aggregate effects in terms of number of jobs created (as opposed to reducing the underemployment of those already partially employed) from increasing cash crop areas. The matching of crop profiles for given labour constraints is of course an integral part of linear programming solutions to farm planning.

A NEW METHOD

Of concern in an attempt to understand the nature of the unemployment and underemployment problem in a given agricultural district is knowledge of the labour input by type of crop, and the distribution of that labour input over the year. Usually such information is obtained by direct observation and recording of farm labour inputs over a sample of farms, an expensive and time consuming method which has been applied to our knowledge in only two districts of Kenya and over a relatively small sample of farms. Much more common is the collection of farm data on a one-visit only basis, when information is obtained about the number of people working on the farm during the course of a year, and of the areas of crops. One-visit data collection allows sample size to be increased considerably over direct recording-observation for given costs.

Our intention here is to show that the one-visit type of data can be used to obtain estimates of annual labour inputs by crop, and that with knowledge of the crop calendar, and the distribution of labour by crop inputs through the year for one district, labour profiles for crops grown in other districts may be obtained. Given crop areas for a district it is then possible to derive an aggregate labour profile for that district's agriculture, which may be regarded as the apparent labour use in agriculture for that district.
For Tetu, coffee too is significant, but so are cows, which have a flat labour profile. Again it may be collinearity (.38) that gives rise to this apparent significance.

Full-time labour results for Vihiga suggest that it is factors other than type of enterprise that determine whether such labour is employed on the farm. These other factors would be likely to include a source of off-farm income. However the sub-sample size for this category of labour is small (35 farms), and there are only 3 farmers growing tea, the crop most likely to employ full-time labour.

For Tetu the sub-sample is again small (56 farms) but the coffee coefficient is significant, and the potatoes and tea enterprises which are labour intensive are close to significance.

It is apparent that further experimentation with this method is required before it can be used with confidence to build up labour use profiles for agricultural districts, but we think the results are sufficiently encouraging, given the data limitations and rather arbitrary assumptions used in transforming them, to warrant such endeavour. Multicollinearity appears to be the main limitation of the method, and this we may be able to overcome by choosing subsamples that do not have the annoying variable, or by combining enterprises that are correlated into one variable.

APPENDIX A. INFORMAL INTERVIEWS IN TETU DIVISION

1. A progressive farmer with 12 acres in Muhoya's location. This farmer who has three pieces of land is a school teacher. He employs three men full-time, one of whom milks the eight grade cows, and the other two are developing two acres of tea land. The tea workers were set a daily task by the farmer. The cowman said that it was not difficult to get a permanent job on a farm, while the farmer said it was not difficult to obtain a full time worker, but the worker might be tempted away to another farming job by promise of a lighter work load. Labour employed on a monthly basis might only stay for three or four months. If the farmer wanted casual labour, he would employ people from neighbouring farms. His children of school-age on vacation were helping spread fertilizer on some pasture. The farmer said he would not let farm work interfere with his son's education.

2. Two AAs; Leonard Githui and Douglas Kanyi (Muhoya's location).

The labour peak in June is accounted for by weeding maize, earthing potatoes, spraying coffee, picking pyrethrum. There are
tractors or ox-ploughs because labour is abundant and slopes are steep. Schoolchildren on holiday are engaged for carrying water and coffee picking and weeding. There is a free interchange of tasks among the sexes within the family farm, but not for hired labour: women are usually hired for coffee and tea harvesting. Eight hours a day is the normal for a full time farm worker. Some people from the Rift Valley come into the division for agricultural work: coffee harvesting, but especially milking. They enquire first at the chief's office. Some farmers are selling their (small) farms here and buying a share in a cooperative farm. The coffee factories (12 in the division) provide some employment in the off-season, sorting coffee. A number of unemployed live at home and go each day to Nyeri to try and get casual work.

3. Three Subchiefs in Muhoya's location.

People from the Rift Valley only come to work for a month or so. There is a tendency for workers to have a cash target, so that when they have achieved it they stop work. A normal wage in agriculture is Shs35 with housing and food. Outside workers who want farm employment face a housing problem. The people employed for casual work are usually those with small farms of their own. Off peak farm activities include fencing and clearing land, i.e. farm maintenance and investment.

4. Group of unemployed men (about 20) in Kihuyo village.

This is an emergency village about 5 miles from Nyeri. It looks run-down and the plots are very small (less than a quarter acre). Most of the people interviewed had registered as unemployed, and check in at the labour office from time to time. Their main employment opportunities in agriculture occur at coffee harvesting time on a neighbouring large scale coffee plantation, when the whole family goes to pick. They could not get jobs as full time workers on small farms. Whether this was because of absence of market information or transport and housing problems was not clear, but they did not appear work-shy and were unanimous in declaring their willingness to take on any kind of job, rural or urban. About 5 of them had been to Nairobi for work, without success. Additionally there had been problems of accommodation. They had not found opportunities for plucking tea on small farms, and tea work on estates was taken care of by other unemployed in villages closer to the tea estates. They manage to subsist on their coffee earnings, food from their small plots, and an occasional casual job in Nyeri.
5. Two employed and two unemployed young men (school-leavers) interviewed in Kiamamatambo village

The two employed young men had jobs with local Ministry offices in Nyeri. One had got the job in February 1971 after leaving school in 1964, and staying at home, and working part time on his father's farm. The other had got the job two years after leaving school. His father's farm was too small to offer employment. The first unemployed young man lived on his father's farm of 20 acres. His father has nineteen children. He wants a job like that of his companion - an office job in Nyeri with a Ministry. Meanwhile he can live off the family farm, helping at peak times. The other unemployed wants a job as an office boy; he had no shamba to live on, and obtains a living from casual farm work: weeding and digging, and picking coffee. The attitude of all four was that agricultural work, permanent or casual, would not meet their aspirations as school leavers. They would rather try for a casual job in Nyeri town at a daily wage rate of Shs 4 or 5 which with a daily probability of obtaining a job of .5 would yield the same income for half the effort. They would also be in closer contact with the permanent urban job market, and have the non-monetary benefits of being in town.

6. The Senior Labour Officer, Nyeri

The unemployment register does not give much information other than the number of people registered as looking for employment i.e. there is no breakdown by location, job preference, past employment history of applicants. In Nyeri town the number of people who do not get jobs in any day is greater than the number that do i.e. the probability of getting casual urban work is less than .5. Casual urban work opportunities are on building sites, city council work digging trenches and road maintenance, off-loading at the railhead or loading lorries. The provision of housing is important for migrant agricultural labour. Farmers' wives do not like casual agricultural labour living on the farm. While there is some casual labour employed in carrying water in dry (off-peak) months it is not very important.

Agricultural workers prefer harvesting tea or coffee on estates rather than on small farms because there is less supervision. There is little seasonality of demand for urban casual work, even in construction. Care is needed in introducing labour intensive projects into an agricultural area that it does not upset the supply of farm labour e.g. the construction of roads in Mwea-Mbere affected
the supply of labour for planting rice.

SUPPLEMENT B. INFORMAL INTERVIEWS IN MBERE DIVISION

1. A progressive farmer with 13 acres at Ena.

He grows tobacco, maize and beans, and employs seasonal labour. Occasionally he hires people by the month, but has no full-time workers. It is easy to get farm labourers. Casual farm workers are usually local people with small shambas of their own, but Kambas sometimes come to MberE for work when it is dry in Machakos. The daily rate is about Shs 2 per day, but weders are usually employed on a piece rate basis. The monthly rate is Shs 75 without food or housing. A herdsman gets Shs 15 to 30 per month. He owns a tractor which is used for ploughing only, and which he hires out at Shs 66 per acre in the dry season. He does not cultivate all his land, because of a shortage of cash, and the risk element in an area where there is a possibility of a crop failure. Instead of investing all his money in the land each year, he keeps a reserve in case there is total crop failure. He wants his son to go as far in schooling as his abilities will allow and get a non-farm job, which may be difficult.

2. A farm worker on the same farm.

He has a shamba of three acres and grows food crops only, which he had not finished weeding. It is difficult to find work even now at the peak time of weeding, especially this year following the failure of the short rains which means there is a shortage of cash for paying labour. He used to work in Embu as an askari. He did not register as unemployed because he was looking for casual farm work at the time in Central Province in order to pay school fees.

3. A second farm worker looking for casual farm work weeding.

He has a two acre shamba, which he has not yet finished weeding. He had been looking for work since 7 a.m. and had visited three farms without success and was on his way to a fourth at 10 a.m. He used to work on a sisal estate, and did not know that sisal work opportunities had been affected by the market slump.

4. A group of people interviewed on the roadside outside Siakago.

(i) A small farmer with three acres. He obtained casual work on other farms, but it was difficult to get work this year because of the shortage of money (drought). He preferred daily piece work to monthly work as the monthly wage was so low (Shs 50). He wants his children to get jobs outside farming, but knows that it
will be difficult.

(ii) A small farmer with two acres, looking for casual farm work. It is difficult to get work, and women get most of the weeding jobs because they charge a lower rate. He has spent five months in Nairobi, Thika and Embu looking for a job. He got casual work there for a few days, but was generally unsuccessful in finding employment. He cannot expand the area of his farm because there is only his wife and himself, and he had no money to pay labour for clearing land.

(iii) An old man whose sons had left the family shamba to find work because of the drought. One had found a full-time job on a small farm in Nyeri at Shs 50 to 60 a month, while the other was employed at the hotel in Slikago at Shs 40 a month plus food.

(iv) A young unmarried man with a small shamba of ½ acre. He was looking for work; in the previous week he had found casual work weeding at piece rates. He had spent three months looking for work in Nairobi without success.

(v) A farmer with four acres, growing cotton as well as food crops. At peak periods there is usually enough work for everybody. He was employing labour for casual work (weeding) but had to pay cash. In the slack parts of the year he clears the bush and expands the area of his farm under cultivation.

(vi) A young farmer with 2½ acres, growing food crops. He used to grow cotton but prices are low, he has to pay Shs 50 for seed cotton (per acre), and he has experienced a crop failure. He looks for casual work weeding, but it is not easy to get a job because there is a shortage of money. He sometimes goes to Nairobi to look for work, and once got a job there for six weeks as a labourer on a building site. He registered as unemployed, and is willing to do any type of work. If he has to leave the area his wife can look after the shamba.

(vii) A farmer with two acres of land. Last year he grew tobacco but the crop failed completely. He grows a sufficient area of food crops to provide for his needs as long as there is adequate rain. It is difficult to get casual farm work but he had spent most of the previous month (April) employed on daily weeding. He spent six months in Nairobi looking for work without success, but has not looked for farm work outside the division. He would just as soon live and work on his own shamba as earn Shs 70 a month away from it.
Patrick Njuru, SRDP cotton extension AA.

We visited one cotton demonstration plot, and two cotton block schemes. Generally cotton fits well into the existing seasonal labour profile, but it is a fairly sophisticated crop to grow, requiring insecticide application and timeliness of planting and harvesting. The cotton blocks had been affected by the previous year's drought, so that many of the plots on both blocks had been planted to maize or beans after the cotton had failed. Other plots were lying fallow. The cotton we did see was seriously affected by cotton stainers, and getting farmers to apply insecticide individually has been dropped in favour of management and spray days. The problems of physically getting insecticide to the area, financially enabling the farmer to obtain it from stockists, and technically, in applying it with low-volume water saving sprays, may best be overcome in this way. Farmers need to get high yields if they are to get a reasonable return after paying for the insecticide, seed and other input costs. Crop protection of food crops is an important activity in this division.

6. The Chief, Kiritiri, Mavuria location.

He has a ten acre farm and grows cotton and food crops. He employs three people on a permanent basis at Shs 80 per month plus food and housing, and hires casual labour at peak times e.g. weeding. He owns a new tractor with disc ploughs which he hires out. There are many unemployed people who are looking for work, even though they have small shambas they want money to spend and they do not grow cash crops. There are very few farmers who can afford to hire people for land clearing at any time, but especially now because of the famine. Daily rates of pay are Shs 1 to 2 for weeding, and payment is usually on a piece work basis. There are lots of unemployed who operate on the Nairobi-Mombasa axis. There is outmigration of individuals from here to Embu for coffee picking and Mwea for rice planting and harvesting. They usually walk. The Kambas come to Mbera for work when there is a drought in Mchakos. Some would rather hire a Kamba than a local man because he will not disappear to work his own shamba when you want him to work on yours.

7. A group of men at Kiritiri market.

(i) A farmer with 4½ acres who hires casual labour for weeding. Drought has made the labour market difficult. On the
one hand a shortage of cash made it difficult to employ people; on the other, potential employees were especially keen to see that their own shambas were in good order so that high yields were obtained. People were not willing to work for less money this year. He had no off-farm income source.

(ii) A farmer with 6 acres growing food crops only; cotton had been a failure. He had hired Kambas from Machakos for weeding. Wage rates had not fallen this year. He wants his children to secure off-farm employment which means a steady income stream. He used to work on a coffee estate when he was younger and thinks it is very difficult to get work on a coffee estate now, even seasonally.

(iii) A migrant farm worker from Machakos. He was finding it very difficult to obtain work, especially this year. He had visited 10 farms that day to find work, without success. His wife was looking after the shamba in Machakos. He had come to Kiritiri because it was close to home and he could not afford the bus-fare for a longer trip. In a good day he could make Shs 6 to 8, on more than one farm.

8. A schoolboy’s thoughts on the agricultural labour market.*

A typical full-time labourer works from 8 to 4 and takes lunch with the farmer. His tasks are likely to include weeding, digging, digging banana holes, clearing land after harvest, picking cotton and sorting it. The monthly wage ranges from Shs 50 to 70, but can be as low as Shs 30. However full time labourers are not common. Young married men leave their wives to cultivate their shamba while they seek work on nearby farms on a daily basis. They need cash to buy fat, education and clothing. Children too get casual work to pay for their school equipment and clothing. Women who get casual work are likely to weed a small piece for a shilling, and then return to work their own shambas. Farmers who employ labour generally prefer to hire on a daily basis, because with monthly labour there is a risk that there will be nothing for them to do at some times of the month.

APPENDIX C. INFORMAL INTERVIEWS IN VIHIGA DIVISION

1. A farmer with four acres, who grows hybrid maize and cultivates the whole area.

He does not grow coffee because the money set aside for that purpose was taken by the sub-chief. The main work period is

* we are indebted to Dr. Brokensha for permission to reproduce the ideas of Nthia Njeru presented in an essay on this theme.
from January to July, during which time he may hire casual labour for Shs 2.50 per day. The normal work day is from 7 to 1. It is easy to obtain labour, and he finds that hybrid maize requires a much larger labour input than local maize. People tend to move out of the division looking for work because farms are small. He has two sons who have been looking for work in Nairobi and Kisumu for four years. They have fourth-form education and are looking for clerical jobs. He used to work in Nairobi as a petrol pump attendant.

2. An unemployed youth, whose father works on the tea estates in Kericho.

He stays with his mother and brother on a very small shamba. Occasionally he gets work weeding or herding cattle or harvesting coffee. Hybrid maize is the most profitable crop in the division. He does not care to work on the tea estates because it is hard work and you have to work in the rain.

3. A farmer with one acre, who grows local maize.

He looks for casual work, digging or weeding, but it is difficult to get work, especially when there is a famine. Casual work is his only source of cash for purchasing hybrid seed. He has visited two farms already without success. The daily wage is Shs 3 plus food. He had not been outside the division to look for work.

4. A man selling bricks by the roadside.

He has a shop in the village of Kaimosi, and a five acre shamba which includes one acre of tea. He has only cultivated half of his shamba because he prefers to invest in his (five) children's schooling than the farm. He hopes they will secure off-farm jobs. He used to work in the Nandi Hills on a tea estate. He employs seasonal labour, and pays 7/- a day plus lunch.

5. A farmer with three acres, growing tea and hybrid maize.

He financed the tea investment by selling a cow, and finds that hybrid maize entails much more work in weeding, top dressing and insecticide application. He owns a 39 acre farm on a settlement scheme growing pyrethrum in Kitale which is managed nominally by his son who works at a blanket factory in Nakuru. He visits the farm twice a month to advise his son's wife on farm management. It is easy to obtain labour even at peak times.

6. Three men interviewed at the roadside by Maragoli High School

(i) A farmer with four acres, two of which are under hybrid maize and two of which are lying fallow. He has no money to develop
the rest of the shamba. He used to work in Nairobi as a shop assistant and as a shamba man. He wants to get a loan for tea growing, but his land is not registered.

(ii) A farmer with two acres all of which is under hybrid maize. There are many people looking for farm work. Women get Shs 2 a day and men Shs 3. He used to work at Nairobi airport and came back for land registration.

(iii) A farmer with six acres only two of which are under cultivation. He cannot find work on other farms to pay for the costs of hybrid maize inputs. It is not easy to get employment in Nairobi. He wants to get a loan for land development, but he does not have the title deed for his land.

7. A farmer with three acres close to the Vihiga Coffee Cooperative. He has a few coffee trees and bananas, and some local maize. Some of his land was not planted because he ‘ran out of energy’, and he has no money to employ labour to help him dig or purchase hybrid maize inputs. He worked for a year in Kisumu in a cotton factory, and during that year his coffee suffered from not being pruned, weeded or sprayed. His net pay in Kisumu was only Shs 100 and this did not allow the employment of labour on the farm which was under the management of his wife. It seemed that the opportunity costs of his working in town may have exceeded his money earnings there. He observed that if you planted a large acreage you might not have enough labour subsequently to look after it properly i.e. if you could not afford to employ casual labour for weeding. There was no point in working as a permanent farm worker as you did not always get paid the agreed monthly wage.

8. The AAO, Vihiga Division.

Labour peaks occur for land preparation (December, January), weeding (April) and maize harvest (August). The peaks in April and August coincide with school holidays. Hybrid maize, cows and tea are preferred to coffee by most farmers on profitability grounds. The milk market is buoyant and the Division is a net importer of maize. Although standards of coffee husbandry are not low, prices to the farmer seem to be. The coffee cooperatives employ about 20 permanent staff and 30 casual workers. Not all shambas are run down when the farmer looks for off-farm employment: it depends on how much aut
delegated to the wife in his absence. Some labourers do not get the agreed monthly wage from the farmer because the farmer does not always have a constant income stream. It is generally cheaper to employ monthly labour: his father employs farm workers at a monthly wage of Shs 30 plus food. The normal working day is from 7 to 11, but some may start as early as 5 in order to avoid the heat of the day. Other casual workers take one day's work in one, and in order to do this begin work on one piece and then move on to another. Very few people come to look for work in the division, but some move out to other agricultural areas, notably the tea estates, as well as to urban centers.

9. A farmer with an USAID hybrid maize loan.

His loan is for four acres of maize on a shamba of 6½ acres. Some of his hybrid maize was interplanted with beans which he justified on the grounds that he could not prepare any more land for the beans to be planted separately. He has another plot of 5 acres a mile away. He hires casual labour, and pays them out of crop revenues, and hires one permanent labourer at Shs 50 per month. He has applied to a commercial bank for a loan for two exotic cows, offering the title deed of his farm as security. Part of the land he inherited: the rest he purchased using money realised from the sale of cows given as bride price for his daughters.

10. A sub-chief with a farm of 2½ acres in West Bunyore.

He had only planted ½ acre of maize, but had another acre of maize on a second plot. He argued that he had not planted more because the land wanted a rest, and he could not afford hybrid maize because education of children came before expenditure on farm inputs. He had applied for a cow loan which had been refused and now wanted a loan for 120 chickens. Before this application could go forward he needs to provide evidence of an assured outlet for the eggs with a retailer in town. There are many people unemployed who come looking for work on his shamba. Out of 10 people who go to towns looking for work, he estimates 9 return without finding a job. There is a virtually landless class developing with plots of 1/4 acre, and the unemployment problem is manifesting itself in robbery. It is not possible to walk a mile at night without being mugged.
INTRODUCTION

Chronic unemployment with all its social and economic costs is emerging as the critical issue facing developing countries today. Unprecedented rates of population growth and urbanisation are creating problems of such magnitude as to threaten the stability of any national society, however enlightened and progressive the policies of its government. If the spectre of famine and starvation has been mitigated by the miracle grains of the green revolution, the growing numbers of unemployed and disillusioned require concentration on new approaches to the problem of employment generation and income distribution.

Uganda typifies the tropical African country with an agrarian-based economy dependent upon exports of primary products for foreign exchange. The agricultural sector accounts for approximately 60 percent of the G.D.P. and nearly 90 percent of the nation's exports. Equally important, only one out of thirteen adult Ugandans is engaged in wage employment.

The 1969 Census\(^1\) indicates that since 1959 the population of Uganda has grown from 6,536,531 to 9,548,847 exhibiting a growth rate of about 3%, one of the highest rates in the world. If this growth rate continues the population will more than double in less than 20 years. The demand which this places on social services is thus evident.

In addition, approximately 46 percent of the population is under 15 years of age and every year nearly as many young people enter the ranks of potential labour as there are people engaged in wage employment\(^2\).

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1. The official census returns are in the hands of the Government printer and soon will be available in printed form. The Census data presented here were obtained from the Official figures but are not to be published until after the Census is released.

2. Cf. Tables 3 and 4. The migration of men in search of employment is revealed in an analysis of the M/F ratios presented in summary form.
In 1960 there were 245,000 workers, mostly unskilled, engaged in the industrial labour force. Following a decline over the next three years, total employment has continued to rise over the decade, reaching a total of 295,000 in 1969, an increase of 13,200 (4.7 per cent) compared with 1968.

There are few reliable estimates on the numbers of unemployed in Uganda or any other developing country, but some authors suggest that the ranks of the unemployed are increasing by more than 15 per cent each year. Whatever the estimates, a simple comparison of the growth in new jobs with the annual growth in population makes this conclusion inescapable -- industrial expansion alone, regardless of its size or structure, can provide employment to only a handful of those who seek it. If an answer to the problem of urban unemployment exists, it lies in the adjustment of rural-urban income differentials, the allocation of public investment in the form of goods and services to the countryside, and the generation of income and employment opportunities in the rural areas. The agricultural sector necessarily must absorb the substantial majority of the increase in the rural labour force and migration to the cities must be decelerated. A more balanced strategy is needed -- employment generation and regional development outside the industrial urban centres, especially Kampala and Jinja, must replace growth in G.N.P. as the principal measure of performance of the national economy.

Many planners and policy makers are convinced that such a redirection is essential, yet there are few detailed studies on the employment generating potential and policy alternatives for Uganda or any other African country. This brief paper examines some of the major issues in the complex area of rural-urban migration and employment in Uganda. No new concepts are introduced. Instead the conventional economic ideas are examined using some data based on secondary sources in order to highlight the problem, examine the causes and hazard suggestions.

3. Cf. Tables 1 and 2.

CAUSES OF UNEMPLOYMENT

The problem of rural-urban migration and employment is not yet well understood in Uganda, because not much research work has been focussed on the complex issue. Recently more attention is being devoted to it by scholars. Many suggestions have been made as to the causes of rural migration and unemployment. Eicher, et al. have summarised these in their study of employment generation in African agriculture. We will touch briefly on some of these causes as they pertain to Uganda.

1. The first cause is undoubtedly the high rate of population growth which has been mentioned earlier.
2. A second cause is agricultural stagnation; e.g. cotton and food crop production has increased only slightly in recent years. The importance of agriculture is now being realised and hope is centred on breeding new types of crop varieties, particularly at the University Farm, Makerere.
3. The third reason is the failure of employment in the urban sector to increase in proportion to demand (see Table 1). Moreover, employment has failed to increase in proportion to the actual increase in production in the modern/urban sector. For example, modern industry typically shows annual growth rates of industrial production of some 7-8%, a rate which has been maintained more or less steadily over the last 20 years. Modern industrial capacity has in fact increased even faster than actual production. There is considerable evidence to suggest that unemployment actually increases with each new job created in the modern sector, as 2 or 3 people are attracted from the countryside to compete for each new job. Urban wages are so much higher than subsistence income that even a 30% chance of finding a job will be sufficient to attract a young man from the countryside.

All this looks satisfactory in terms of Keynesian economic theory. It makes a sizeable contribution to national income. It creates considerable concrete tangible physical capital. But unfortunately, the Keynesian model does not enable one to come to grips with the problems in the developing countries. For example,

employment in the industrial sector is not increasing at the 7-8% but around 3% per annum (see Table 1). This means that there is practically no structural change in employment, given the present population growth rate in Uganda. Thus the share of total population engaged in modern industry has not increased, in very sharp contrast to the experience of developed countries.

The reason lies in the application of current technology. When countries like the U.K. developed, they used an evolving technology suited to each stage of their development beginning with labour intensive and going on to capital intensive technologies as they are today. At present everything seems to conspire to give technology a capital intensive rather than labour intensive twist and thus reduce the employment potential of the limited capital resource.

Aid donors, as well as private foreign investors, tend to put accent on supplying imported capital equipment for specific large projects e.g. mechanisation in Uganda.

4. The fourth reason is that the problem is intensified because the educational process is not structured to the needs of rural employment.

Rural life is such that there exists a social ceiling to an individual’s ambition. The individual cannot opt out of his group as he can in an urban environment. He must keep within what is socially acceptable if he is to remain in the village. Society is quick to think up disparaging reasons for the action of an individual who oversteps the mark e.g. he is a wizard, murderer, fool, etc.

The problem of the school leaver is becoming acute. Not only are young people led to believe that education will open up new channels to new jobs, but the structure of most education is such that they become ill-suited for tasks within traditional society. Furthermore it is the more enterprising youths who leave, thus depriving the rural area of the necessary innovators.

SUGGESTED SOLUTION

Public policy could be re-framed, for example:

1. Development of a social security system for the employed that could reduce their reliance on the extended family system. This has now recently been introduced in Uganda to a limited extent.
ii. Create more modern labour intensive technology:

   a) through research in intermediate technology (Kabanyolo small tractor 8,000/-). Such research work could be conducted in both developed and developing countries.

iii. Emphasis on agricultural and rural development e.g. Maize, rice and sorghum work at Kabanyolo. New potato varieties are being developed in Kigezi (Dr. Wurster at Makerere) which are yielding already twice as much as local varieties and this without addition of inputs such as fertilisers. These can help slow down the exodus from the countryside, and thus make the problem of urban employment more tractable. The new plant varieties have shorter growing periods. This permits double cropping and increases employment opportunities. In India for example it has been found that a result of the green revolution there is a net increase in the retention of household family labour, as the young find better employment opportunities in the family farm rather than in the urban centres.

Finally, mention should be made of the initiation of rural agricultural schools with special curricula based on the needs of rural life. Experience to date in Uganda however, is disappointing, partly due to parental disbelief in the schools, inadequate practical work, or physical inadequacy due to the young age of the participants.

Clearly, therefore, the solution to the problem lies not in the schools as presently conceived but in improving the economic viability of the rural areas—land reform, finance and marketing research and development. The schools can facilitate the process of rural transformation by infusing economic incentives in the minds of students—provision of skills with which to obtain wants and desires and inculcating habits and attitudes such as an inquiring mind, increased foresight, initiative, readiness to cooperate and finally, knowledge and understanding—all helping to promote much needed entrepreneurship in the rural areas.

iv. Another suggestion that follows from the discussion so far is the need to re-examine investment criteria in the agricult-

sector, with emphasis being redirected on those investments in which
the predominant objective is not necessarily a high rate of internal
return or benefit-cost ratio for the project but in which employment
generating capacity is also given prominence. These two objectives
are not necessarily inconsistent and evidence is already being
collected to show that certain projects such as the Kigezi Potato
and the Cocoa Project can go some way to meeting both income and
employment generating goals.

What should be de-emphasized in policy objectives are the large
scale, capital-intensive public-sector investments aiming at
expanding agricultural output without considerations to employment
benefits. Recent experience with such schemes, for example
subsidised mechanisation and group farms have not been happy ones.

CONCLUSION

The evidence available suggests that the problem of
rural migration and urban unemployment is on the increase in Uganda,
and that this trend is likely to persist unless policy measures
are specifically adopted to arrest it.

While the authors believe that the expansion of the
modern sector may to some extent help in mitigating the problem,
the main solution lies in the development of the rural sector.
As Eicher and others⁸ have pointed out, "The phenomenon of urban
unemployment and induced migration points out the need to improve
incentives in agriculture to discourage out-migration of agricultural
labour."

This is the only long range policy that can stem the
tide of the problem by changing the rural-urban balance of economic
opportunities.

---

⁸ C. Eicher, et al. op. cit.
# TABLE 1

TOTAL REPORTED EMPLOYMENT IN UGANDA, 1959 - 1969

<table>
<thead>
<tr>
<th>Year</th>
<th>Private</th>
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<th>Total</th>
<th>Rate of Growth (%)</th>
<th>Rate of Growth (%)</th>
<th>Total</th>
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TOTAL INCREASE IN EMPLOYMENT

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<td>5,400</td>
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<td>1960-69</td>
<td>36,555</td>
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Source: Uganda. Statistics Division. Annual Enumeration of Employees
TABLE 2

DISTRIBUTION OF EMPLOYEES BY DISTRICT, 1969

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>PRIVATE</th>
<th>PUBLIC</th>
<th>TOTAL</th>
<th>TOTAL MALES (Age 20-49)</th>
<th>EMPLOYMENT Ratio (%)</th>
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<td>(3)</td>
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| TOTAL       | 181,134 | 113,835| 299,969| 1,629,361                | 18.5                 |

Source: Uganda. Statistics Division. Annual Enumeration of Employees

This Ratio is calculated by dividing column 3 by column 4, i.e., ratio of total wage employment in the district to the adult males, aged 20-49.
<table>
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<th>DISTRICT</th>
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<th>Cohort (0-14)</th>
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<th>Cohort (20-34)</th>
<th>Cohort (35-49)</th>
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<td>M/F % Tot. Pop'ln</td>
<td>M/F % Tot. Pop'ln</td>
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1. Source: 1969 Census Returns form the basis of these calculations. Not to be cited or quoted until after publication of Census Data.

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<th>Cohort (20-34)</th>
<th>Cohort (35-49)</th>
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<td>M/F % Tot. Pop'ln</td>
<td>M/F % Tot. Pop'ln</td>
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1. Source: 1969 Census Returns form the basis of these calculations. Not to be cited or quoted until after publication of Census Data.
INTRODUCTION.

In a conference devoted to working out 'Strategies for Improving Rural Welfare', a preoccupation with the peri-urban zone of Nairobi/Kiambu, calls for explanation. In the first place, the area is neither distinctly 'rural', nor 'urban'. It evinces features of 'rural' life, yet, compared to other 'rural' areas, it can more easily be likened to a suburb of a large city. So intellectually, the study poses great problems of definition. For example: What is a 'rural' environment, and when does an area in transition cease being rural? Can we think of the Urban-Rural continuum as uni-directional and unidimensional?

It is the thesis of this paper that the urban and rural dichotomy so prevalent in development literature is a false one. Rather than pose the problem of development in terms of a progression from some 'rural' (and hence 'traditional') pole to the 'urban' (and hence 'modern') pole, we should aim at an analytical approach, which avoids this one-dimension (and often 'quantitative') approach, and, instead, gives us a qualitatively different conceptual construct from which to view the process of development. Such a construct is most ably developed and elaborated by Joseph Ascroft in his paper to this seminar.1 Thus, expanding on the

Rogers with Svenning (1969 p. 14)\(^2\) definition of modernization as "the process by which individuals change from a traditional way of life to a more complex technologically advanced and rapidly changing style of life," he defines modernization as "the process by which individuals change, as a function of an underlying need to cumulate control over change in environmental phenomenon essential to their welfare, from a traditional way of life to a more complex, technologically advanced and rapidly changing style of life."

Further, it is argued, this transition need not be deterministically unilateral in direction from the 'traditional' rural (sic) and rapidly changing urban (sic) style of life.

Viewed within this framework, then, the distinction between urban and rural aspects of development becomes meaningless, and, instead, one concentrates on abstracting some of the elements and strands of this process of cumulating control over change in environmental phenomena, that is essential for improving social welfare of the people (wherever they may be located geographically). It is because we believe this process of "cumulating control over change in environmental phenomena", is quantitatively and qualitatively complex that we set out to investigate not only the structure, but the transformation of the economy in this (Nairobi/Kiambu peri-urban) zone. It is the contention of this paper that useful insights into this process of development (defined as above i.e. cumulating control

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3. The Import of my emphasis will become clear as the Case for the Study of the Peri-Urban Zone is made later in the paper.

over change in environmental phenomena) can be gained by studying an
area, such as Kiambaa, which is exposed to the most powerful battery
of the forces of modernization by virtue of its proximity to Nairobi.
Our hypothesis is that because of this setting, we should expect to
find qualitatively different factors and elements which govern the
response-process of the transformation of such a zone from a
"traditional way of life, to a more complex technologically advanced and:
changing style of life." However, an explanation which attributed
this peculiarity purely to the fact of proximity to Nairobi, would
be facile.

WHY KIAMBA?
The choice of Kiambaa Location is purely subjective in the
first instance, since I know the area, and thus could more easily carry
But besides the purely personal reasons, there are several reasons
why I think the area is interesting as a case study.

1. The area contains some of the highest densities of population
   in some places, as high as 740 per square km.5 Banana Hill
   and Karuri village-complex together constitute perhaps the
   largest single conglomeration of population in Kiambu District.

2. Secondly, the presence of European settlers in the
   neighbouring Riara Ridge, and the proximity of the Nairobi
   market meant that there was a long history of production
   for exchange - i.e. a cash economy has long been established.
   Horticultural production in the area dates as far back as 1924.6

6. See Profile of Farmer A.
More recently, the area has experienced a fairly buoyant demand for land, and more significantly, there have been a great many land transactions (see Appendix I).

Unreflected by the statistics for land transactions is the functional transformation in land use patterns. Those with farms adjoining the main Nairobi/Limuru road have found it profitable to convert land use from traditional coffee cash crop economy to either intensive horticulture, grade dairy farming, or building for rented accommodation. Invariably all land transactions below the 0.5 acres size are converted into residential units. This raises questions not only on the farming frontier - i.e. the nature and efficacy of traditional extension services geared to perennial cash crops, but also, the infrastructural problems of marketing and distribution of a very sophisticated nature, since the nature of the commodities produced - vegetables and flowers, entails quick deliveries and sophisticated packaging, etc.

All these raise problems of institutional structures for an area under rapid transformation.

5. The phenomenon of land conversion into residential buildings raises interesting options for planning in the rural economy. One of the peculiar features of the area is the recent siting of two new industries in the area. To what extent can the area be used as a catchment zone for the migration into the city which has been so well documented by Todaro, Harris, and others? To what extent do these industries influence the patterns of production in the area?

7. See Appendix I.
Obviously, one cannot deal with all these issues under a single head. The area is such a rich mine for research that a single effort can only expose the top of the iceberg. What follows, then, is an exploratory, and not a definitive (i.e. not quantitative) study of profiles of 3 farmers which are illustrative of the various phases and thresholds in the process of the transformation of a 'traditional' economy. The study consists of in-depth interviews (some as long as 9 hours spread over several days) and participant observation, with a highly purposively (rather than randomly) selected set of respondents. The study is designed to generate testable hypotheses about the nature of the transformation of a 'traditional' economy, and should not therefore be construed as either representative of the problems of the peri-urban zone, nor definitive in any way.

This fact needs emphasizing in view of the popular belief that Kiambu is a 'developed' area, and hence, by extension, a non-problem area. Development, like poverty, is a relative concept, and whereas nationally Kiambu may appear 'developed' compared to the rest of Kenya, intra, or micro comparison of 'rural welfare' within Kiambu reveals a startling degree of poverty and rural

8. (a) The main Banana Hill study is composed of a study of 335 farmers, randomly selected from Kiambu Land Registry and forming a 20% sample of all the farm units in the 3 sublocations (out of 5) in Kiambara Location, contiguous to, and lying along the main Nairobi/Limuru Road, Route A.

The items in this study are, understandably fewer than in the above exploratory study. So far, we have conducted nearly 300 interviews, and some of the insights gained in this field have informed this study. I might add that my colleague, Joe Ascroft, is conducting a similar study in Kisii and the comparison between Kiambu and Kisii should be interesting - in a way, the Kisii study is the control for the Banana-Hill study.

(b) A larger Land Transactions Study is also currently underway, under the supervision of the author. This involves a complete census on transactions in Kiambu in 10 sublocations, randomly selected out of 84 sublocations and involving nearly 4000 farm units (a 5% sample of all land holdings in Kiambu). The study is designed to test some of the hypotheses generated from the Appendix on land transactions, and it goes without saying, therefore, that the data on land transactions is not conclusive.
If we have concentrated on the successful, it is partly out of an intellectual curiosity to understand the modernization process, and hopefully to raise some policy issues pertinent to raising rural incomes, rather than out of moral zeal.

**Summary of Individuals:**

The individuals presented were selected out of interviews with 25 farmers in the area, conducted over December 1970, as part of the pilot study for the 'Banana Hill Innovation Study', which is currently under way. These 25 farmers were sociometrically identified. Farmers were asked to name those farmers who they thought were the most progressive in the neighbourhood. If a name was mentioned more than three times, I made an effort to contact the particular farmer and conduct the interview. While in the process of interviewing, I asked the respondents to name those other farmers who they thought were either superior to them (in terms of farming practices) or comparable. This way, I was able to trace about 30 farmers.

The interviews were conducted in Kikuyu - I made notes verbatim wherever possible and followed as closely as possible the respondent's words. The interviews ranged over such topics as land holdings, acreage, tenure, land holdings in other areas particularly in the Rift Valley and the former settled areas, the form and type of ownership of such land, land use and crop-mix, crops ever grown, acreage under crops, dates of adoption, livestock ever kept, crop output and dairy output, farm practices and farm planning, application of purchaseable inputs, farm capital and farm investment plans, farm labour and farm recruitment, mass media exposure and formal participation, marketing and transport, credit and sources of capital, and experience of the farmer with innovations.

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9. See table in the discussion on L.D. Smith's paper to this conference on Land Distribution in Kiambu. In an area such as Kiambu, where land is an obviously scarce commodity, the equity of a distribution where 90.75% of the farmers own 36.16% of the area is questionable. Furthermore, it is doubtful whether the income generated from the 3 farms with a total of 18,718 hectares is greater than that generated from the 800 farms with a total area 22,182 hectares. Even more disturbing is the fact that 56.99% of the farms in the district are under 2 hectares.
and Extension agent contact and evaluation. I also dealt with the personal details - age, education, occupation, businesses owned, career history, family size and composition, leadership participation, parents educational aspirations and career preferences for their children, religion, church attendance and views on family planning.

As can be seen from the above list, these items are extremely varied and complex, hence the restriction to a small number of respondents. The interviews demanded a lot of patience on the part of the respondents. But in all cases the respondents were extra courteous and forthcoming with information, and extremely frank.

These 3 cases presented represent what I would call the 'pioneering' 'innovative' and 'entrepreneurial' phases of development in Kiambaa Location. The meaning of these 3 phases will become clear as we recapitulate the lives and experiences of three farmers.

**FARMER A:**

Farmer A is about 70 years old, (he was circumcised in 1922). He started off life as a 'teacher', having attended Kiambaa primary school in 1917-1920. But the pay was not good, and, dissatisfied with the meagre wages, he set out to make an independent living. He started farming with very little capital:

"I ...... bought tomato seeds worth shs.5/- . When they grew, I did not sell the tomatoes. I took out the seeds and replanted them again. I got 4,000/- . I am prepared to buy one seedling for 2,000/- if I know I will get more money out of it"

So, with characteristic daring spirit, and great imagination, he set about growing vegetables and, more significantly, flowers, around the year 1924. It must be realized that even for an area as close to Nairobi as Banana Hill, this was a revolutionary thing to do at such a period. For a start, the road to Limuru had not even been built and transport was on foot. And most people grew the traditional foodstuffs, not for sale but for consumption. Only as late as 1935 did the people of the area begin selling bananas along the Limuru Road as it was being constructed.

The question is, how did Farmer A come to know of the possibilities of growing flowers, and more significantly, how did he know how to grow such vegetables? One could point to the possible 'models'
modern farming in the neighbouring 'Settled Area' - i.e. Riara Ridge. But even when pressed to tell us who taught him how to grow flowers, he retorted that "God showed him, just as he taught those who invented the aeroplane".

Anyway, by all accounts of his neighbours, Farmer A was singled out as the one who introduced horticulture in the area. In fact, Farmer B, learnt from him in 1934. His reputation was such that in the 30s, and 40s, he was classified on a par with the richest Government officials of the time.

Currently, Farmer A owns 9.5 acres. Although this is registered in his name, three of his sons have all built their houses on the farm - one a very impressive stone building, the others, fairly modest wooden bungalows, well kept with clean flower gardens. Mr. A is in the process of building his own permanent stone house. Thus, although Mr. A has a wife and 11 children, the farm occupancy rate is higher than would be expected of a holding the size of 9.5 acres. Mr. A does not own land elsewhere, either in the Rift Valley or in Riara Ridge. His land was inherited, and he has his title deed.

Land Use: It is in land use that Farmer A stands out strikingly from the ordinary farmer (in appearance, one would mistake Farmer A for a 'labourer' on the farm, rather than the farm owner). Mr. A grows an infinite variety of flowers - either in pots or as seedlings - and what is more, knows all their names. He also grows about 10 varieties of high quality vegetables, 6 varieties of grasses, and Christmas trees - all for sale. Besides this, he keeps one grade cow (which was really the responsibility of his daughter-in-law). His main concern is with flowers and his farm acts really as a commercial nursery.

Mr. A showed great acumen in his farm practices. He seemed to have experimented a great deal with all sorts of crops and various crops under different conditions: For example:-

"Some of the plants I plant with fertilizer. Others I plant with equal quantity of manure. Then I compare the crops grown with manure with those grown with fertilizer. I have found that manure produces better results than fertilizer."
Or in the case of tomatoes:-

"In one row I have pruned the tomatoes so that only one stem emerges. In another, I have also pruned in such a way that only two stems. In another, I have done likewise, only there are three stems. One of the single-stem rows is overshadowed by the shade of some trees. All those rows I put the same fertilizer or manure. Then I compare how they produce."

Similarly, since Farmer A considers himself poor, he has devised ways of obtaining maximum coverage from some quantity of fertilizer by 'cross digging', rather than following the recommended furrows or trenches. So too, for a lot more practices. He is so concerned with perfection that his farm has become a model for others. But only part of it - a large part of his farm lies idle, what he calls lack of money to develop it. However, he seems to be making a success of those parts he has chosen to cultivate intensively.

Mr. A does not employ any farm labour, though he uses, doing all his work by himself. He even claimed that he sometimes waters his tomatoes at 10 p.m. by a hurricane lamp! As far as capital is concerned, Mr. A had some watering cans, a pipe-water supply (from the nearby Karuri village) but generally not much else. His operations were very labour-intensive and largely manual.

Farmer A had at some period acquired a loan of about £100 and had paid it off. But he was not keen on a loan, particularly for such products as vegetables or flowers which are subject to attacks by pests, and thus liable to cause losses. Instead, he wants to diversify more into commercial ley grasses (mainly for lawn etc.) These grasses can be extremely profitable, fetching as much as 25/- per 180 lb bag and so far there are very few people in the area who sell any grasses. Those who do, mainly sell Kikuyu grass as fodder or Napier grass. Moreover, grasses are not subject to diseases and so are secure in terms of yield.

However, whereas this diversification into a very rare crop may seem the natural progression from an early specialization in horticulture, in fact this diversification is more prompted by a search for security than an adventurous spirit which characterizes his adoption of tomatoes in the 1920s.
Throughout the interview Mr. A was insistent on specialization, calling for a Government Soil Survey which would effectively limit crop production zones on a very micro-scale, and in addition, he even advocated an amalgamation of farms into larger units, with the land being taken from the 'bad' farmers and given to the 'good' farmers; who would in turn employ the bad farmers as "labourers, thus creating, on a formal basis, a class of capitalist farmers. Farmer A was aware of the problems of surplus supply characteristics of market gardening saying "I do not plant what others are planting. When the supply of a commodity is low, then it is time to plant it". His problems were mainly problems of marketing and finding an outlet for his very sophisticated products in the face of stiff competition from both European nurseries in the neighbouring Kiara Ridge, and also, from the 'new' breed of African farmers in these areas, who are younger and more educated, whom he resents.

Farmer A has apparently mastered the technology of horticulture - indeed he is a specialist, and has very little to do with official Agriculture Agents for whom he shows nothing but contempt. But he has not yet established dependable links of exchange with his customers, who are mainly Asian wholesale firms. Instead, he sees Government controlled marketing co-operatives as the only answer, short of withholding supplies (which he tried to organize once with disastrous effects on himself).

Co-operative marketing provides a familiar model. In coffee, one has no alternative outlet but the co-operative. The routine of coffee production may be rigorous, but one is assured of some money (not profit) at the end of the season. Competition depends really on how much coffee one has and how meticulously one follows the extension agent's advice for quality control.

But in horticulture, there is neither the dependable marketing channel nor the expert advice to help in production. The process depends on individual mastering of a qualitatively different set of operations and the surmounting of new barriers to structural transformation. The transition is not purely one of changes in crops, but changes in scale of social relations and the ability to create, manage and adapt to new institutions, thus cumulative control over social factors as well as economic factors which affect the farmer's welfare.
Farmer A succeeded in the 1930s and 1940s partly because of his imaginative and innovative genius, and partly because he was to some extent a monopolist - at least till the 1960s. But when the scale of production changes, i.e., as more and more people come to adopt the same practices, one needs to extend this imaginative genius to new horizons. And the ability to do this demands more than a pioneering spirit. It requires the command of a slightly higher degree of education and a greater dependence on technical (not necessarily extension initiated) advice. In short, it needs more than the native capacity to improvise and experiment of Farmer A. A similar profile of Farmer B will show how.

**FARMER B:**

Farmer B is about 60 years old and knows that he was born in 1910. Like Farmer A, he too went to Kiambaa Primary School, and then proceeded to High School till 1929, when he left because of lack of money for school fees. He, too, started off as a teacher, at a monthly pay of about 24/-.

However, after teaching for 10 years and farming on the side, he decided to retire from teaching and take up farming fulltime. Meanwhile, he had learnt how to grow flowers from Farmer A and was growing various flowers such as roses and carnations by 1937. By this year too, he was keeping pigs (which was illegal for Africans, but nevertheless profitable to sell to local butchers). By 1944, flower growing became such a hazard because of theft - thieves would invade the shamba by night and transport the flowers to Nairobi - that Mr. B has since concentrated on vegetables, more notably, strawberries and mushrooms and asparagus. Mr. B keeps a ledger where he records in great detail the various crops he has grown and fertilizers he has used since 1934.

Currently, Farmer B owns 12 acres in the sub-location, but has use of his brothers land of about 3 acres, and owns some shares in a Cooperative Farm in the Rift Valley with 6 other partners. So in all, he uses about 15 acres for his farming. His compound is immaculately clean - well mowed lawns and 3 impressive, stone buildings, with electricity, telephone and a T.V. in his brothers house. His wife is a teacher, and helps with the farming. Besides farming, Farmer B keeps a little shop in Banana Hill, but he admits he is primarily a farmer.
None of his sons is old enough to marry, so he lives with his family adjacent to his brother's homestead. His land is registered, and he has a title deed.

Land use: Mr. B is primarily a vegetable and coffee farmer, with an output of nearly 15,000 lb. of clean coffee per annum and supplying, by regular contract to Nairobi hotels, six varieties of vegetables. He has kept some grade cows previously, but most of them have now died, and at present he has only a pedigree bull, which he hopes to sell to buy more cows.

Farm Practices: Like Farmer A, Farmer B shows a very high degree of crop husbandry. He too has experimented with various combinations of fertilizer and manure and settled for some mixture of Diamium Phosphate and manure. As regards hybrid maize, he had this to say:

"Local people in the markets say hybrid maize is hard, ....... moreover, birds like it very much. So it is better to plant ordinary maize."

But nevertheless, he had adopted hybrid maize in 1960. Similarly, he was amongst the first adopters of coffee in 1954 when restrictions governing coffee growing by Africans in the area were relaxed. So too in 1962, he was the first in the location to adopt Macadamia nuts - a crop introduced as a more profitable alternative to coffee. Apparently, at first, nobody would join him in planting Macadamia:

"I asked those who would like to try it (macadamia) and there was nobody. First I went to Thika and I got 6 trees, then I bought 32 trees from Bob Harris's horticultural farm. He did not give me any advice.

Throughout his innovative history, Farmer B has relied a great deal on technical advice. For example, a field technical officer for an oil company had been helpful with fungicides for potatoes. In his vegetable growing he relies very much on technical wisdom acquired (and stored in his ledger) through leaflets from distributors and in farming journals, carefully preserved. Also, his relations with extension staff have been more cordial: not only have there been several demonstration plots on his farm, but he has on several occasions demonstrated to other farmers. He has attended a 2 weeks course at a Farm Training Centre.
Although this was 15 years ago, he seems to have lost little in the period. As proof of his advanced farming, he has exhibited, and won prizes both at the Nyeri and Nairobi shows.

Farmer B has 2 permanent employees, paid 80/- p.m. and provided with accommodation and food. During peak periods such as coffee picking, he may have as many as 16 labourers, all picking coffee at 4/- per day.

Mr. B has a water pump, installed as early as 1950. But this is proving inadequate since he began growing strawberries and mushrooms on an intensive scale. He has since acquired a loan to install a more powerful pump, but feels he needs to be insured since one of his neighbours lost a valuable pump through theft.

Mr. B has also installed overhead irrigation for his vegetables. He has, to date, been given loans totalling £2000 by various commercial banks, and his relations with the expatriate and new African bank executives are cordial. On the whole, he relies more on the private capital markets for his finance than does Farmer A.

Marketing: Unlike Farmer A, Farmer B experiences little difficulty in disposing of his produce. Similarly, he does not believe, as Farmer A does, that the departure of Europeans from Nairobi and the area, in any way affected the volume of business in vegetables and flowers. On the contrary, Farmer B believes that:

"There are a lot of variety in business. Whereas I used to sell /2 bags of potatoes/ for 2 weeks, now I can sell it for one week or less. Previously, I could be asked for 40 bags of potatoes, all at once. But now there is a lot more business. Europeans did not diminish the market when they left."

Farmer B specifically attributes this growth in business to the more rapid rate of growth of Nairobi in the 1960s:

"Because of people in Nairobi were getting more, I thought of continuing in growing vegetables."

Asked about the problems he encountered in marketing, Farmer B said:
"I wouldn’t have problems myself because I know my buyers — because I made friends with the horticulture people long ago, so I can dispose of any surplus. Only the new grower who does not know the buyers ……… There is no problem when I am negotiating a contract — if he (buyer) likes your product, then there will be no problem."

Apparently, Farmer B had infiltrated the predominantly settler Horticultural Society of Kenya, and had established informal networks with the workers and the officials such that he could not only be sure of channels for marketing new produce, but would be put in touch with potential buyers. So unlike Farmer A, Farmer B has not only mastered the technology of production at a very sophisticated level, but has also managed, because of a greater degree of literacy to extend his frontiers, and to surmount successfully the institutional barriers, which, to Farmer A, prove crippling despite his obvious ability at technological innovation.

Farmer C is, in a way, a totally new phenomenon — a product of the complex innovative forces of the 1950 decade and the new opportunity structure of the 1960s. He is the natural heir to Farmer A and B, and is intellectually, perhaps the most fascinating, particularly in regard to possible measures at increasing rural employment and raising agricultural productivity and incomes in this zone. A similar profile of Farmer C will show why.

**FARMER C:**

Farmer C is 30 years old, and seems to have drifted into farming for lack of anything better to do. Having sat and failed his K.A.P.E. in 1959, he stayed at home applying, without any success, to various training schools and for various jobs. For a period of three years, he stayed at home, tending his father’s chickens (200), and growing little patches of tomatoes and selling the seedlings to other neighbours to make pocket money.

Very soon, a neighbour lent him a plot to grow vegetables (about 0.3 acres), which he did with great success. The lender was jealous and very soon demanded a ‘rent’. Since the lease was not registered as such, but rather seems to have been under the traditional 'Ahoi' system, Farmer C had no alternative but to give up...
the land. He then worked as a labourer for some time, saving money to start a vegetable growing enterprise on a commercial scale.

Unlike Farmer A or B, Farmer C does not own any land, but instead has leased 5 acres for a period of 4 years at an annual rent of £70. He still lives on his father's farm - 4 acres - in a small wooden bungalow, recently built. Farmer C is a bachelor, but helps his brothers, who are in school, with school fees.

Land Use: Mr. C rents 5 acres in a valley bottom which is partly water logged, but has been greatly improved by drainage, all undertaken by Farmer C. The owner has leased the land because he considered it too difficult to exploit - the soil is heavy clay, and to plant vegetables successfully involves transporting the red soil from the hillsides and mixing it with the clay. The operations are very labour consuming, but nevertheless Farmer C has transformed the water logged part (about 2 acres) into a maze of seed beds, and orchards.

Farmer C is not really distinguishable because of the varieties of vegetables he grows, but rather because of how he grows them. In terms of technical expertise he matches Farmers A and B. But he seems to excel them in a totally new frontier - that of planning or timing his production. Though Farmers A and B tried to match their supply with demand, the scheduling of Farmer C is such that he was assured of a known quantity of output on a weekly basis throughout the season. For example, he had melons in different patches such that he could pick pick an average of 200 lb. per week for a period of 4 months, and similarly with tomatoes and runner beans (which seemed to be his main speciality).

Farm Practices: Farmer C showed a wide grasp of technical detail as regards market gardening. Not only did he know which seeds or varieties were best suited to his land, but also the fungicides to apply to them. For example, Florida melons were better suited than Californian melons to Kenya, similarly B53 potatoes were more resistant to frost (a serious hazard in the area) and potato blight.

But unlike Farmer B, Farmer C has never gone to a farming school, and neither has he ever had any advice from the extension agents - in fact, his only experience with extension agents was very unedifying (the extension agent advised him to dig drains upwards instead of downwards, and Mr. C dismissed him!) Since
several school parties have visited his farm, but Mr. C is not very keen on these visits since they take up a lot of his time.

It is very difficult to isolate what have been the greatest influences on Farmer C’s great agricultural knowledge. Locally, he is known after a certain Mzungu who used to grow vegetables just as efficiently. But though he answers to the name, Mr. C does not recognize any such influences, since the Mzungu left the country while Mr. C was still a school boy. Though Mr. C’s father used to transport vegetables to Nairobi from the S. Kinangop, Mr. C does not feel this unduly influenced his growing vegetables.

It seems, however, that like Farmer B, he places great emphasis on technical pamphlets and above all, on an intricate budgeting procedure.

Mr. C takes his farming very seriously and is very time conscious. The day’s operations are planned in advance in a rough ledger. He budgets how much he is to pay in terms of labour, insecticides, fertilizers, seeds, transport or other incidental expenses on the farm. This way, he is able to assess how much he is making or losing.

Mr. C uses a Tractor Contractor to plough and then hires women and young school leavers to do the harrowing, weeding, etc. Mr. C does not believe in a permanent wage labour force, though he uses a great deal of labour — sometimes as many as 16 women — and his monthly expenditure on labour is, on the average £50. He knows that permanent employees tend to spread work, and since his production schedule is so tight, he cannot afford a delay of one week for any operation. However, though he pays by piece rates, he knows that after 1 p.m. the labourers will have passed their most efficient peak and so he dismisses them, so that they do not spoil his tender seedlings through fatigue and carelessness.

Marketing: It is in marketing that this ability to plan helps him a great deal. The timing of his output is such that he is assured of a good price. The problem with market gardening is that since there are very many producers and a lot more buyers,
prices fluctuate not only daily, but also hourly. Since vegetables are highly perishable, it is important to have in stock, an output that one can not only transport easily and cheaply, but also dispose of in the market, preferably before 6 a.m. in the morning since prices are highest at this period. Supply is less at such an early period, but by 8 a.m. too many growers will have reached the main market. So speed of delivery is crucial. So too is the scheduling of the quantity of produce to the market. Like in the Cobweb cycle in Economics, the unwary producer tends to over respond when prices are high. But since the period of fluctuation in market gardening is very brief, even compared to the short period in production of vegetables, such an over response can be disastrous. Mr. C gave us the illustration of one of his Mzungu competitors, who had just begun growing melons. In the dry season the price was very good since melons were in short supply. The Mzungu, who had the advantage of intense overhead irrigation facilities got a very good price in the dry season for his melons. But in the wet season, he had over responded by planting more than 10 acres of melons, so he fetched a very poor price. Knowing the structure of demand and the response capacity of your competitors is therefore equally crucial.

Unlike Farmer B, Farmer C does not believe in supplying produce on permanent contract, partly because he feels he cannot meet large orders, but primarily because, as he said, prices fluctuate so much in the vegetable market that if one is tied to a fixed price, one loses a lot when prices are high for the sake of security of a 'normal' price. So he prefers to take risks and sell in an unregulated market. But he does not carry all the risks, since when he has a lot of one particular commodity, say runner beans, he prefers to sell to wholesalers from his farm, partly to cut his loss, and to minimize his transport expenditure.

We have characterized Farmer C as primarily an entrepreneur who is making a living through farming, though I doubt whether he wants to make a career out of farming.

Unlike Farmers A and B, farming to him is not purely a source of security and income. To him, farming is a stepping stone to some more complex commercial undertaking. His managerial skills, his knowledge of a highly technical economic operation - the marketing of green vegetables - without relying either on
familiar (e.g., co-operative models) or secure (e.g., supply of produce by contract) modes of relationships, clearly places him a degree above Farmers A and B.

Farmer C is particularly significant (policy wise) because he forms a model for what an enterprising school leaver in the rural area can do. Furthermore, he demonstrates that farm ownership is not a necessary condition for success in farming as such. What is essential, is rather the provision by the state, of mechanisms which govern such transactions as leases on a rational basis such that those who want, and have the ability to exploit the land, even for short periods, can do so, with some degree of confidence.

Perhaps we need to qualify this statement. Obviously, a very short lease will curtail any great improvements or investments to the farm, and Farmer C felt positively constrained in this respect. But if our concern is with improvement of rural incomes in the short run, then surely such a system offers an alternative strategy where the opportunity structure (the proximity of a prosperous market) exists as in Nairobi. However, it encourages intensive land use, in an area where land is an imminent constraint. Apparently, what is required is the 'capitalist' dedication and single minded exploitation of ones productive possibilities. This is what I call the entrepreneurial spirit.

Obviously it would be superficial to read a unidimensional evolution or transformation in the rural economy of this peri-urban zone, as reflected by the profiles of these three farmers. Neither should we construe the historical setting as synonymous with each character. These were the individuals at the frontiers of their economy and the majority of the farmers did not practice such a complex agriculture, nor understand, to the same degree, the intricate chains and links between the Nairobi market and the Kiambaa rural economy.
But these 3 profiles help to highlight more the magnitude and structure of problems entailed in a rural transformation. Farmer A perhaps best illustrates the need in a society of rapid transformation, of individuals with an improvising mind, relying on native intelligence and endowed with a great deal of patience as they pioneer a new production process or new crops. Such people are perhaps best compared to craftsmen who successfully master an art but cannot master the intricacies of marketing or book-keeping to assess their progress. Like African industrialists, their horizon is the perfection of a craft — Farmer A seemed almost too complex in some of his farm practices and one could say his farming had become a fetish. Farmer B may perhaps be analogous to the pioneering African businessmen — innovative in terms of new products and combining resources more imaginatively to serve a perceived market or exploit a new opportunity, but with recourse to greater technical advice and involved in a wider network of exchange, and apparently able to manage and benefit from such relationships as shown by the ease with which he acquired markets and loans.

Farmer C is distinctive because, not only does he successfully exploit a very complex set of resources and relationships, but he does so in a highly non-familiar way — i.e., leasing land and intensively using the scarcest resource — land. He thus creates a new opportunity for those initially disadvantaged by the lack of land, by demonstrating that one can "go back to the land" without necessarily owning the land.

Together, these 3 farmers demonstrate that as the economy gets increasingly differentiated, so too the thresholds to be surmounted by the successful entrepreneurs and farmers become increasingly complex, the risks higher, and correspondingly, the profits higher. For example, Farmer C, was making as much as 700/- per quarter, from a piece of land 7 yd. by 4 yd., purely from selling tomato seedlings grown on the patch!

Together, these 3 farmers, constitute a very untypical segment of farmers from an 'untypical' zone, i.e. the Nairobi/Kiambu peri-urban zone, and generalizations from these cases, would, therefore, be extremely hazardous. But since the theme of the workshop in "Strategies for Improving Rural Welfare", I think we must boldly face some of the problems which appear 'untypical' (if ever there was a 'typical' area!) and, consequently, problems of the future, as well as the present.

We must concern ourselves with the 'untypical' because they are the ones who define the patterns of new productive frontiers, and perfect the tools of cumulating control over change in environmental phenomena, and more significantly, share in the main burden of risk taking as the economy becomes more differentiated and specialized. Similarly, we have chosen an unfamiliar production process - market gardening, because intellectually, it helps define more sharply some of the institutional and qualitative barriers in the process of the transformation of an economy.

Consequently, several tentative hypotheses and areas of research are identified:

1) Government extension agents ought to be trained specifically to cope with such a complex productive zone. A non-specialised agriculturalist approach, concerned with soil conservation and crop rotation is outdated for such an area. Training in marketing, book-keeping, budgeting and costing should be an essential part of the training of any extension staff to serve in such an area. Additionally, specialists training for extension work in such activities as pig keeping and poultry farming should be an integral part of any extension education in the 70s.

2) Just as in business, the shortage of capital is more apparent than real. Farmers who are technically competent, such as Farmer A, and complain of frustrations for lack of capital more often than not are ignorant either of the sources of advice on how...
to penetrate the capital market, or unable to
manage unfamiliar relations, either between commercial
technical field officers, bank managers, and most
crucial, the competitive network of marketing.
More government control of the production and marketing
of such commodities as vegetables is neither called
for nor beneficial, since the producers are so
scattered, the quantities so low, and the risks
so high that the government is unlikely to have
expertise or manpower to handle such an intricate
process. Instead, the government can help by
providing some of the more basic infrastructure, and
piped water was the most acutely felt need, partly
because the interviews were conducted during the
previous drought.

3) The benefits to accrue from water would be in terms
of a more optimal flow of produce to the market,
ensuring a reasonable income to the less well-off,
and enabling the more advanced farmers to diversify into
even more complex horticultural production. One of
the advantages of the European (and more recently African)
producers of Riara Ridge is that they have an assured
water supply and can afford to exploit markets even as
far afield as Germany (by air freight). A fixed
initial charge would be made with differential pricing
according to use. This way, not only would the
farmers benefit in terms of increased incomes, but
urban consumers would benefit from lower and less
fluctuating vegetable prices, with a more optimal
supply stream to the Nairobi market.

4) Some investigation into land transactions is called for.
The turnover of land ownership (as can be seen from the
Appendix), indicates that speculation in land is
spilling over into the rural areas. The process of land
sub-division and amalgamation seems to be at work on a
larger scale than the figures for transactions would
show, and an investigation into who is selling to whom,
and for how much and why, would shed more light into
the nature of landlessness in the area. The Land
Transactions Study currently under way is designed to
serve as a baseline for such an inquiry.
The possibility of dovetailing the agricultural rural activities of such societies as 4 K Clubs into a more formal commercial production as illustrated by Farmer C, as an alternative form of rural employment for the Youth, should be explored. Government should help such youths acquire the leases and wherever possible, act as guarantors to any loans. But since so much conspicuous success of such a venture would draw the young and the landless into conflict with the old and landed gentry, a provision should be made to absorb the successful youth as part of the extension staff advocated for in (1) above.

Lending Rural Credit: As Appendix 2 indicates, there is quite a lot of lending in the rural areas, using land as security. What is not clear, (and therefore needs investigation) is the proportion of loans used for agricultural purposes in order to raise output. In any case a more detailed analysis of rural credit is long overdue, and research in this area is suggested as a priority. We hope, in a small way, to shed more light on this aspect of rural development, once the data from the larger Banana Hill study has been analysed.
APPENDIX I: LAND TRANSACTIONS IN KIAMBA: FARM UNITS: 1958-70:

The question of land in Kikuyu country is a very intricate one and Kiambaa is no exception. Land transactions, and litigations occupy a great deal of administrative resources, and one cannot hope to deal exhaustively with such a subject in an appendix. But the data forms a useful background to the problem of land use transformation, and hence, I feel some impressionistic analysis is in order. It goes without saying that until the results of the larger study are fully processed, no firm inferences should be made from the data presented in this appendix.

All the data presented was collected from Kiambu Land Registry in the period of Jan/Feb 1971. The figures were as up-to-date as Feb. 1st 1971, but I chose to confine the analysis up to Dec. 1970. Compared with other sources of information concerning land in Kiambu, the Land Registry was by far the most accurate, and I had access to details on all transaction through the office.

First it is important to distinguish the various forms of transactions. The most common form is land purchases, defined as transaction whereby money in payment for land is exchanged, and the Title Deeds consequently altered and transferred to the new owners. There are two forms of purchase - single owned purchases, and purchases in partnerships or common proprietorships. The former are more frequent as can be seen in Tables 1 and 2. It is interesting that there were no purchases in common before 1962 in the location, but whether this is significant or not is difficult to say, since we have no information about the relationships between the buyers, or the details about the sellers - their age, income, occupations (particularly ownership of other farms and businesses) which would give us a clue as to who buys land from whom and why. Unreflected by the data in Table 2 are the extreme intricacies in the shares and the minuteness of some of the land owned in common, for example a farm 5.3 acres in size may be held by 3 partners in the proportions 31/53, 11/53, 11/53, or a 'Farm unit' of 0.64 acres may be shared by as many as 5 partners! What this means in terms of land use is difficult to fathom, but one suspects that not all these
partners live on the land, though they may have an equal claim to the land. In most cases, the number of partners is two. Though most of the owners seem to have a common surname, there is no guarantee that they are brothers - most probably they belong to the same clan - and partnerships between unrelated persons are not uncommon.

Table 2 in a way underestimates the quantity of land held in partnerships, since it excludes land held in partnerships through successions, which is indisputably held by members of the same family or brothers. There were 29 such cases, making a total of 80 land units held in partnership out of a total 1700 land units in the 3 sublocations - Ruaka, Thimbigwa, and Waguthu. One of the more interesting features of land held in common is that the partnership is often very short lived, and the tendency seems for one partner to sell to the other or complete legal separation with two independent title deeds is sooner or later established.

Of the 3 sublocations, Waguthu (the sublocation furthest away from Nairobi) seems to have a proportionately higher number of proprietorships in common, 19 out of 433, compared to Thimbigwa, 28 out of 863, and only 4 in Ruaka, out of 432. From common proprietorships, land values seem to have attained their peak in 1966, with land valued at 1600 shs. per acre.

11. Farm units in this case refer to land in areas other than those designated 'Townships' such as karuri or Kiambaa. The distinction is not by land size, since there are some town plots which are larger than farm units, and farm units which are smaller than town plots. The analysis refers to farm units, though one suspects that the frequency and volume of transactions involving town plots is just as high (if not higher). Certainly, the value of land in the 'towns' is higher, since it is in the townships that amenities such as water and electricity are available at lower cost. The townships, particularly Karuri, are also attractive to wage earners in Nairobi, since the rents are comparatively lower and transport just as frequent as within the City.
Single-owned Purchases: Tables 1, 4, 5 and 6.

The years 1963/1964 seem to have been the watershed in land purchase is concerned in the location. Between these two years, land transactions tripled. (See Table 1 col. 1). This may in part be due to the opening up of the settlement schemes in the Rift Valley and the increased opportunities for land ownership outside the traditional Kikuyu zone at this period. But it is difficult to reach a firm conclusion since it is more difficult to trace the sellers than the buyers (who would be the current owners and, presumably, occupiers).

After 1963, the volume of land that changed hands, seems to have stabilized, after a drastic increase from 10.27 acres to nearly 70 acres, though the price seems to have been fairly stable in the period of 7 years between 1963 and 1969 - the price rising from about shs.1500/- per acre to shs.1800/- per acre. At the sub-location level, land values seem to have fluctuated most in Ruaka (the Sub-location nearest Nairobi - See Table 4). Why land should have been more expensive in Waguthu area (Table 6) up to 1968, is difficult to explain for there seem to be no particular factors at work in Waguthu which would be different from Ruaka, or Thimbigwa where values have been more stable. Currently (1970) land seems not expensive at Ruaka, at shs.2600/- per acre (Table 4), with values for Thimbigwa and Waguthu apparently declining. In the 3 Sub-location land values have more than doubled since 1958, with land fetching as much as 1800/- per acre in 1969. What is perhaps more significant is that, on the whole, the volume of land changing hands, seems to be steady. (Table 3, Col. 2).

But the frequency with which land changes hands is deceptively steady, that some land does change hands without necessarily being entered under purchases is evident on an examination of some of the land files. It is not unusual for a piece of land to change hands nearly 4-times, all in a space of one year! Such transactions are not entered under purchases, but are filed separately under 'considerations' or 'transfers'. These are very intricate indeed, and cannot be analysed in Tables.

It is because these transactions involve a great deal of sub-divisions and amalgamations that we hope to treat them separately, since they directly affect investment decisions of farmers and, more significantly, point to the process of amalgama
In the period 1958 - 1970, about 500 acres was subdivided out of a total of 13,121 acres. Out of this, nearly 1/3 was further combined with other holdings. Altogether there were about 60 cases of subdivisions and about 20 cases of amalgamations.

But this total picture, obscures the great intricacies in land subdivisions. What seems to be the most prevalent form is for brothers to succeed to a common land title, whereupon those brothers who do not live in the area, or are in other jobs sell their shares. In some cases, the buyers seem to be neighbours or adjacent farm units, but this is difficult to establish because it does not follow that land units with consecutive farm registration are necessarily contiguous on the ground.

The majority of subdivisions lead on to selling. What is interesting, though is that the average size of holding subdivided seems to be above average, (8.14 acres, compared to 4.74 acres, which is the average size for the location). Invariably, it is the smaller portions which are sold, with the owner retaining the larger part.

Contrary to expectation, it seems that those who buy, on the whole, seem to have medium holdings (about 5.53 acres). The average piece sold is about 3.02 acres. So what seems to be happening is that the large holdings are reduced and the average holdings increased so that a new class of medium holdings is created. But this is difficult to establish fully without knowledge of other land purchasers, who predominate in the land market. My guess would be that those with extremely small holdings are normally bought outright, whereas land owners with above average holding find it profitable to sell part of their holdings, either as a means of raising money for an investment or school fees.

12. Strictly the proportion is higher than this. Since we have only considered 3 sublocation of Kiambaa which form about 3/5 of the location, out of the total acreage in the location of 13,121 acres.
But the process of subdivision is not a one phase phenomenon: in some instances, 2 or more subdivisions of pieces sold may occur. As an example of such a process, we may start with Farm A which is 14.2 acres. A is subdivided into B and C of 2.25 and 11.95 acres respectively. B is sold to D, who is a neighbour of A, who holds 18.1 acres, so that a new holding D of 20.35 acres is created.

C is further subdivided into F and G of 5.50 and 6.45 acres respectively. F is sold to J who is neighbour to D. J now buys part of H. (who is G's neighbour), and F and ½ H are combined into a new holding P, which is about 7 acres. G is further subdivided into L and M, of 5.0 and 1.4 acres respectively. M is sold, and L is now the holding of A.

Leases:

One other form of transaction is leases. Though our Farmer C operated under a lease, leases to individuals are rare, the majority of land being leased either by the county council or for business premises - i.e., 17 out of 24 cases of leases. But from the impressions gained in the field, there seems to be far more people who have rented their land but have not legally registered with the Registrar for Lands at Kiambu.
LENDING AND LOANS IN KIAMBA LOCATION:

One of the main justifications for the registering of land and the issue of Certificates of Title Deeds, was that this would give security to the farmers not only for investments, but more significantly, the Title Deeds could act as security or collateral for borrowing either from the Public Agencies, (such as Agricultural Finance Corporation) or from private Commercial Banks. The case of Kiambaa Location confirms this, with a total of 516 loans to 282 people having been issued between 1959 (when land registration was completed) and January, 1971, worth nearly £7 million shillings. (see Table 2.1). In the Banana Hill Study, we have identified 51 recipients of loans - approximately corresponding to our sample fraction i.e., 1/5. Out of this £7 million shillings, 1,038,000 shillings have been lent to the sample population; i.e., 1/5 of the value of the loans. Private agencies, i.e., the commercial banks (National & Grindlays - and currently the Kenya Commercial Bank, Barclays Bank, Standard Bank, Bank of India, Bank of Baroda and Ottoman Bank) have contributed more than twice the loans in the locations compared to public agencies. On the other hand, for the sample population, private agencies combined contributed as much as 9 times the funds from public agencies. In so far as the frequency of loans is concerned, it would seem that only 15% of the sample population received loans, but the loans were larger, amounting to 25% of the funds lent.

An examination of the 3 sublocation shows that area 2 (i.e., Thimbigwa sub-location) has a greater tendency to receive loans than would be expected from the number of land holdings - which is equivalent to the other two sublocations combined. From total loans to the 3 sublocations area 2 has received 65% compared to 17% in area 1, and 20% in area 3. But the difference is even more striking when we consider the sample population - area 2 has 79%, area 1, 13%, and area 3, only 8%! There is a tendency for the larger farms to receive large loans. One of the facts concealed by Table 2.1 is the distribution of loans which is highly skewed with a few individuals receiving as much as 10% of all the loans in the 3 sublocations, and 45% of the loans in the sample!
other interesting fact is that the public agencies drastically increased their volume of lending by nearly 7 times in the period 1962-1966 compared to the private agencies which were more cautious in the early part of the decade. However, private agencies seem to have responded more vigorously and consistently in the latter half of the decade, 1966-70. But on the whole, the rate of lending of private agencies has been twice as large as that of public agencies from 1962-1970, when one could expect political developments to influence lending decisions of firms more positively in favour of Africans than say from 1959 to 1961. It would be interesting to breakdown the volume of lending by purpose of loan. But it is impossible to ascertain this from the land files, short of interviewing the recipients.

One suspects that the bulk of the loans from private agencies is for commercial purposes, with the public agencies (land boards etc.) issuing smaller loans for livestock or agricultural development. More recently, the Agricultural Finance Corporation has played a significant part in lending for the purpose of purchase of land or larger farms, and one suspects that the majority of A.F.C. loans in this area, are used for this purpose.\(^{13}\) For our purposes in the larger study, we hope to carry out a further and more thorough analysis of the nature of rural lending as far as agricultural production is concerned by examining the loan distribution by size of holding, crops grown, or cattle kept, land status (whether owner has Title Deed) land ownership elsewhere and occupation and ownership of businesses.

What has been presented here is merely an indication of the extent of lending and borrowing in Kiambaa Location and should not be interpreted either as an assessment of the performance of the various agents, nor of the other factors that may be at work in this location. An investigation into this whole area of rural credit is long overdue, and I hope that by this brief analysis, I have provoked a keen interest for research in the area.

13. Interviews with several farmers at Riara Ridge (the former se area of Kiambu) confirm this.
### Table 1: Kiambaa (3 sublocations): Total Single Owned Land Purchases: 1958-70.

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency</th>
<th>Total Acreage</th>
<th>Total Value in shs.</th>
<th>Average Price per Acre shs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>9</td>
<td>25.7</td>
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</tr>
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</table>


### Table 2: Kiambaa: (3 Sublocations): Total Land Proprietorships in Common: Purchases: 1962-70.

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency</th>
<th>Total Acreage</th>
<th>Total Value in shs.</th>
<th>Average Price Per Acre shs.</th>
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### TABLE 3: KIAMBAA: (3 SUB-LOCATIONS): TOTAL PURCHASES OF LAND 1958-70 (INCLUDED PROPRIETORSHIPS IN COMMON)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FREQUENCY</th>
<th>TOTAL ACREAGE</th>
<th>TOTAL VALUE in shs.</th>
<th>AVERAGE PRICE per Acre in shs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
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<td>783</td>
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<td>40</td>
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<td>TOTAL</td>
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### TABLE 4: KIAMBAA: RUAKA SUBLOCATION: SINGLE OWNED LAND PURCHASE: 1958 - 1970:

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<th>YEAR</th>
<th>FREQUENCY</th>
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<th>TOTAL VALUE in shs.</th>
<th>AVERAGE PRICE per Acre in Shs.</th>
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<tr>
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<td>6.54</td>
<td>17250</td>
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<td></td>
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<td>59</td>
<td>125.66</td>
<td>174379</td>
</tr>
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</table>

Total land holdings in sub-loc. = 432 as of Jan. 1971.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FREQUENCY</th>
<th>TOTAL ACREAGE</th>
<th>TOTAL VALUE in shs.</th>
<th>AVERAGE PRICE PER ACRE IN shs.</th>
</tr>
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<tbody>
<tr>
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<td>2150</td>
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<td>544353</td>
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<table>
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<th>TOTAL VALUE in shs.</th>
<th>AVERAGE PRICE PER ACRE IN shs.</th>
</tr>
</thead>
<tbody>
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<td>1248</td>
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<td>1510</td>
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<td>8</td>
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<td>22200</td>
<td>1153</td>
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<td>70</td>
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<td>142471</td>
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TOTAL HOLDINGS IN SUB-LOCATION = 443 AS OF JAN.1971.
### Table 7: Kiambaa: Land Purchases: Proprietorships in Common

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency</th>
<th>Total Acreage</th>
<th>Total Value in Shs.</th>
<th>Average Price per Acre in Shs.</th>
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<td>1962</td>
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<td>1525</td>
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</tr>
<tr>
<td>69</td>
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<td>Total</td>
<td>28</td>
<td>136.19</td>
<td>186350</td>
<td>1368</td>
</tr>
</tbody>
</table>

**Note:**
1) There were no Proprietorships in Common before 1962 in the sub-location.
2) There were only 4 cases of Proprietorships in Common (Purchases) in Ruaka in 1970, with none before that date.
3) These four cases involved 14.8 acres, valued at 48600 Shs. per acre.
4) There are 432 land holdings in the sub-loc.


### Table 8: Kiambaa: Land Purchases: Proprietorships in Common: 1962-1970 Waguthu Sub-location

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency</th>
<th>Total Acreage</th>
<th>Total Value in Shs.</th>
<th>Average Price per Acre in Shs.</th>
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Total Holdings in Sub-location - 443

<table>
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<th>YEAR</th>
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<td>1968</td>
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<td>26</td>
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... Con'd.
<table>
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<td>Jan</td>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>10</td>
<td>17</td>
</tr>
</tbody>
</table>

**NOTE:**
1) PRIVATE SOURCE INCLUDE ALL COMMERCIAL BANKS NOTABLY: STANDARD, NATIONAL & GRINDLAYS
(KENYA COMMERCIAL BANK) BARCLAYS; & OTTOMAN BANK.
2) PUBLIC AGENCIES INCLUDE: THE AGRICULTURAL FINANCE CORPORATION (AFC) AGRICULTURAL CREDIT OFFICE
(DISTRICT LEVEL COMMITTEE) AND KENYA AFRICAN LAND DEV. BANK, I.C.D.C. AND OTHER DISTRICT
LOANS COMMITTEES.
LAND USE AND LABOUR PRODUCTIVITY UNDER GROWING LAND SHORTAGE

with special reference to conditions in the Kilombero Valley - Tanzania

Eckhard Baum

Department of Agricultural Economics
University of Nairobi

INTRODUCTION

Farmers all over the world are extremely concerned to furnish their labour with certain capital goods which ensure an adequate standard of productivity. In extensive shifting cultivation there is almost one capital good only, which is the land. As the availability of this factor is ample, returns to the working hour are generally relatively high. However, with growing population pressure the man-land ratio is gradually changing. Increasing land shortage which is almost inevitably linked with a growing population is a constant cause of strains. "Africans have shown a capacity for responding to changing population pressures." However, this neither means that the adjustment always went along smoothly, nor that farmers proved able to prevent food shortage when the land available became insufficient.

Under conditions of ample land the man-land ratio was adjusted by migrations to new sites. This is expressed by Allan when he writes: "Wherever agricultural people increased in numbers beyond the capacity of the land to absorb them, groups and subtribes could hive off and move to fresh land in which to establish a new focus of settlement." In the past a straight-forward movement of tribal groups has been a common feature. Today this phase can only be traced in tribal legends telling of long-term migrations of clans, subtribes, and tribes. The movements have frequently been stopped by more powerful tribes, and finally been terminated by the emergence of colonial administration. Thus, farmers

have been forced to adopt spatially circle-like rotations instead of a straight-forward search for new land. This marked the beginning of a gradual move towards permanency of settlement.

Shifting cultivation is a sound system under conditions where ample land is available. If other means to restore soil fertility are absent or uneconomic it is most rational to abandon the land and give it a resting period at regular intervals. In the Kilombero Valley there are two types of fallows which, in the remote parts, are being practised at the same time. (a) Long-term fallows of up to thirty years or more allow the regeneration of bush or forest vegetation and restore soil fertility. (b) Short-term fallows of two to four years keep weed growth at bay which becomes a serious obstacle to farming after several subsequent cropping seasons. Thus, farmers shift their fields at short intervals several times in the neighbourhood of their established homesteads, until decreasing soil fertility forces them to leave the place which they might perhaps only clear again after decades. Under growing land pressure in more densely populated areas long-term fallows are being reduced and finally abandoned, thus, giving rise to decreasing soil fertility and the stagnation of yields at a low level.

Among Kilombero valley farmers there are indications of a strong desire to settle down permanently. Shifting of homestead plots is considered to be a fate rather than a normal habit. There are strong links of people to a place once occupied, to the known surroundings, or to the ancestors' graves near by. People living in the neighbourhood of minor or major settlements where there is access to shops, schools, hospitals, etc. prefer to stay in this more advantageous social habitat. Although, land shortage should not be considered the only cause of development here, it can, in fact be a strong promoter of it.

The step from shifting cultivation towards permanent farming is by no means smooth. It is rather a long way of trial and error, as well as of success and failure, until finally feasible means of permanent farming are being practised. Ruthenberg adopted the phrase

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4. Baum, E. Land Use in the Kilombero Valley.
   Reading, 1960.
"semipermanent farming" for this intermediate stage of development which is characterized by its own array of problems. This stage is somewhat typical for many parts of Tanzania and Africa today. Although problems of other stages are by no means less serious, discussion in this paper is limited to those of semipermanent farming.

Characteristics of semipermanent farming.

It is a characteristic feature of semipermanent land use that the homesteads are more or less permanently occupied. They are surrounded by a continuously cultivated garden plot, generally planted with a considerable number of fruit trees. The annually cropped land which normally takes the major part of the total farm land is still being shifted in short-term rotations, in order to control weed growth. The degree of permanency in semipermanent land use, apparently differs a great deal from farm to farm and from area to area depending on the prevailing conditions.

Ruthenberg adopted the "R"-Factor (R for rotation) to indicate permanency of farming. It derives from a simple equation: 

\[ R = \frac{C}{C + F} \]

where C stands for years of subsequent cultivation, and F for years of fallow. Under conditions where land is being cultivated for three to four years after which it is fallowed for the same period, R equals 0.5, being a somewhat typical case for semipermanent farming. In the Kiberege Strip, a relatively densely populated part of the Kilombero valley the annually cropped land of 26 farms had an R of 0.57 (average cultivation period of 5.1 years, as opposed to 3.8 seasons of rest).

In the early stage of development the range of crops grown on annually cultivated outlying fields is generally small and little diversification takes place. If an annual crop provides for the staple food, like rice in the Kilombero valley, the major part of these fields

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8. Baun, E.: Land Use ... op. cit. p.34.
is occupied by this crop. In case a paying annual cash crop has been introduced it will be an addition to the food crops at first and may gradually take over a considerable share of the available land. In the Kilombero valley 84 per cent of total farm land was occupied by food crops in 1965, and only 16 per cent by cash crops, mainly cotton. In the Sukumaland, on the other hand, food crops occupied only 54 per cent as opposed to 46 per cent cultivated with cotton.

The importance of perennial crops in semipermanent farming.

Perennial crops, mainly fruit trees, play an important part in the improvement of semipermanent farming. In the Kilombero valley trees are generally planted on the garden plot surrounding the homestead. They supply shadow and organic material to the soil. In addition household refuse is willingly or unwillingly deposited on this plot, maintaining and improving soil fertility and, consequently enabling farmers to cultivate it continuously. It is quite obvious that farmers practising extensive shifting do not plant trees, since they do not stay long enough at one place to get returns from them. However, with growing permanency more and more fruit trees are being planted. It is, therefore, quite feasible to estimate the degree of permanency by the amount of tree crops planted, or by the proportion of total cultivated land being cropped perennially. In the Kilombero valley 14 per cent of the farm land of 58 sample holdings consisted of perennially cultivated garden plots in 1965. A farm management survey of 42 holdings in the vicinity of Ifakara carried out in 1969, showed that 25 per cent of total farm land was being occupied by homestead plots with a high density of fruit trees. Farmers settling in the neighbourhood of Ifakara, which is the commercial centre of the area, cultivate their holdings with a higher degree of permanency than in other parts of the valley.

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9. Baum, E.: Land Use ... op. cit.
11. Baum, E.: Land Use ... op. cit. p.41.
12. Survey carried out by students of the Kilombero Agriculture and Research Institute in 1969.
It is necessary to come back to the above mentioned R-factor, at this point. Under conditions where a considerable part of the farming is being cultivated permanently, the factor needs adjustment. In the case where R of the outlying fields equals 0.57, but 14 per cent of the farmed area is permanent the adjusted R-factor will equal 0.63. There are apparently less problems to maintain soil fertility in areas where staple food or an attractive cash income are being supplied by perennial crops. Both occur in Bukoba where coffee-banana gardens actively improve the quality of the land.

With growing land shortage land is more and more valued as a scarce factor. With the occurrence of permanent settlement farmers tend to fix their boundaries and carefully observe that their right over the land is recognized. Even in a country like Tanzania where there is no official ownership of land, permanently occupied plots are regarded as owned by the farmer. This fact is described by Raid in the Bukoba District where farmers consider their coffee-banana lands (Bibanja) as private property, and where regular leases, as well as buying and selling of this land is quite common. In Kenya land was de facto owned by the farmers, long before individual claims became officially recognized. Native law and custom originally did not allow individual ownership of land, but trees were actually possessed by the person who planted them. In the Kilombero valley it can be observed that some farmers plant scattered fruit trees (e.g. cashew nuts) all over their fields, still cultivating annual crops in-between, in a manner which could be characterized as "internal shifting". Regular short-term cultivation-fallow sequences are being practiced among the fruit trees. By doing this farmers legalize their

\[ R = \frac{88 \times 0.57 - 14 \times 1.0}{100} = 0.63 \]

15. de Wilde, J.C. et al.: Experiences ... op. cit. Vol. I,
claim over the land and, at the same time, make use of the ability of the trees to maintain soil fertility on a larger area.

Change of working patterns.

Growing land shortage causes a general change of behavioural patterns of farmers. It does not only affect the utilization of the factor land, but also labour. Since both are interrelated very closely, it is worthwhile to say a few words about the characteristics of the labour economy in semipermanent farming. There are three complexes which are of major interest:

(a) The seasonal distribution of labour,
(b) the division of labour between sexes, and
(c) the role of hired labour.

(a) Under conditions of extensive shifting cultivation labour input for clearing new land takes a relatively big share of the yearly work performance. It almost equals the labour input required for the rest of the cultivation procedures. When long fallow periods are abandoned, heavy clearing is no longer required. Instead, seed bed preparation, weeding, and harvesting increase in labour requirements, partly due to the need to cultivate larger areas, or to an unfavourable soil texture, and more vigorous weed growth. When little crop diversification has taken place, this results in an uneven distribution of labour use throughout the year, with marked labour peaks and seasons of underemployment.

(b) The division of labour between sexes is of major importance in any farming community. In the Kilombero valley there are three forms which seem to follow each other in the process of development. In extensive shifting cultivation there is a clear division in respect to different jobs, i.e. men perform clearing as the heaviest task, and women do the rest of the cultivation procedures on the relatively small fields. When clearing of bush or forest vegetation is no more required, a division of labour with respect to plots comes into being. Men and women cultivate their own fields almost equal in size. When diversification, mainly with respect to cash crops is gaining more importance, women take care of these, whereas women concentrate on subsistence production. These divisions are not absolute, and household members frequently help each other to perform the necessary tasks. In some cases it is more a division of responsibilities, rather than a division of labour.
It is customary that not only members of the same household come together for communal work, but also neighbours and relatives. This mainly applies to tasks which are more laborious or difficult according to needs, clearing, weeding, and harvesting, or construction of houses, digging of wells, and killing of big game.

Traditional communal work, however, is an equal exchange between households, and is unsuitable if extra labour is required in peak season. When these occur, the employment of outside help becomes customary. Where the money economy is of little relevance, workers are still compensated with beer or food. In later stages of development, cash payment becomes more and more important, and is preferred to the donation of food or beer and to communal work. In areas where alternative employment opportunities exist, the official minimum wage can be paid to hired labour in peak seasons. It has to be realized, though, that preference for cash payment is influenced more by growing commercialization of farms than by increasing land shortage. Both, however, quite often go together.

Farmers attitudes towards labour are generally still influenced by those of primitive economies where only the minimum amount of work necessary is being spent to satisfy the requirements of survival. It is a characteristic feature of extensive shifting that productivity of the factor labour is relatively high. However, with the shortening process of fallow periods, labour productivity is decreasing. This fact has been pointed out by Boserup. It is being supported by data from Kilombero valley given in Table 1. below:

<table>
<thead>
<tr>
<th></th>
<th>Number of households</th>
<th>&quot;R&quot; factor</th>
<th>area of rice cultivation in a.</th>
<th>total labour days</th>
<th>Gross return per labour day in Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>extensive shifting</td>
<td>6</td>
<td>0.15</td>
<td>0.77</td>
<td>213</td>
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<tr>
<td>intensive shifting</td>
<td>14</td>
<td>0.55</td>
<td>1.48</td>
<td>373</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Note: for comparison of labour productivity it should be noted that it is generally customary to work less hours per day in extensive shifting cultivation.

Farmers are obliged to respond to loss of labour productivity by increasing their labour input on the land. But returns to the working day are always given more importance than the productivity of the land, because land is not the most valued factor. Leisure time is highly appreciated, and an additional working day spent on the fields has to meet farmers' expectations in terms of additional benefit. It can, however, be assumed from the above argument that expectations in regard of labour productivity decrease in the course of growing land shortage.

The role of innovations.

The development from shifting cultivation towards permanent farming involves a constant process of change. This change, however, is not brought about by population growth, as is assumed by Boserup. It originates far more from the basic desire of farmers to slow down the process of decreasing labour productivity in the course of growing land shortage, or to regain its former level. Rising expectations, generally present in a changing society, may inspire farmers' initiative quite considerably.

If we assume that land is a capital good, high labour productivity in extensive shifting cultivation results from a favourable man-capital ratio. Under conditions of growing land shortage farmers, therefore try to compensate lost land through the adoption of innovations in the form of other capital goods, or improved husbandry methods and thus, initiate change. There are ample examples that farmers proved able to promote improvements entirely on their own. However, if development is to be speeded up, the active implementation of innovations through extension teaching is required. Adoption of innovations by the farmers depends on a number of factors, e.g.: on the ability of the new methods to bring progress at the present stage of development, on the ability of the farmer to realize the potential benefit from that innovation, and on the ability of the extension service to choose the right innovation, and to teach farmers the advantages of it.

It is a basic desire of farmers to ensure sufficient food supply for their family. In the Kilombero valley where an annual crop provides the staple food, cultivation on outlying fields is of major importance. Farmers being furnished with tools and technology inherited from the times when they were practising extensive shifting cultivation faced with several problems. Heavy weed growth can in the limits

knowledge, only be dealt with by shifting their fields at regular, but short intervals. An effective method to keep weed growth at bay could therefore be a very fruitful innovation, and farmers would be ready to accept it, if it stays in the limits of their economic ability.

Decreasing yields have to be accepted in the early stage when knowledge or the economic situation does not allow the purchase of fertilizers. Farmers who want to compensate for low yields, or decide to increase their production in this stage of development, generally do this by clearing additional land if available. There is quite a characteristic example from Sukumaland where in 1947-48 a project had been started to improve cotton production. Improvement was to be brought about by settlement of new land, and increase of per-acre yields, by improved soil conservation and cultivation practices. Although the money invested resulted in a bigger output of produce, the increased production almost entirely originated from additionally cultivated land. Increased per-acre yields could not be achieved. Apparently, it was more advantageous to furnish the factor labour with additional land, rather than with a more expensive capital good. Today, after land has become shorter, improved husbandry methods as well as fertilizers and insecticides have successfully been introduced.

It is apparent that additional land clearing cannot go on indefinitely. One limit is set by increasing land shortage. Another one which quite often occurs even before all available land is being occupied, is set by seasonal labour peaks which do not allow extensive cultivation of a particular crop. An obvious answer to this obstacle is diversification, i.e. the introduction of suitable new crops with different seasonal labour requirements. One effect of growing trees, apart from their ability to improve soil fertility, is their effect on diversification of production, and the fact that they improve labour productivity. The readiness of farmers to accept an additional tree crop has been proved in the Kilombero valley.18

Innovations which reduce hard manual work and break labour peaks always stand a very good chance of being accepted by the farmers. This is why tractor ploughing is highly attractive in semipermanent farming. In the Kilombero valley mechanized tilling of the land is already quite a common form of input. A survey of the role of the tractor-plough in Ifakara area showed that it improved productivity of labour. But the freed labour capacity was not being utilized as attractive crops were not available. Mechanized seed bed preparation did not result in much increase in paddy cultivation because labour requirements for weeding still limited production. In addition farmers' target mentality was apparently satisfied by the above mentioned gain in labour productivity.

Thus far, little has been said about the role of animal husbandry in semipermanent farming, mainly, because there are few animals in the Kilombero valley, due to tsetse fly infestation. Grazing areas, however, where animals are available, are being made use of in a wide range of intensity. Domestic animals as an innovation, have the ability to contribute to more permanency in farming, through the utilization of fallow land and the contribution of farm yard manure. Domestic animals, particularly where extensive grazing is possible, are an appropriate capital good in the hand of the farmer to maintain labour productivity. Growing shortage of pasture land, however, necessitates improvement of these capital goods, both pastures and stock.

The replacement of land by capital goods and skill is a constant process in agricultural development. It depends on the specific conditions, mainly on the availability of these means, whether labour productivity decreases, maintains its level, or increases. Under conditions of a growing population, sooner or later, farmers reach a stage where the land available has to be cultivated permanently. But this by no means marks the end of the decreasing man-land ratio. In economies which are not characterized by growing land shortage, or where farm sizes reached a certain minimum level, development is also brought about by innovations replacing labour or improving its

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productivity. Here, however, this process is geared by the need or the desire to improve the standard of living, rather than by growing land shortage. But farmers find it often difficult to achieve this transition, or to recognize the stage where a change was to occur. Even farmers in relatively advanced areas are constantly faced with this difficulty. If conditions warrant this transition, a considerable effort of extension teaching combined with facilities to attain the required material inputs is required.
In introducing his paper, Mr. Smith used a table of the distribution of land holdings in Kiambu to illustrate his point about the large differences in size of holdings and also to show how it was easier for an extension officer to cover a larger area of land by visiting the larger farmers. Kiambu is perhaps a typical of the situation in Kenya in that it contains many large coffee estates, but the apparent land distribution does illustrate the point that a progressive land tax might have beneficial effects on land redistribution.

**DISTRIBUTION OF AGRICULTURAL HOLDINGS BY SIZE**

<table>
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<tr>
<th>Size of Holding (Hectares)</th>
<th>Number of Holdings</th>
<th>Hectares</th>
<th>Cumulative % of Holdings</th>
<th>Cumulative % of Hectares</th>
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**ETHERINGTON:** In the first instance, I think that Mr. Smith's notes on employment and particularly on the situation in Kiambu are highly relevant. However, I think the statistics are misleading and a more detailed analysis of this type of situation is needed. The implication of the figures is that there are a very few farmers owning a very large portion of the land in Kiambu. We should recognise that a number of the examples are public companies. It is not a situation where three, five or six individuals own very large areas. This will need to be gone into in some detail before real policy conclusions could be drawn.
Turning to Dr. Gwyer's paper I should like to instance the case which is a major hope for rural employment. The evidence is that planting is going ahead much faster than the KTDA know. The extent of illegal planting is very high. I would like to suggest that we may face a very serious constraint in tea development, not in labour, but in transportation. My own work suggests that not only is the productivity and actual labour use on the small-holdings very much lower than on the estates, the potential for earning as a hired labourer in a small-holding is limited by the length of picking time available to the individual farmer because he has to deliver tea to a buying centre within 5 hours at the maximum of the start of the day. My own conclusion has been that a transportation network will be needed in order to make the length of the working day longer so that the people can get a worthwhile return.

Smith: Although the ownership issue is important and needs more investigation the table does help to illustrate the attitude of extension workers in selecting the larger farms in order to cover a larger area of land. A lot of the land is on estates and is not being used specifically for growing a plantation crop. This is a hangover from when there wasn't such a land scarcity. One handbook states that for every acre of coffee bushes, there must be an acre of grass to provide the mulch to put under your bushes. Can this be justified in present day conditions?

Harper: Following on from that, is it not perhaps more important to think about employment rather than size or the number of owners? This implies some sort of virtue in owner occupation. It is not so much a matter of who owns land, but the numbers of people working. This would be more relevant.

Smith: Some information is available on this. What is happening is that the larger estates are moving towards capital intensive methods of production because they are having problems of recruiting people at wage rate they are willing to pay which is Shs. 3/- per day. They are moving towards doing away with hand weeding and using capital intensive methods instead.

Linden: There is a pool of people and labour going to work for Shs. 3/- a day. They forego working on their own land in order to go and earn Shs. 3/- elsewhere. A man in the same zone staying permanently on his own land of three acres is making much more than the people earning Shs. 3/- a day. If these people had the same opportunity, the potential output is greater than what they get from the coffee farms. Small farms also employ people.

Tinu: There seems to be a great disadvantage in which the small farmer is placed by not getting credit facilities. There is here a creation of a local proletariat. This may be in the interest of the large farms who have a pool of cheap labour. How is this viewed as a policy problem? Is there no intention within government to try and find some way to give credit to the small farmer or to have schemes to encourage the small farmers to amalgamate and thus improve their position?
CHAIRMAN: The answer is 'yes' and 'no'. One of the things we have to bear in mind is that the population is increasing at a rate of 3.1% per annum and although the urban population is increasing at a faster rate than total population, our urban population is only 20% of the total. It will take a long time to come, most of the people will be living in rural areas. The rural population is going to increase in absolute terms for the next 20 or 30 years. The implication is that the size of a holding in the rural areas is going to decrease until we reach a point where the urban sector becomes larger.

SMITH: In practical terms it is easier to give credit, extension services and other agricultural infrastructure to larger scale farmers than to relatively small scale farmers. This is true for commercial firms and also for Government extension officers. You can get greater productivity by concentrating on the larger scale and progressive farmer rather than on a small scale farmer. Therefore, in order to devise a mechanism for assisting small scale farmers, the Ministry of Finance and Economic Planning has established a Special Rural Development Programme which will attempt to find out better methods of giving extension services, credit and other rural social services to the farmer.

GERHART: Our experience so far has shown that it is easier to decide what needs to be done than to do it. Therefore, suggestions about how services to small farmers can actually be organized would be particularly welcome.

MBITHI: A farmer is engaged in many non-farming activities for over 40% of his time, such as going to market, going to funerals and visiting friends. I would like to ask Gwyer and Ruigu how they account for this in their labour profiles?

GWYER: We are aware of the difficulties of trying to get, in absolute terms, a measure of the unemployment in a district. Instead we are trying to get an idea of the situation as it exists in different areas on a relative basis so that we know where over-employment or under-employment is most evident and where projects might be best located to help the overall unemployment situation.

MUTISO: The problem of Gwyer's paper from a policy point of view is that we create a migrant labour class who migrate from place to place. If you argue that you are going to prescribe that people migrate to service particular crops at different places, what are the social implications of this? What do you do with these people in the social system? You don't just provide a production function and leave it at that. You are creating a revolutionary potential. What are you trying to accomplish in terms of production and to what end? If the social costs of revolution are too high?

GWYER: We agree that there is an inherent danger in proposing that people move around for short term periods where there is no provision made for them, particularly accommodation. Proper housing must be available for short term workers.
This is not just a question of housing, it is a serious social problem.

We already have a social problem. It wouldn't be made any worse by moving people but it would be improving their lot because you would be giving them work and income.

There is a strong argument in favour of improving the information existing for the person looking for work. Where one could misinterpret Dr. Gwyer is if one thought he was saying "You are an unemployed person. Therefore you are going to move to that area to work because it is in the national interest."

I think we still haven't resolved the fundamental problems about rural welfare, which after all, is what this workshop is about. The question is, where should the emphasis lie given the need for total social welfare as well as the need for increasing total production, in a situation where the existing policy tends to emphasise total production and not total welfare. If we take that as given and work out of that framework we come to the question as to the disadvantage to the small farmers who sell their land and who think they can get more lucrative work elsewhere. There is a need to concentrate on who is selling the land; what is his status after he has sold the land? Are there more rural opportunities? What are the social consequences?

What is rural welfare? Is it reflected in increasing incomes and employment per se or is it a broader concept than income and employment. In Kenya's context, rural development was conceived as a means of increasing rural incomes and employment but the problems created in the process of increasing incomes and employment are perhaps not so severe as would be the case if nothing were done.

Going back to the comments on Dr. Gwyer's paper, there is perhaps too much emphasis on lack of information being the only obstacle to migration. There are other factors other than information which should have been looked into. The agricultural labour market is still not as mobile as in other sectors.

There are other economic and social factors present which constrain labour movement quite apart from information. Agricultural people who are looking for work do not have the transport to take them to the work. There is also the question of accommodation. Different tribes will work with others, some will not.

If seasonal migration is going to occur, as suggested by Dr. Gwyer, it seems to me that there needs to be a good deal more flexibility with respect to the wages offered at particular places in particular seasons. On the one hand, one would expect the wage to reflect the value of additional workers at the time and the place to which they migrate. On the other hand, the wage offered needs to cover the costs of migration plus the value of the output foregone as a result of the worker leaving his home. If it does, an information
system is likely to develop, and the better it is the more of this seasonal migration there is likely to be. I have the impression however, from some of the coffee estates that use this kind of seasonal labour, that while they complain about how difficult it is to get labour, there is a collusive resistance to raising wages to a point that would be expected to attract the numbers of migrants that they need. It could be that, under these circumstances, the more information there is in the areas of potential out-migration, the less migration there will be. Especially where the period of employment is short, transport costs can be a large item in a migrant's calculation.

KARUGA: If I could revert to the previous discussion on land, the question of land size is very misleading, and must be related to the district in question. In the area where I am working, you don't need to own the average 4 acres in order to be progressive. Poultry farming can be successful on a place the size of this room and so can mushroom growing. You don't have to go into the statistics of what one grade cow requires. It can be profitable even with 3 acres. But you need a man who knows about poultry farming and these other practices to make a success of farming. We need to get a different approach to rural planning, classify zones or products and see what is needed in terms of specialists and have services catering for this.

SMITH: Small farmers are deprived of these services which you say should be made available. Some of us want to stress the point that the extent to which, say extension services should go to the larger farms should be reexamined.

HOPCRAFT: I would like to question the supposed disadvantages of the smaller farmer. Any notion of an economically optimal farm size must be regarded as very fluid thing, depending crucially on a complex of factors including ecology, population density, the nature of the human resource, and technology. Mr. Karuga's paper came up with the finding that a number of the larger farmers are selling land for good economic reasons. As the density of population on the land increases, land prices are likely to rise, and the optimal farm size is likely to be reduced. The market will be putting pressure on those farmers who deviate too far from some notion of an economic optimum, and farm sizes should be free to respond accordingly. On the extension question, certain forms of extension lend themselves to more individualized visits to larger farmers, while others, such as demonstration plots and meetings are equally available to small farmers. One should presumably adjust the type of extension service given to the types of farms in an area rather than trying to do the opposite. In general I am not sure that one wants to have a bunch of economists dictating what shall be the sizes of farms, and certainly not without far better information than we currently possess.

SMITH: This is so, but the fact remains that people with small holdings do not have the same access to services that larger farmers have.
Is there a bias towards the elite or a bias towards the larger?
Are they the same?

CROFT: They are the same.

I would like to link my question to Dr. Oloya's paper, where concentrated on the educational structure of the countryside. The extension service improvements on which the conference has so far concentrated and the reforms of rural school curriculum which Dr. Oloya suggests are good insofar as they are viable to deal with agricultural efficiency; they are not wide enough, if we are concerned with rural welfare. If we want a regeneration of the countryside, rural adult education needs to be taken much more seriously. The peaceful revolution in Denmark from 1860 on was achieved by the Danish Folk High Schools; similar progress is now being made in Mysore State through Rural Folk High Schools which the Indians are copying from Denmark. Adult education needs to be put in a more central place in these SRDP Programmes than I have heard so far. True you must start in the schools but unless we also awaken adult minds, rural welfare will hardly be improved.

ILO-ODONGO: If a man goes out of his house to work for somebody else he loses status. The kind of job he would rather do elsewhere for other people, he would not do in his own group. Is this a factor in places where the observation is going on? If Luo people work in Ukambani it is not because there is no work in Nyanza but because the labour prefers to go to other places. Similarly people come to Nairobi or other places looking for jobs because they have information which is not quite accurate and also it is information that there are jobs in the town. They come and find that there are no jobs for them but they stay on just the same. It is Government policy that these people should be taken back to their own places to find employment.

The situation that was found in Vihiga is that people do not care to work for immediate neighbours but would rather go further and work in another area. In Tetu this was not the case. People there were quite willing to work for their neighbours.

In Table 2 of Mr. Gwyer's paper, it says that Vihiga shows a decrease in out-migration. I would like to know the reason for this.

The decrease is in relative terms. We don't have too much faith in the method that was used in calculating these figures. It is based on the assumption that the females stay in the area and the males move. This of course may be subject to error. I was told that Vihiga has a very high out-migration ratio but it was in fact the same as in the other two areas. I want to get further information about out-rates. We have done the best we could with census data. We are surprised by the relatively low rates in Vihiga.
CHAIRMAN: The session has lasted longer because we did not have enough time for the papers which were presented. The papers were good, as is evidenced from the interventions made. I hope it will be possible for you to come up with some conclusions which can be of practical help. Nevertheless, there are still some areas in which there are serious gaps; this is inevitable. I was impressed by those speakers who pointed out the need to look into rural welfare not purely from the economic terms. The questions asked were fundamental. In our efforts to increase rural incomes and employment, are we not going to increase stresses and strains which might or might not be justified by the increases in income. This is a point which well perhaps be looked into at some other time at some other session.

Very closely related to that is the definition of what is a rural area. 80 per cent of Kenya's population lives in rural areas. We really don't know what a rural area is. Do we classify the smaller towns as rural towns serving rural populations? That is a question that was raised by Mr. Karuga and it will need to be gone into some other time. Five papers have been presented. There must have been general agreement with what was said in most of them. Most of the controversial interventions were on three points:

There were recurring interventions on the question of land distribution and the type of assistance which should be given to the small scale farmer. From the researches which have been carried out, it has been found that the below average farmer receives less attention in terms of help than the average or above average farmer. This is an issue which will need to be resolved as to where and how more resources can be channelled to the below average farmer to improve his situation. I think that is one area where we have not come up with definite conclusions.

Another question which was discussed at length is the question of labour migrants. The point made by Dr. Gwyer was that this is a phenomenon which has been recurring historically, and that agricultural, it is desirable and needs to be regularised by way of better information about job availabilities, in peak areas. It is interesting because the point also was discussed at great length by the Parliamentary Select Committee on unemployment which came up with the same conclusion as Dr. Gwyer. The mechanics of implementing this proposal efficiently have not yet been identified and perhaps that is an area which will need to be gone into in some detail.

The final point was the non-agricultural aspects which are very important for agricultural development in rural areas. Specifically, adult education was mentioned and I think that is also another point which would need to be gone into at some other time.
SESSION 4: June 2nd 11.30 a.m. - 1 p.m.

TOPIC: "Social - Political Development and Rural Welfare".

CHAIRMAN: F. Mbithi

BACKGROUND PAPERS:

2. The Role of Ideology in Rural Development: S. Rohio.
ON IMPROVING RURAL WELFARE: NOTES TOWARDS METAPOLICY

G.C.M. Mutiso
Department of Government
University of Nairobi

INTRODUCTION

Since most people agree that there is need to discuss the issue of improving rural welfare from many points of view so as to clarify thinking about the people in the rural areas — who are the majority of our people — it may be of some help to ignore the debate on socialism versus capitalism and also commentary on specific policy evaluation and to discuss instead an aspect of meta-policy (policy on policies) which I feel has bearing on how we choose to think about future policy for the rural areas.

Meta-policy by definition is futuristic. Hence most of the studies which are meta-policy oriented have a quality of unreality for the uninitiated. This is the hazard of most new sub-disciplines. In this paper we begin by sketching a way of looking at the sociology of the rural areas and proceed to an evaluation of the relationship between rural people and the already existing administrative rulership. Underlying any future change on policy for improving rural welfare I maintain will have to be an intellectual reorientation, particularly with regard to substantive areas of institutional and manpower use. This is explored in the third section - intellectual disorientation. Finally we address ourselves to the issue of land.

The paper is purposely discursive because the point is to raise discussion on wider issues which relate to improving rural welfare but are not as narrow as either specific studies on some aspect of a given rural area or commentary on an already existing policy.

Finally it should be pointed out that up to the time a specific policy is enunciated the policy analyst assumes that the generalized practice existing can be commented on as policy. In the same way that nature abhors a vacuum — at least according to physics before the advent of interstellar theories — where there is no formal policy societal institutions move in to close off the area. This is a pre-requisite assumption of a paper such as this.
In this section we will discuss very briefly the Asomi-non-Asomi cleavage in the rural areas, point out the historical model of change in the rural areas and finally show the politics of development as status inversion.

Most of the people who have addressed themselves to the question of cleavage in the rural areas as it relates to policy have basically been looking at tribal society and have argued the dichotomy of traditionalist/modern which most of the time is understood as illiterate/literate, of course literacy meaning formal Western schooling. This way of looking at the most significant cleavage in the rural areas does not address itself to the several serious historical and ideological issues. Who received formal education? How was this person perceived over time by those who had not received formal education? Did these perceptions change and are they changing now? To answer these questions one must first define the concepts of Asomi and non-Asomi and trace their historical evolution.

When we use the concept Asomi we want to suggest those people who were educated, mainly in missionary schools, during the colonial period. They imbibed the colonial notions of Christianity and became the major cultural, political and economic collaborators with the colonial system in that they adapted the ways of the missionary. They became the catechists, clerks, chiefs overseers and finally growers of cash crops. They perceived themselves as being different from the other Africans - the non-Asomi. The non-Asomi rejected the religion of the Whiteman and therefore educational and economic opportunities in the colonial system. They perceived the Asomi as a hostile group from the cultural point of view in that they were the prostituters of the African way of life. The non-Asomi embraced those Africans who had fallen from the grace of the colonial order (basically the value judges were missionaries).

These concepts are of limited value unless we situate the groups and processes in history. The beginning point must obviously be the contact point between the representatives of Europe and Africa. Who were the European representatives? Conventional historians have argued that Europe penetrated
Africa when rulership systems were being established by means of the gun and the pen -- the soldier and the administrator. This is a misreading of the sociology of change. From a social change point of view those who were most critical in changing the values of the Africans were the missionaries. They were the ones with greater contact with the Africans and furthermore their ideology was coherent and continuous. Who did they recruit into their new system? They recruited the pariah groups - the efulefu - the empty worthless people - in short, the Africans who were at the bottom of the social stratification. This is logical. Any people who enjoyed status and power in traditional society would not agree to be co-opted into the new status and power system. It would be high risk-taking without assurance that the pay-offs would be congruent with the risk. Hence the high status africans - who were the rulers, the keepers of their tradition - did not get recruited into the European colonial system initially.

The emphasis here is on the initial contact because it is also logical that as soon as there was established a new stratification and status system - the colonial one - there were two competing stratification and status inversion. This lasted for a brief period before the establishment of status systems. In situations of competing stratification and status systems most people gravitate to the system which produces more rewards. Emphasis tends to be on economic rewards but one should note that those able to calculate the rulership powers rewards jump to the system generating more rulership power.

When we talk about status inversion we are addressing ourselves to two phenomena which do not take place simultaneously but are complementary in terms of their effect. One one hand are the africans who were of low status in their pre-European society. They, by identifying with the missionaries, do not gain status in the new colonial system but in relation to the pre-European stratification status system they can buy status by manipulating political power and economic power gained in the new system. This, simply put, is the phenomenon of the interpreter having more money than the traditional chief and hence being able to entertain the clansmen more lavishly. He is therefore perceived as a new big man.
On the other hand, the pre-European high status groups, in attempting to perpetuate their status, begin to send agents to represent them in the new system. They are the proverbial eyes and ears in the white-man’s compound. The effect of this is co-option into the new colonial stratification/status system. The agents become co-opted and are effectively moved out of the pre-European system. One should note that these new entrants are late in terms of entering the colonial system and the Efulefu who had entered earlier dominate the African portion of the colonial stratification system. They are, as Balandier suggested long ago, at the bottom of the system and the earlier entrants (low status pre-European) and their progeny continue to fight them (the later entrants, high status pre-European).

We have discussed status inversion to point out two consequences. The most significant is the fact that as former low status people attained relatively high status positions in the colonial order they become antithetical to the values of the former societies. They were not the carriers of the values since these are always carried by the higher tradition which is usually identified with high status. One should further point out that the entry of a few pre-European high status people into the colonial status system does not deny this point since we have suggested that such people never caught up with the earlier entrants who were low status people before the arrival of Europeans. The Asomi are therefore very much opposed to the values of the pre-European societies since their status is based on identification with the values of the colonial order.

The second consequence of status inversion is that the local rural leaders throughout the colonial period were recruited from the Asomi and thus the cleavage between the Asomi and non-Asomi was solidified over time. Since the Asomi identified with the colonial order and the non-Asomi perceived them as part of the exploitation of the colonial order, the rejection of the colonial order - that is to say, nationalism - became also part of the on-going conflict between the Asomi and the non-Asomi. Here we are concerned with organization at the rural level and with the groups participating in it. We are not concerned with the leaders at the national level and their social origins but rather with the rural followership. The non actively participated in the politics of the nationalist movement in the rural areas were the non-Asomi, those outside the colonial stratification model. They were despised by those who benefited from the system.
Hence we can talk about the politics of independence and post-independence in the rural areas as strictly politics for a second status inversion. It is politics to obtain for some groups what the colonial period did not give them. Thus if we are to understand why during "tea" some people are charged five thousand shillings and others two, if we are to understand why the participants in Harambee are the poor, if we are to understand why the educated never do the nuts and bolts activities of the party or in any active way become identified with rural communal activity we must understand the attempt at second status inversion. Thus we conceptualize rural politics and policy in quite different terms since the sociology of the cleavage in rural areas seems to have been ignored.

What are the politics of the rural areas? Here perhaps we ought to break from all conventional rules of analysing the political system in terms of center-periphery relationships which can be shown by some index of penetration. Colleagues here have explained the lack of penetration in terms of the death of the party. (Perhaps the party was never born!) Others have explained the lack of penetration in terms of the centre administering the rural areas rather than allowing rural politics. All these explanations have some truth in them but they suffer from the limitation that they view the system unidirectionally—"from the centre facing the periphery. If we raise the question of the penetration of the system bi-directionally and emphasize organization (group phenomena) and persistency we are immediately struck by the groups which embrace traditionally oriented (tribal) recruitment, who use traditional techniques (oath clan) and by how long they stay on the scene. Indeed even on the national scene there are only one or two politicians who have attempted to put together political machines which go beyond the groups and techniques suggested above.

Policy planners must therefore plan with these rural low status groups which are independent of the institutions of the centre in mind both for consultation on the plans and for implementation.
ABOUT KLRA

In Kenya there is a feeling that the concern for development is really a concern for industrialization in the model of the West. Hence even though there is talk about rural development this is always in terms of monetarizing the rural areas, making them complementary to the already monetarised urban areas. The strategy seems to assume that the already existing phenomenon is to be continued and simply improved quantitatively rather than qualitatively. Hence until recently we did not change our educational system, and many are not convinced that there has been a qualitative change when we note so little in the way of new materials and so little change in ideology in education. Books still talk of "natives" and reflect many racist attitudes towards Africans. Roads are tarmaced and more feeder roads are built without taking into account the fact that perhaps the alternative allocation of these resources to the creation of all year footpaths might be of more importance economically in terms of enabling rural populations to get their crops to major roads. We waste money on antique survey technology when we could survey the whole country and get on with land consolidation within a week if we utilized modern survey techniques. Of course it is expensive but if our orientation is to the rural areas we can reorient our priorities and by thinking about the long run actually make money from the rural areas.

How do we explain this disorientation? We explain it by the historical forces which created the leaders of the moment and persistent neo-colonial control of the intellectual life of the country. We shall first discuss the attitudes of the present generation towards the colonizers - Mzungu and then discuss the continued viability of the expert advisers and finally the problem of the role of the university in improving rural welfare.

We have already pointed out that the Asomi in the colonial period accepted the ways of the colonizers. They accepted everything, except anything which came from a Mzungu or from a book as the truth. "It has been said by a Mzungu and it must be the truth", the people in Kenya pur it. This attitude is still maintained by
some very "intelligent" people. It forms the intellectual base for
the comments one hears about not accepting African private secretaries,
lowering standards and hiring thinkers and ex-colonial D.C.s as
experts on matters in which they have no greater knowledge than the
average African from the street. This is the dependence complex of
the colonial system inculcated so effectively in the present generation.
It is a serious policy issue which must be paid attention to in
evaluating advice and, more important, in terms of mass media.
Clearly we can do with less advice and a little more thinking on our
own about solutions to our problems - coming up with Kenyan solutions
where necessary and borrowing solutions where they are useful, but
must be the judges of the usefulness.

Allied with the dependence complex is the kararii complex.
This is the colonial attitude that the preferred work is work which
is to be done in an office rather than technical work and especially
work which is manual. I have analyzed this elsewhere in relation to
the lack of technicians and engineers. I suggested that the
rejection of manual labour is an unsuccessful defence mechanism
against the racist colonial stratification model which sought to
preserve manual labor for Africans (Asians were the technicians and
Europeans the managers). We should recognize it as a past defence
mechanism and note that it is socially dysfunctional now. We need
technicians, engineers, doctors and scientists more than we probably
need any other manpower categories. We also need these people to
go and work in the rural areas where the lights are dim and the
Mama Njeri's few. From a policy point of view perhaps we need to
adopt the Russian solution to a similar problem - that is,
differential rewards for people in technical fields and those who
work in the rural areas. Another policy alternative would be to
force/require every qualified person to work in the rural areas for
certain periods of time during his career.

The problem of the expert-ratiate expert is in general one of
orientation. It is not so much whether such an individual plays a
subversive role directly. This has been over emphasized since
Cultural Freedom. The issue is simply whether his expertise is
useful for national development when his presence serves as
both a psychological prop to those who are dependent upon him and
also slows the resolution of national intellectual style as we
the opening of advisory jobs to locals. The point simply put is
that we pay too much in terms of money and the cost of inhibiting
the development of our manpower by retaining a host of (useless,
worthless, unnecessary) people around. Evidence that local
manpower can manage local problems and even improve on solutions
particularly technological ones was essentially the only positive
contribution of the Biafran war. It had to take a civil war to
demonstrate what we ought to have known long ago - that is that we
can run our affairs without advice and perhaps run them better
because in the process we shed so many psychological hangups as well
as probably creating greater fit between the solutions and the
problems.

The expatriate expert is probably least useful in the rural
areas since his preferences lie in Nairobi anyway. It is here that
his social type exists, and even when stationed out or advising on
rural development the so-called expert is an administrator with a
ministry, or at the university. There are very few who even get to
know the country in any meaningful way since their contracts are short
term and then they are off to another poor country advising as usual.
Even when they are good they avoid thinking about the society in
general but rather in terms of their research design. Beyond these
arguments is of course the issue of national integrity. How much
should a country's activities be under the scrutiny of foreigners
who have no stake in the country? My answer would be not at all.
Yet one must end these comments on expatriate experts with a
statement that the blame is not with them. They point out time and
again that the problem is Kenya's. It is Kenyans who ask them
and sometimes beg them to come. These comments are therefore
addressed to Kenyans. It is we who will have to make the decision
as to whether to continue to pay useless people who in turn laugh
at the stupidity of being brought here and being paid well to do
nothing!

If there is intellectual disorientation it seems to me that
it is partly the responsibility of the university to set the
national intellectual style. To begin with there is the need to
eliminate all of the foreign professors, a step we seem to be taking
too slowly. Secondly with specific reference to the rural areas it
is time we think seriously about thinking on rural areas. At the moment there is no program whereby the total body of the university is involved with the rural areas. Indeed Nairobi University "pretends" to be an urban university and has not addressed itself to the problems of the great proportion of our people. A beginning step may be to require supervised research in rural areas for students in all faculties. This will serve several very important functions. Probably the most obvious one would be the re-orientation of students and faculty members to the areas where most of our people are. This is ideological.

Secondly a requirement of this kind would facilitate data gathering about our society to an extent which has never been possible before. This is one of the most urgent areas of rural policy. Data on some areas is so poor that even to think about using it for planning is next to madness. By collecting systematic data in all disciplines we at the university can conceivably save the nation a considerable amount of money which is now being wasted on feasibility studies, and at the same time help to rationalize the planning process for government and private individuals. To be able to do this we have to convert the university from a library oriented institution to an institution where possibly as much as a third of student and faculty time is spent in concrete rural research. This is a decision which will have to be made at the highest levels of the state because the university is very much part and parcel of the political system.

The third major pay off from orienting the university to the rural areas will be the hastening of the creation of a national intellectual style — Kenyan. An intellectual style embodies the traits of a society. If the university is involved in research and teaching about the rural areas it seems to me we will for the first time commit our brains to the tasks of improving the lot of the most significant portion of our population. It is only then that we can seriously think about cultural, economic and organizational alternatives for improving rural welfare. All that we are currently doing is piecemeal and stop-gap by nature. It can only be comprehensive and intellectually coherent after we collect the data, the wisdom and the innovations already existing in the rural areas so that we can synthesize it and improve it. It is only then that we
can talk of a national dialogue about development in a meaningful way. Then and only then can we systematically look for technological, organizational and societal innovations suited to our country rather than simply grabbing what is offered to us by the representatives of the neo-colonial international system.

Beyond the question of the total involvement of the university there is the probable need for a specific institute to address itself to problems of rural technology. Although this possibility has been mentioned by a few people in East Africa work on rural technology done at the Center for Intercultural Documentation in Cuernavaca Mexico suggests quite clearly that there are areas in which adaptation of existing technology can revolutionize rural areas. Consider for example the development of a simple and durable motorized three-wheeled cart capable of carrying up to 850 lbs. and travelling up to 20 m.p.h. Development of such a vehicle would cut the need to construct expensive feeder road systems since it would require only track six feet wide. It would obviously revolutionize rural communication because it would be within the reach of any farmer who could afford two cows. Of course improved communications can be translated into economic gains for the rural farmers who would be able to get their crops to markets. A further obvious advantageous use of such a vehicle would be to equip all local field officers with meaningful transport (chiefly). This would increase the efficiency of field officers. A similar potentially revolutionary machine is the Kabanyolo tractor. One hopes that the Uganda government will push its development.

Other areas of rural technology such as energy and our utilization of resources could be similarly studied by a specialized institute. It would be manned logically by an interdisciplinary team and all aspects of rural technology would be studied before advice is given to the policy makers whose responsibility ultimately is to make policy choices. It seems to me that the establishment of such an institute should receive priority in terms of the future development of the university — with the proviso that it does not become another enclave for "expert" expatriates.
ADMINISTRATIVE RULERSHIP

We use the concept of administrative rulership to subsume those behavior patterns of the administrator which many scholars have identified with colonial bureaucracies in particular. Scholars have argued that these bureaucracies are concerned with the maintenance of law and order and not with issues of socio-political development. They have also pointed out that there is very little attention paid to innovation and finally that there is a perennial distrust of societal or institutional conflict. The point about conflict and its role in innovation is what to emphasize in this section, but first we must discuss the African Administrators.

The African Administrators are Asomi in terms of social origin and behavior, and we expect them to reflect the value biases of their cleavage. Indeed probably as much as seventy percent of the African administrators have had some bureaucratic experience in the colonial system. To the extent that most were recruited from the teaching profession of the colonial bureaucracy and from the ranks of the chiefs and petty clerks, they represent the most voracious of the Asomi in terms of the incubation of values. Experience in the field has convinced me that the non-Asomi still view the administrators as somehow not a part of them. Perhaps, though, this situation is changing rapidly especially with the posting of new and younger people to the rural areas. Hence from a policy point of view we should perhaps not worry as much about the administrators themselves as we should worry about the structural locale of administration vis-a-vis technical experts (including the technical ministries) and politicians.

It is a given fact that at all levels the administrators enjoy veto power over all the technical ministries and the politicians of the area. This factor has the social consequence that social and political programs are not stressed. In the field it is perhaps these very social and political programs which should be accentuated. It is said that to give the administrators veto-power over the technical ministries and the politicians is to ensure the harmonization of interests, but the point is that where there is change there is conflict and perhaps there is less need to administer than...
To manage conflict assumes that the conflicts — political and social — are accepted as given and are desirable; what is important is to make sure that the system does not disintegrate.

Of course the fact that administrators have been particularly given veto power over politicians means that politicians are perceived as a threat to the rulership. The assumption is that the local politicians can build machines which can in turn generate enough power to challenge the center. For the machines to challenge the center they must have perpetuity. This assumes organizational continuity in the rural areas under the leadership of the politicians at the center. Bluntly put, the assumption is that the politicians who have become part of the activities of the center are the leaders of the organizations in the rural areas.

I would like to suggest that the organizations in the rural areas are independent of the politicians at the center. They are independent because they are composed usually of the low status groups who perceive the politicians at the center as either Asomi who have acquired status and do not identify with them. Moreover the issues of the center are theoretical and far removed from the felt needs of the low status rural people. To those low status groups politics is a way of eating — eating those who have made it: the core development issues fought in the rural areas are not between politicians and the people at the center but rather between the local Asomi; and the non-Asomi. From a policy point of view perhaps the most immediate issue is how the administrators allow the politicians at the center to bid for different groups, in this way encouraging active competition owing them for the loyalty of the non-Asomi and in this way also encouraging the creativity of conflict.
Alternatively the administrators could assume a management role for these rural non-Asomi groups and then take their grievances and preferences into account in policy execution. But of course this would only come once the administrators themselves removed themselves from the assumptions of their cleavage — that non-Asomi are incapable of leadership; that non-Asomi, being illiterate, cannot take part in modern society et cetera. This would fundamentally change the style of administration even if it did not address itself to the problem of the structural positioning of the administrators. It would mean new pressure groups being accepted as legitimate and as groups to be allowed access to the pressure points of the system rather than being denied such access. There is the added psychological value that these non-Asomi groups would become active members of the rulership system and therefore liberated people. This itself is a high value.

These comments on administrative rulership have been made without discussing the institution of the party. I have said before that the party was still-born. By that I mean that since the beginning of party activity in Kenya we have not had a national party or parties which were effective belt-ways for the transmission of policy preferences both to and from the center. We in Kenya tried to build Western-style political parties which left out the civil servants. Party activity was also ignored by the Asomi of the rural areas. Finally the organizational work structure of the party was weakened by the co-optation of the most active politicians to the center to run ministries.

Perhaps even more important is the fact that the Asomi in the rural areas did not actively identify with the party process. It was the old women and the marginal youth who formed the backbone of the parties. They were the ones who attended the mass meetings and paid the membership fees. Of course their motive as we have suggested, was to gain status vis-à-vis the Asomi. Indeed most of the politicians promised them this — the slogans of mashamba and maduka were very common. These promises could not be fulfilled and consequently the non-Asomi now feel cheated. However they have a ready
explanation — the party was just another trick on the part of the Asomi to use them. This is the message of most of the political songs sung in the rural areas.

We need a party to embrace all the people, and towards that end it may make sense to include the local administrators in the party process. I am not talking specifically of the Tanzania model where the local administrators are the de jure leaders of the party, but rather a system where perhaps they are ex-officio. In such a situation, when they act they would be aware of party processes and would not be cast as a center in competition with party political process. The point is that administrators are perceived as the government and party politics as something else — something illegitimate.

I have been struck by the greater amount of work done where the administration actively works in conjunction with the party. It is on the basis of this that one advocates some institutionalization of the working relationships between administration and party. Putting administrators in the party would in a way serve the function of assuring the party of expertise at the local level which is not dependent on the party for careers, but even more important it would assure co-ordination of policy execution and policy preference processing. This may be the quickest way of forcing the administrators to change from an administrative orientation to a conflict management. This would assure greater political use of manpower.

LAND POLICY

Land has been one of the most serious policy issues in the history of Kenya. It is very much tied to the problem of improving rural welfare not only because better land utilization will generate greater economic returns for rural areas but also because land policy for the former European areas may well still present political problems and, depending on what future policy is adopted, there may be either economic gains or losses in terms of overall production. The present policy of leaving the big units alone in the name of maintaining productivity
violates the pressure for land acquisition by people who cannot afford them. A future policy may have to ignore productivity issues for greater distribution of ownership of land.

Probably the next most serious policy issue is the speed at which land is to be consolidated. One of the major issues is the technique. Probably future policy ought to address itself to the issue of aerial photography so as to speed up the process of land consolidation. Present land policy thrust towards consolidation is rationalized partly in terms of the increase in rural productivity which would be based on extended credit. This was the understanding on the part of those for whom land consolidation has not come and who see their economic opportunities being undercut by delayed consolidation.

Beyond the issue of the rate of consolidation of areas for future land policy there will be the issue of migration of people from high density areas to areas of greater land opportunity. Initially these will be areas formerly farmed by Europeans, but this will be an extremely temporary phenomenon since government policy clearly states that these areas will not be sub-divided to allow in a great many new people. The second aspect migration—people moving from high density areas to other tribal lands—will present more problems than the migration to former White Highlands. Since the former will raise the whole issue of tribal lands more sharply than before. The underlying problem is the fact that for most of our people—even those who move to a land tenure system where there is individual tenure—the view of land as being owned by the tribe will still remain. Indeed one is convinced that at the tribal boundaries this is already a significant political issue.

The present policy on land can be interpreted so as to suggest that when and if consolidation is completed people will be able to buy land anywhere. If this policy is to succeed it seems that there may be a need to engage in some serious thought as to whether individuals should be moved into an area in such great numbers that they become politically visible and consequently conflict lodestones. Probably scattered acquisition of land in the areas of other tribes would not raise political problems unless the migrants become visible.
There is of course the alternative possibility of resettling people in quotas. For example if additional sources of power are developed and it becomes possible to irrigate relatively sparsely populated areas it may be a good idea to systematically resettle people using heterogeneity as a central principle. I am not thinking only of people who have existed closely but rather a very representative national regrouping. This could be made one of the major criteria for all government resettlement schemes. It would require the expending of some efforts in political propaganda to achieve, given the tribalist assumptions currently held by Kenyans.

The nexus between land policy, technology and provision of services is very much tied up with the way we improve rural welfare. It is true that for other than a very few areas our rural population is so scattered that it is impossible to provide services such as water unless the population is very dense and one can build a number of water systems, which is expensive. Perhaps what is needed is micro-urbanization — that is the systematic and purposeful concentration of services and perhaps even aided housing at specific points throughout the country in an attempt to concentrate rural populations at these points. In proposals for electrification and transport systems this ought to be the focus and since it is important to provide housing in the areas not yet consolidated, these could be planned for. Standardized family houses could be built by Harambee for all those concerned. It seems almost certain that if an integrated program offering all the modern advantages were tried it would probably work. Those who throw the experience of Central Province in the face of a proposal such as this one misunderstand the socio-political context of the villages that were planned during Mau-Mau. In the present context the response would be quite different. The only major drawback to such a scheme would be the issue of transportation for people to and from their private plots. However, this is an area where future low-cost transportation systems as discussed above would become useful. In systems such as the one proposed an articulated water system could be built. Probably no single factor will be as critical in improving rural welfare
as water. It affects health, and one can argue that
the availability of clean and permanent supplies of
water would itself change the lifestyle of the rural
areas more than anything else. It would not only
liberate women and young people for other activities
but would also change the structure of economic
production.

We have touched on many problems and provided
many suggestions. If this paper can be summarized coherently
we would say that there is urgent need to think about
meta-policy issues for the rural areas. Without this, any
discussion of specific programs will remain nothing more
but nit-picking about the present. If we do not think
imaginatively about the future we remain slaves of the
present.
THE ROLE OF IDEOLOGY IN RURAL DEVELOPMENT

S. Rohio
Department of Government
University of Nairobi

This paper attempts to reflect on the nature, significance, uses and necessity of the phenomenon of ideology for both the individual and his society and then to relate the phenomenon to the problem of social change and development with special reference to the rural development in Kenya. In this attempt the writer takes the position that change and development of a people, when real rather than seeming, stems from an appropriate mentality when such a mentality is commonly shared by the majority of the people concerned. The sequel will bring into the open the relationship between a commonly shared mentality and ideology.

In Kenya today we have a nascent elite from which various leaders in various sectors of the society are recruited. To many members of this group the word ideology is almost a dirty one for they claim, with all seriousness, that they are and want to be "practical people" rather than to adhere to or to advance any explicit ideology. In other words, they want to be pragmatic. The staunch supporters of this approach to life do not seem to realize or to be aware that pragmatism, when consistently insisted upon and practiced, can turn out to be an ideology in its own right or to be a practical aspect of an explicit or implicit ideology. For instance, one has to be thoroughly pragmatic to implement an ideology bedrocked on acquisitive urge or "get-rich-quickly" psychology. After all, isn't bourgeois outlook both practical and an ideology thus bedrocked?

It is interesting to note why many members of the nascent elite we have referred to regard themselves as practical men and
as men without any ideology. First and foremost, these 'practical men' apparently take a propagandistic view of ideology. This is a view which takes ideology to mean constructs framed for the purpose of driving the masses in the direction which their leaders wish them to take. Viewing the phenomenon of ideology in the propagandistic sense and then disassociating oneself from it amounts to giving a dog a bad name and then hanging him or to creating a man of straw and then destroying him.

Propagandistic ideology is not what we are going to address ourselves to in this paper. We will take ideology to mean a body of ideas and beliefs entailing a commitment to certain values and asserting a particular social, political and economic order as the way to achieve these values. As the sequel will show, a people can never long ignore ideology in this sense and yet succeed in forging and maintaining a harmonious, cohesive and consensual society.

Let us take ideology in the sense of the last paragraph and then assume for the sake of argument that our nascent elite has no ideology. What this would mean is that our 'practical men' do not share in common any body of ideas and beliefs, they are not collectively or severally committed to any values, nor do they share a common vision of the future social, political and economic order they hope to realize for their society. One would very much doubt if our nascent elite is as truly absurd as the logic of the stand it has taken for itself indicates. Surely it would be a tragedy for the group from which a society recruits its leaders to be devoid of an ideology in the sense we understand the concept here.

At any rate, it is nevertheless thinkable that a given society may have an elite which is collectively devoid of ideology. In which case, each individual member of the elite severally holds his own personal ideology which motivates his
behavior in society. An individualistic state of affairs such as this one both foils the development and maintenance of public spirit and estranges the individual from his society. This must be the case because whenever the behavior of the individual is primarily motivated by personal ideology or by purely personal and private considerations, there is no logic that can relate the specific need and goals of the individual to any specific needs and goals of the society. This may well explain the socially irresponsible corruption going back to acquisitive urges and the nascent social sickness which are apparent in the Kenyan nascent elite today.

Our nascent elite represents the detribalized and/or detribalized segment of the Kenyan population and constitutes but a very small portion of the population. The bulk of the peoples of Kenya live in the rural areas under tribal and traditional settings which have been disrupted but not significantly. In some cases the tribal settings remain very much as they were before the colonial days. To be sure, some visible changes have taken place in the rural Kenya during the colonial and post-independence days. The rural people have had, somehow, to adjust to these changes. However, the adjustments these people have made are more of functional rather than dynamic adaptations. In other words, the rural people have neither understood nor internalized the ideas or philosophies the implementation of which has eventuated in changes to which they have had to adapt themselves both before and after independence. Behind the functional adaptations made by the rural people are the tribally bred traditions and customs and their supporting ideas, beliefs and values. We must parenthetically observe that even most of the members of the nascent Kenyan elite have neither thoroughly understood nor internalized the philosophical principles underlying the recent and current political, economic, sociocultural and scientific changes in Kenya. Like their brethren in the rural areas under tribal settings, they have had to make functional adaptations to their changed circumstances; probably that is one of the major reasons for regarding themselves as practical men (functional men).
The traditional rural populace, perhaps unlike the nascent elite, is thoroughly ideological with respect to the dominant sector of the life prevailing in the rural Kenya. As we have mentioned in the last paragraph, the rural people have not yet significantly given up the ideas, beliefs and values upon which the tribally bred traditions and customs are founded. One may wonder whether the adherence to these traditional ideas, beliefs and values necessarily make the rural populace ideological. Let us look into this question in some detail.

It is an indisputable fact that the precolonial tribes in Kenya were intratribally cohesive and consensual communities and that the encounter with British colonialism, with its policies of letting sleeping dogs lie and indirect rule or its approximation, did not significantly disrupt the precolonial cohesion and consensus of these communities. The unity(cohesion and consensus) of these communities did not stem from the fact that their members dwelt in the same territory, used similar artefacts, engaged in similar occupations, had similar physical characteristics or any other observable factors. Rather, their unity stemmed from a common sharing of basic mental conceptions about the nature of things (ideas) the common acceptance of these mental conceptions as true (beliefs) and the commonly shared estimations of the same mental conceptions as desirable or worthy or esteem for their own sake (values). Put differently, a given tribal community was cohesive and consensual because its members shared in common the same basic ideas, beliefs and values which support their entire societal system. This is another way of saying that the tribal communities in rural Kenya have and always had commonly shared ideologies.

This criterion of a people's cohesion and consensus is not a monopoly of tribal communities. Indeed it applies even to the modern nation-states. For instance, one may correctly say that the U.S.A. is basically United primarily because a significant number of the Americans share in common the ideology
associated with the basic ideas, beliefs and values of the
Lockean-Jeffersonian liberal democracy. One may say a similar
thing about the U.S.S.R. with respect to the Marxist-Leninist
communism.

One may argue, as some have indeed argued, that a tribal
or a national community is internally united not because its
members share an ideology but because they share a culture. To
argue this way is to forget that culture itself is ideologically
created. Culture in general is the process and product of human
self-cultivation and it involves the development of selected
potentialities of nature, human and cosmic, for the benefit
of the individual and the society. The selection of which
potentialities of man and nature are to be cultivated and
developed in the cultural process and to what end is done
ideologically; it is in this sense that human culture is
ideologically created. This is why it is significant for a
people to have a full or a reasonable knowledge of what they
are doing to themselves and to their society in the event of
creating and developing a culture first.

In the last few pages we have roughly analysed the Kenyan
ideological situation. In the first place, we have seen that
the Kenyan nascent elite either has no ideology as its members
claim or it is ideologically confused. Most likely the latter
obtains. In the second place, we have seen that each tribal
community in the rural Kenya has its own ideology which is
shared in common by the majority of the members of each
community. In which case, we have as many ideologies as we
have tribal communities. To this we may add a possible
cluster of ideologies held by individuals or cliques of
individuals. The last may be socially inconsequential
depending on the number of the individuals subscribing to a
particular ideology in the cluster; at least this would be the
case in the short run. In a word, Kenya is innocent of a
national ideology shared in common by a majority of the Kenyans
while it has a legion of tribally bred ideologies.
If in future Kenya succeeds in becoming a united nation, there will have to be one dominant national ideology in terms of which a new national culture will be created and the living and the unborn Kenyans will be socialized. Why is such a dominant national ideology necessary and what are its uses in the developing Kenya? We will attempt to answer this question with reference to the rural development in Kenya.

The present government of Kenya has decided to give priority to rural development with a view to transforming the outlook of rural Kenya in the next ten years. This intention was recently declared by the Minister for Finance and Economic Planning, Mr. Mwai Kibaki. In the intended development, premium is put on the expansion and improvement of the agricultural sector and the infrastructures associated therewith. Apparently what the government intends is to transform the material environment of the rural areas of Kenya. To be sure, such a transformation is both essential and worthwhile, but it is by no means the only essential and worthwhile aspect of nation-building on which the society and its government should put a premium. We may even go further and assert that in the process of nation-building a premium should not be put on the material aspects of a nation at all since the very concept of a nation, when radicalized, is primarily non-material. As we have mentioned earlier, a nation is first and foremost a matter of commonly shared ideas, beliefs, values and images of the future. By its very nature, a nation is essentially ideological.

Much effort and resources will have been wasted if the material development of the rural areas leaves Kenya as a socio-political container of the prevailing legion of tribally bred ideologies. To avoid this eventuality, it will be necessary to couple the efforts at the material development of the rural areas with the efforts to cultivate, adopt and disseminate an explicit national ideology to supplant the existing non-national tribalistic ideologies.
In addition to being instrumental in the efforts to bring about general national unity, itself a very important aspect of nation-building, an explicit national ideology will also specifically facilitate the rural development in a very significant manner. The idea of rural development implies a conscious effort to cause the rural areas to change for the better not only materially but also sociologically and psychologically. In which case, rural development will necessarily involve an attack on the existing tribal orders and their supporting ideas, beliefs and values, thus causing disintegration of both the tribal social systems and the ideologies upon which they rest. The more there will be of social change of this sort, either actually, imminently or imminently, the more there will be a need for a new ideology in terms of which the disintegrated social order will be re-integrated and the shape of the future order that is expected will be defined. Since the expected future order must be a national one, its ideology must also be national.

Introduction of a new ideology is not an operation but a process which takes some time before a significant number of the people subscribing to the new ideology both understand and internalize it. An ideology is meaningful only when its principles are reasonably understood and internalized. Because of the time required for this to take place, we are not here taking the position that rural development should be ignored or deemphasized until a new national ideology is formulated, adopted and successfully disseminated. All we are saying is that the ideological development of a people is the key to social, political and economic development of such a people and that, therefore, in the event of nation-building or planning for development ideological development should be stressed with all seriousness.
IDEOLOGICAL PENETRATION AND ORGANIZATION
FOR RURAL TRANSFORMATION IN TANZANIA:
A MOROGORO CASE STUDY *

(A Study in Ideological Persuasion as a Development Strategy)

S.S. Mushi
Yale University

A BASIC ASSUMPTION

The basic assumption with which this study begins (and continues) is that a well-formulated, well-articulated and well-disseminated ideology can play an important role in national development generally, and rural development in particular. The actual role it plays in the Tanzanian context - or, more specifically, in the Morogoro case - can only be determined after the necessary data has been collected and analysed.

IDEOLOGY AS AN INPUT FOR RURAL DEVELOPMENT

It is important that we situate ideology in the larger context in which it will be studied. In the first place, ideology is seen as one of several essential inputs for a planned development of a country determined to achieve a rapid transition in three areas, namely (1) from 'traditionalism' to 'modernity', (2) from a capitalist development orientation to a socialist development orientation, and (3) from rural economic stagnation and poverty to rural dynamism and economic growth. What role does the ideological input play in these three areas of 'transition'? How does the Tanzanian ideology reflect these three needs?

Second, as far as the rural areas are concerned, Tanzanian policies are geared towards the achievement of two main goals - (1) economic development and (2) rural socialism (ujamaa vijijini). In this study, we shall have to bear in mind the problem of striking a balance between these two equally valued goals. In other words, we are assuming that the achievement of rural socialism is quite a different thing from the achievement of rural development, at least in the conventional economic sense.¹

¹ See the Dar Declaration (Party Guidelines) for a non-conventional definition of development. TANU, Mwongozo mpya, Dar es Salaam, 1971.

* Written as a proposal for a study but presented to the Workshop because of its relevance.
Third, ideology requires an organization, if it is to be operationalized. Hence, ideological penetration must be studied in concrete organizational contexts. It means we must proceed with the essential distinction between 'pure' ideology and 'applied' (or organizational) ideology in mind. The former refers to the highly generalized ideals, values and principles which a regime formulates to guide its policy and action. The latter refers to the actual norms of behaviour and organizational modes geared to the achievement of the national goals. We shall return to the distinction between pure and applied ideology a little later.

Fourth, a study of ideological persuasion as a strategy for development must be undertaken within the context of the other essential development inputs, although these other inputs will remain on the periphery - as factors setting limits to the effectiveness of the ideology, or as factors determining the particular ideological orientation. We can talk of three broad categories of 'development inputs' namely (1) psychonormative inputs, (2) technical inputs, and (3) material inputs. Psychonormative inputs include all psychological inputs and the normative inputs relating to the behavioural patterns of a people. Under planned development, psychonormative inputs will depend largely on the various agents and machinery for political socialization (or indoctrination); and as such, they are basically 'political inputs', geared to the creation of motivation in a particular direction. Where these inputs are consciously organized to harmonize with the salient features of the country's formal ideology, they become 'ideological inputs'. Technical inputs include all aspects of technique; all skills - including organizational skill - or, in short, 'technical knowhow'. It includes also ideas of work simplification, work efficiency and work effectiveness. Material inputs include all inputs of a material nature, from food to a technological implement like a hoe.

It is perhaps important to distinguish among psychonormative, political and ideological inputs: for not all psychonormative inputs are political or ideological, and not all political inputs are strictly ideological. Every society has some machinery for socialization, but all the values that the individual internalises from childhood are not political - some being social and others economic or moral. The 'teaching for citizenship' (or civics) undertaken by almost every society is a political exercise, but not all such programmes are designed to serve a particular ideology - perhaps can serve any ideology, capitalist, socialist or 'welfare state'.

or a tractor; fertilizers, land, cars, planes, etc. This category of inputs is also related to energy in its various forms - e.g. electricity which depends on the availability of certain essential materials.

The three broad classes of inputs can therefore be referred to as (1) motivation, (2) technique and (3) energy. The focus of our study will be on the first type of inputs, but we must bear in mind that we are investigating 'guided motivation' rather than motivation in the more general sense of 'an achievement', for the Tanzanian ideology is geared towards a particular type of motivation and therefore a particular type of development. However, development requires all these three types of inputs, and therefore, the effectiveness of the ideological inputs (or 'guided motivation') can be accurately assessed only within the context of the other types of inputs. There are two other advantages in examining the role of ideology within the overall context of the essential inputs. First, it makes it possible to investigate the extent to which the condition of the other inputs affects ideological inputs, and vice versa. Secondly, it helps us to avoid the temptation to posit 'ideological determinism' - a temptation which might creep into our conclusions if all the other factors were presumed to be constant.

It is important to emphasize at this point that the choice of 'ideological penetration' or 'ideological persuasion' as the focus of the present study does not reflect any a priori belief in ideological or ethico-motivational determinism. It is not an a priori affirmation of Weber or rejection of Marx; for we are of the opinion that the quarrel about what factors 'determine' development, or which is the truer "Bible" - the "Communist Manifesto" (and "Das Kapital") or the "Protestant Ethic" - is a futile one, unless it is closely tied to specific conditions. Discrepancies among the essential inputs do, of course, influence the pattern and rate of total development, but none can alone determine development or the general societal relationships. If a particular set of inputs becomes decisive at a given point, it is decisive only in the light of the state of the other sets of inputs; certainly not decisive irrespective of them. We shall argue later that in the light of the state of the other inputs, ideological inputs

at this point could as well be decisive for Tanzania's further development. This remains a tentative hypothesis until sufficient data has been collected.

**TANAPPLIED IDEOLOGY: IDEOLOGICAL PENETRATION**

We said earlier that in this study we shall deliberately keep in mind the distinction between pure ideology and applied (or practical) ideology. We shall therefore try to clarify this distinction as well as state what our present theoretical conception of 'ideological penetration' entails.

Perhaps it is more correct to talk of two manifestations or forms of the total ideology - pure and applied - rather than *types*. The pure form is to be found initially in various written documents or in the minds of the initiators, and only later - and after a hard and long process of socialization - does it manifest itself in the thinking processes of the general populace. The pure form of ideology can very easily become a ritual if it is not supplied with suitable machinery for application. This is perhaps true of all values which lack avenues for application. They tend to seek expression in occasional ritualistic ceremonies and display of symbols, rather than in a systematic, goal-oriented action. Thoroughly internalized, the values and ideals contained in the pure ideology may play a useful integrational role, but their real success depends on their successful conversion into organizational normals which define the desired behavioural pattern. This conversion leads to the applied manifestations or forms of the ideology.

In the Tanzanian case, the Arusha Declaration, the Arusha Declaration and TANU's policy on socialism and self-reliance, Dar es Salaam, 1967. Announced on February 5, 1967. The Arusha Declaration marked a turning point in Tanzanian politics. The ideology of the country was made explicit by it, and subsequent policy pamphlets have been based on it.

The Dar Declaration refers to the "Party Guidelines" of February, 1971, which - among other things - stressed the following: (1) that, through TANU, the people would be given a chance to discuss all public issues before any firm decision is taken by the Government, (2) that from henceforth the Party and the armed forces would henceforth become state organs of revolution - the African revolution which entails liberation of the masses from the snare of poverty, ignorance and disease, (3) that people's militia would be established throughout the country, and (4) that to succeed in this revolution, the people needed to be equipped with three main weapons - psychological self-confidence, conditions, and material development. See TANU's *Mwongozo Mpya.*
the various writings of President Nyerere, and other party publications, are the main sources of the country's pure ideology. This study will have to begin by critically examining the important tenets of the country's pure ideology as well as suggesting the possible sociopolitical and socioeconomic factors - internal and external - which might have contributed to its 'origin'. The section on 'Methodology' outlines briefly how the study will proceed from here.

In this study we shall have to keep in mind the three common 'dangers' which threaten many ideologies. They are (1) the danger of 'ritualization' we mentioned above, where the ideology becomes more or less a dead 'museum piece' rather than a dynamic force behind development, (2) the danger of converting the 'revolution of rising expectations' into a 'revolution of rising frustration' where organization and opportunity for self- or communal- advancement lag behind the demands instigated by the pure ideology; and (3) the danger of 'dogmatism' - or 'political religion' in an Apterian sense - which may create inflexibilities incompatible with a healthy development.

What, then does 'ideological penetration' involve? We hinted earlier that we can distinguish between pure ideology and applied ideology in terms of values and norms. The pure aspect is concerned with the values - e.g. the moral and ethical conceptions of 'right' and 'wrong', 'good' and 'bad', and the applied aspect is concerned with norms - e.g. rules which prescribe behaviour in concrete situations and therefore expected to have direct action consequences. Thus the total ideology consists of both values and norms. Hence, one way of thinking about 'ideological penetration' is in terms of values and norms of individuals or communities.

To adopt this approach, one must accept the assumption that the individual's way of thinking is dependent on his value-orientation vis-a-vis his total environment, and the individual or communal mode of behaviour is dependent on the social or legal norms prevailing in the particular social system or organization of which he is a member. Other factors being equal, we should expect a given set of values (or, in our case, pure ideology) to give rise to a particular set of norms (or, in our case, organizational behaviour).

In the real world of action, however, other factors do often come in - e.g. force (legal or physical) may be used to create (or perpetuate) norms which are antithetical to existing values.

A revolutionary ideology aims at changing both values and norms, the way of thinking and pattern of behaviour, the 'mental culture' and 'material culture'. The change is achieved via an organization which replaces, wholly or partially, an existing (say, traditional) social system, both functionally and integrationally. Therefore, a study of ideological penetration (in the African case) is a study of the process whereby the traditional psychonormative pattern supported by the traditional (and colonial) social structure is replaced by a new psychonormative pattern (a set of values and norms) supported by a modern organization. It should be emphasized that it is not only the organizational structure which is replaced, but the values and norms as well.

How does the Tanzanian situation compare with this model of revolutionary change? To what extent is the Tanzanian ideology 'revolutionary' in the above sense? These are some of the questions to be illuminated by the Morogoro case study. We shall justify our choice of Morogoro later.

In investigating the degree of ideological penetration, one needs to distinguish carefully between values and norms or, as we said earlier, pure ideology and applied ideology. The concepts of values and norms are widely used in sociological literature, but they are not usually clearly differentiated. To adopt Schumann's distinction, 'Values are related to ideas of what is desirable and norms to what behaviour ought to be. Values have action consequences only in conjunction with an intervening element such as a norm. A man may value honest, but the value is only actualized behaviourally if he can translate his conception of honest into behavioural rules such
as telling the truth, never betraying a friend, and honouring one's obligations". In other words, while values stand for the 'tendencies' and 'orientations' which define a general direction which behaviour ought to take, without giving prescriptions about the form it should take, norms are proclaimed (normally with enforcing sanctions) with the exceptions of behavioural compliance.

Methodologically, as we shall outline later, the values (or the impact of the pure ideology) will have to be investigated through the use of (1) in-depth interviews and (2) analysis of responses to a well worked out questionnaire. Being a psychological phenomenon — a mental process or a way of thinking — values are not accessible directly; an 'observed' behavioural pattern cannot be taken as a sufficient proof that certain values are firmly held, for there are other ways of inducing behaviour. The norms (or the impact of applied ideology), however, are directly accessible, for they can be observed in the day-to-day behaviour in organizations or places of activity. The technique to be used here is that of 'participant observation'. Indices of penetration and persuasion will have to be worked out later.

THE SALIENT FEATURES OF THE IDEOLOGY

If one were to study ideological penetration in modern Russia or modern China, one would have to take the Marxist theme of 'class struggle' very seriously in the total frame of analysis. The question I have had to ask myself is whether this approach is suitable for the Tanzania case, and my tentative conclusion is that it is not.

9. Ibid. see footnote on p.

10. Ibid. For a further discussion of this point, see Henry W. Tieckman and George C. Homans, "Psychological Aspects of Social Structure", in Handbook of Social Psychology (Reading), Massachusetts and London, 1959, II, p.786. See also Homans, The Human Group New York, 1950, p.127, where he writes of values that "men bring to a group from the larger society", and Talcott Parsons, "The Social System", II. Glen col, 1959, p.12, where he refers to values as "elements of a shared symbolic system which serves as a criterion or standard for selection among the alternatives of orientation which are intrinsically open in a situation". Elsewhere, Parsons defines norms as "verbal descriptions of the concrete course of action thus regarded as desirable, combined with an injunction to make certain future actions conform to this course", see his "The Structure of Social Action", Ill Glen col, 1949, p.75.
In the case of Tanzania, the biggest struggle is 'ideological' rather than 'class' in the Marxist sense of 'class struggle'. I should explain that this is not to deny the existence of economic classes in Tanzania both economic and ideological 'classes' exist, and rather paradoxically - they do not correspond to the fine divisions of 'haves' and 'have-nots'. Some very poor workers and peasants who have acquired the individualist, capitalist values can be (and in some 'known' cases have been) just as opposed to socialist transformation as the rich.

Again, very few areas of rural Tanzania have an entrenched landed aristocracy of the Nyarubanja type, and where it existed, it has more or less disappeared. The main struggle, therefore, is that of 'psychonormative rebirth', the elimination of the 'acquisitive instincts' from the minds of the rich as well as the poor. However, the notion of 'class struggle' may still be used by politicians as a strategy for rural mobilization and 'mass persuasion', as it was used in China in the period of Land Reform.

Whereas the salient feature of the pure ideology of the Chinese and Soviet Communists is the notion of struggle in the Marxist materialist sense, the salient feature of the pure ideology of Tanzania socialists ought to be the notion of struggle in the sense of differing ideals and expectations. This notion is consistent with Nyerere's assertion that "Socialism is an attitude of mind", and his rather paradoxical argument that a millionaire can be a good socialist just as a poor man can be a capitalist (in desire). The former cannot, of course, be a product of a socialist society.

For a useful recent account of the Nyarubanja land system, see P.W. James, Land tenure and policy in Tanzania. Dar es Salaam, East African Literature Bureau, 1971, pp.70-75. Practised by the Bahaya of North-Western Tanzania (Bukoba), the Nyarubanja land system was one of the most feudalist traditional land systems in Africa.

Amongst the Bahaya of Bukoba, psychological scars still remain, they are not a formidable barrier to rural reconstruction.

For an interesting study of mass persuasion in communist China, see Frederick T.C. Yu, Mass persuasion in Communist China, London, Pall Mall Press, 1964.

Schurmann, op. cit., p. 39.

In the Tanzanian case, therefore, the real problem is how
to create the 'correct' attitude of mind among the leaders and the
general populace. The problem of dealing with the remnant of 'rural
kulaks' and the so-called urban 'labour aristocracy' or 'bureaucratic
bourgeoisie' is of a far smaller magnitude. While this remains our
present (tentative) hypothesis, we shall not hesitate to change our
formulation if the data tend to confirm the contrary opinion.

The allied problem is that of motivating the people to work
than before, for the socialist ideology is a development ideology at
the same time. The traditional 'exploitation' in the rural areas due to
'idle labour force' and charity extended to lazy relatives has little,
if anything, to do with the Marxian notion of class exploitation. The
Tanzanian ideology aims to eliminate this rural parasitism. The
only areas where we could apply a 'class struggle' approach with some
justification are (1) the relationship between the indigenous populatior,
and the 'foreign' population (mainly Asians in urban areas) - but
even here we must remember that 'political power' lies with the former,
and (2) Tanzania (as a whole) as a poor nation versus the richer,
imperialist world around it. For reasons we cannot go into here, the
gap between rural and urban areas does not lend itself to class
analysis.

There is another important feature of the Tanzanian ideology
which must be emphasized here. It lacks the 'doctrinaire' element found
in most communist ideologies, and - unlike them - it does not undertake
to proletarianize the rural population as an important means of creating
rural socialism. Even if this had been intended, Tanzania’s technologies
poverty would have forbidden it, for even China has now realized that a
total proletarianization of the peasantry is a distant goal which must
await a technological transformation far greater than can be afforded
by the regime at the present.

Proletarianization of the peasantry - as a socialist and
development strategy - entails their total or partial conversion
into state workers; conversion of the village into a factory, the peas

16. Myerere argues that parasitism was resented in traditional
African societies. This may be so, but it must be admitted that
idle labour existed and that the universal charity principle tended
This is an undertaking which Tanzania cannot afford at the present time; even in the rich, industrial Soviet Union this kind of conversion has not been completed. As an alternative, Tanzania aims at tapping the traditional communal values and norms of organization to create dynamic micro-societies in the rural areas, whose member work cooperatively and share the communal products equitably. Where appropriate, cottage industries are encouraged but their progress so far indicates that it would be long before every peasant were proletarianized, even if this had been the aim of the regime.

There are 'state farms' in Tanzania, but these were not established with the purpose of converting peasants into state employees. Their two primary functions are (1) to serve as a model of modern farming, and (2) to increase total agricultural production of certain desired goods. The Arusha Declaration states clearly that Tanzania is a country of both workers and peasants. With the increasing socialization of industry (particularly in the urban areas), and the ruling that leaders should not have non-domestic personal employees, the term 'workers' will very soon mean 'state workers'; but it is not conceivable that the peasantry will be converted into state workers in the near future.

It must be emphasized that Nyerere's political thought does not characterize ideological struggle as an inevitable 'polarization' between the individual and the group - a method of solving 'contradictions' envisaged by Mao's ideas of 'thought reform'. In our investigation, however, we shall have to keep in mind the various

20. However, some people - particularly those living on the outskirts of towns and the city of Dar es Salaam - are both peasants and part-time workers, or workers and part-time farmers.
possible areas of 'ideological contradictions'. We briefly outline these possible areas below.

IDEOLOGICAL STRUGGLE: SOURCES OF CONTRADICTIONS.

Theoretically, it is possible to identify at least six main areas of ideological tensions and contradictions. These are:

1. The new pure ideology versus the new applied ideology (i.e., new values v. new norms)
2. The new pure ideology versus the old pure ideology (i.e., new values v. old values or socialism v. capitalism)
3. The new applied ideology versus the old applied ideology (i.e., new norms v. old norms)
4. The ethico-moral orientation of the political cadre versus the 'scientific' orientation of the professional man (i.e., 'Green' v. 'Expert')
5. 'Expectations' versus achievement (i.e., the 'ideal' v. the 'actual')
6. The revolutionary tendencies of the 'have-nots' versus the conservative or reactionary tendencies of the 'haves' (i.e., change v. status quo)

A further recombination of these 'opposites' is possible, but these serve as an illustration for the moment. We have room for only a brief word on each of these possible areas of contradiction.

A contradiction between the pure ideology and the applied ideology occurs when there is a discrepancy between the central values of the pure ideology and the norms of application. We have already indicated the likely outcome of such a contradiction, and as such, we need no further comments here.

A contradiction between a new pure ideology and an old pure ideology is probably one of the commonest contradictions in any revolutionary situation. In the case of the French Revolution, it was a contradiction between the mercantilist values of the 'up-starts' (the bourgeoisie and petty bourgeoisie) emerging from industrialism and the feudalist values of the landed aristocracy and clergy perpetuated by the ancien régime. In the case of the Russian Revolution, it was a contradiction between the egalitarian values of the militantly revolutionary Bolsheviks (as well as the moderately revolutionary Mensheviks) and the conservative feudal values of the tsarist régime. In the Tanzanian case, two sources exist, (1) the 'modern' ujamaa values versus the 'traditional' value patterns which tend to reinforce kinship relationships, rural immobility and subsistence economy, on the one hand, and (2) the modern ujamaa values versus the colonially-influenced individualism and competitiveness, on the other.
Equally common is the contradiction between the new applied ideology and the old applied ideology - or the new 'rules of the game' versus the old 'rules of the game'. This could also be illustrated by examples from such great revolutions as the French, the Russian and the Chinese. It involves a discrepancy between the new norms of behaviour and those of the old regime. This kind of discrepancy is beginning to be felt in the Tanzanian Civil Service today: the old colonial bureaucratic norms of behaviour (rigidly perpetuated in the 'General Orders') have almost failed to cope with the present revolutionary tempo.

The most problematical contradiction is likely to be the one between the ethico-moral orientation of the political cadres and the scientific orientation of the professionals. This is essentially the tricky problem of 'Red and Expert' (as opposed to 'Red' and 'Expert') which the Chinese have been grappling with for the last decade and a half.

In the Tanzanian case, it will be a problem of 'Green and Expert'.

A contradiction between expectations and achievement occurs when the people perceive a discrepancy between the 'ideal' and the 'actual' that is when the promised development (e.g. improvements in the living standards of the people) does not occur. If the 'ideal society' is not perceived by the people, a general apathy - among other possible outcomes - may occur.

The contradiction between the "haves" and "have-nots" is a familiar one. In addition to the usual revisionist or reactionary tendencies attributed to the 'haves', this contradiction will probably be heightened by an increasing 'evasion' of the 'leadership code' on the part of the 'haves'.


For a discussion of the recent changes in the Chinese views of the problem of 'red and expert' see Schurmann, "Ideology and Organization in Communist China," op. cit, esp. pp. 564-5.

Two days after the Arusha Declaration (7-2-1967), President Nyerere proclaimed the youths of Tanzania "Green Guards."
part of the Tanzanian leaders - both at the centre and the periphery. We have mentioned all these theoretical possibilities to indicate the scope of the subject matter; they remain possibilities to be born in as our research progresses. They do not, however, constitute the real focus of the present study.

PERSUASION V. COERCION: THE MAJOR ELEMENTS OF THE STUDY.

To what extent can ideological persuasion be an alternative to coercion? This will be one of the important elements of the real focus of this study. The Morogoro area (actually the District) has been chosen with this theme in mind. This was one of the areas on mainland Tanzania which resisted colonial agricultural innovations most vehemently.

In mid-1950s, the British administration attempted to implement the Uluguru Land Scheme in Morogoro with the general purpose of improving agriculture for the Luguru people who live on the Luguru mountains. The scheme entailed, among other things, (1) the making of ridges, (2) the end of the traditional practice of clearing farms through burning, (3) the use of fertilizers and (4) a move of some people from the congested mountainous areas to the plains which afforded plenty of empty land. Local resistance was so high that the British administration had to abandon the scheme after a series of violent episodes.

Why did the British 'coercive' approach fail? How successful have the post-independence measures been? To what extent can we attribute these successes (if any) to ideological persuasion, or to such other factors as the 'legitimacy' of the present regime? These questions will have to be examined in conjunction with such larger questions as (1) mass participation as a method of ideological persuasion, (2) the national criteria versus the local criteria, (3) the centralization-decentralization debate and its relevance to ideological penetration and rural transformation, and (4) the general problem of incentives.

26. The leadership code is contained in the Arusha Declaration. It forbids the leaders from amusing personal wealth, but cases of evasion by the top leaders are openly acknowledged by the Party has recently sought a legal solution to the problem.

27. For an account of these resistences, See Roland Young, Smoke in the Hills, London, 1960.
In investigating the role of ideological persuasion in rural transformation, we shall have to take into consideration all the alternatives at the disposal of the regime. In analysing the elements of complex organization Amitai Etzioni refers to three types of 'control', namely (1) normative, (2) remunerative and (3) coercive.\textsuperscript{28} Normative control refers to behaviour which is induced by the subject's belief in, and commitment to, a set of attitudes. Remunerative control is the manipulation of material rewards, to which a subject voluntarily responds because he considers the inputs of efforts and other valued resources required to be worth the value of the material rewards. Coercive control is, residually, behaviour induced by sanctions which are neither remunerative nor normative; it includes the use of force (legal or physical) or threats of force, fines, and other similar deprivations.

We can therefore say that the Tanzania regime has these three ways of inducing rural transformation. The normative one involves ideological persuasion - the ruralites must be 'persuaded' that the proposed innovations in their ways of life (e.g., adopting new agricultural methods or abandoning their families and habitats to go out and form a modern ujamaa village) is a noble idea - almost a 'consummatory value' in the Weberian sense.\textsuperscript{29} The remunerative control system involves a careful calculation of 'instrumental values',\textsuperscript{30} on the part of those required to change their present ways of life, and expectations of receiving material rewards from the centre. In other words, a remunerative control system depends primarily on material incentives. This system can be extremely expensive for a poor country like Tanzania which is trying to build socialism; it is perhaps more suitable for a capitalist-oriented development situation. What about coercion? Besides being antithetical to Tanzanian ideology, the coercive control system would be just as expensive as the remunerative control system for a poor country such as Tanzania.


\textsuperscript{29} For a discussion of consummatory values in the African context, see Apter, \textit{op. cit.}, esp. pp. 116, & 423-8, where consummatory values are discussed in connection with the Ashanti of Ghana.

\textsuperscript{30} \textit{Ibid.}, pp. 83-5, 106-12; 259-62; & 427-28, where instrumental values are discussed in connection with the Baganda of Uganda.
It would seem, therefore, that the most appropriate control system for Tanzania at the present is the normative one which involves 'mass persuasion'. This requires emphasis on mass socialization so that the regime can expect positive response to innovations without (1) too much use of force (which is too expensive, even if it were desirable), and (2) without expecting too much material assistance from the centre (which the regime cannot afford). This is also in conformity with the country's policy of 'self-reliance' apart from being a logical alternative for a poor country.

But this is only a logical deduction, empirical data must be used to show (1) the degree to which 'ideological persuasion' can complement or eliminate the use of coercion, (2) the degree to which it can ensure positive response to innovations without great amounts of material inputs at the beginning (e.g. tractors, harvesters, etc.), (3) the degree to which local leaders comply with Nyerere's ideas of 'freedom' as the foundation of 'development', and (4) the degree to which the people are actually 'persuaded' about the intrinsic nobleness of the various social innovations demanded by the ideology.

The various directions and levels this study will take depend on the various elements which form the focus of the study. We must, therefore, identify these elements more clearly and then suggest the most suitable method of investigation for each. We said earlier that this is primarily a study of 'ideological persuasion as a development strategy'. What, precisely, does this entail? We shall briefly outline the main elements of the question.

The first key element is the ideology itself - i.e., the nature of the pure ideology and how it is related to rural development. The second key element is persuasion; but ideological persuasion implies also ideological penetration. Hence, the third key element is penetration.

31. The policy of "Self-Reliance" is contained in the "Arusha Declaration" op. cit.
32. In his "Freedom and Development" (The Standard, 18 October 1969) Nyerere rules out the use of coercion as a system of control. Of course, this does not mean that force will not be used in some situations.
The fourth key element is organization, since ideological penetration cannot take place in 'social vacuum', but in concrete organizational contexts.

The fifth key element in our question is choice, for to talk of ideological persuasion can (1) be an alternative to other development strategies, or (2) complement other possible strategies. Thus, this final key element of our study must be examined in connection with the other two possible strategies - viz. coercive and remunerative systems.

In the Tanzanian context, a logical or sequential ordering of these key elements would probably be as follows:— (1) the nature of the pure ideology, (2) the conversion of the pure ideology into applied ideology, or the creation of organizations and norms of application; (3) the degree of ideological penetration with regard to individuals and groups, leaders and the led; (4) the degree of ideological persuasion with regard to individuals and groups, leaders and the led, and (5) the extent to which ideological persuasion can be said to be either a suitable alternative to other development strategies or a useful complement for these other strategies. How will each of these key elements be investigated? This brings us to the problem of methodology and scales for measurement.

A METHODOLOGICAL NOTE:

The five key elements set out above can in fact be considered as the five main stages or levels of the study itself. The study amounts to tracing the national ideology, as it were, from Dar es Salaam where it is formulated (in its pure form) to the rural village where action takes place.

Between these two poles (i.e., the 'centre' and 'periphery') lie what we might term 'conveying belts' which include the various levels of leadership or sociopolitical organizations (e.g., the Party, cooperatives, the extension staff, the Regional, District and Ward Development Committees, etc.). Ideally, the conveying belts should constitute a two-way traffic, conveying information from the centre to the periphery and from the periphery to the centre. Thus, two important questions can be asked with regard to the pure ideology. First, we shall need to know the kind of 'transformation' that the pure ideology undergoes as it is conveyed from the centre to the periphery.
Methodologically, the first can easily be answered by analysing the various Party publications as well as those of the President, and by interviewing the key leaders at the centre. This can be done in Dar es Salaam. Analysis of 'ideological metamorphosis', however, is a little more complicated. It involves a careful comparison of the interpretations of the ideology at the various levels of the conveying belts - i.e. at the regional, district, divisional and village levels. Methodologically, we shall need to (1) interview leaders at these various levels, (2) examine the minutes and records of the various organizations at the various levels, and (3) participate (as an observer) in the meetings of such important organs as the Regional Development Fund (RDF), District Development and Planning Committee (DDPC), Ward Development Committees (WDC), etc., to see whether there are marked variations in the interpretation of important policy or ideological issues.

Our hypothesis is that 'ideological metamorphosis' can occur for any of the following reasons. First there may be cases of misinterpretation by the leaders at the local levels, either because of being of a lower calibre or lacking proper information from the centre. Secondly, there may be deliberate distortions by leaders who would like to hide their mirija or vested interests. Thirdly, metamorphosis occurs also as the pure ideology is converted into applied ideology - i.e. it tends to become less 'pure' the nearer it is to the actual place of activity. Finally, the local leaders may feel the need to de-emphasize certain aspects of the ideology - at least for an interim period - to be able to cope with unique problems of transition in their areas. In other words, the analysis of this metamorphosis as one moves away from Dar es Salaam to the rural case study, entails the analysis of the 'functional orientation' of the various agencies of the state concerned with rural transformation.

The third stage of the study - ideological penetration - will be more complicated than the second. Here we shall need to know the degree of knowledge that both leaders and the masses at

33. For instance, in high density cash crop areas such as and Bukoba, ujamaa villages may be de-emphasized in preference forms of co-operation which may be more practical for these areas - e.g., marketing co-operatives, etc.
the local level have of the various government policies and the salient values of the pure ideology. For the leaders, we intend to use verbal interviews (formal and informal); for the masses, we shall administer questionnaires to two or three manageable clusters strategically sampled within Morogoro District.

The fourth stage of the study—ideological persuasion—requires a more sophisticated analysis than the third. It will require 'in-depth' interviews for the leaders, and a well worked-out set of questions in the above questionnaire whose responses can give some indication of the degree of persuasion. A kind of 'scale' must be worked out. It is important that we should distinguish between 'penetration' and 'persuasion'. There can be penetration without persuasion, although the opposite is not true. While penetration refers mainly to the extent to which the ideology has reached (or affected positively or negatively) the remote areas of the country, persuasion refers to positive ideological commitment.

We hinted at the distinction between penetration and persuasion when we suggested a distinction between norms and values earlier in our discussion of the two forms of ideology—pure and applied. A high degree of penetration may suggest 'organizational success' but not necessarily 'socialization success', unless it is proved that the observed norms of behavior are, in fact, a reflection of the salient values of the pure ideology internalized by the individual or group concerned. A well worked-out questionnaire, administered under more or less 'natural' conditions, should be able to reveal the degree to which the salient values of the pure ideology have become 'central' in the thinking processes of the individual or group.

The final phase of the study—the assessment of ideological persuasion as a development strategy—may be less complicated in terms of data collecting than either the third or the fourth phases, but it is the most crucial aspect of the whole study, demanding a careful 'synthesis' of the various findings in the first four phases. One important source of information will be the records and minutes of the local development organs, including party branches, R.D.F., D.D.F.C., W.D.C., and City and District Council, etc.—which may reveal the thinking of the local
Leaders with regard to the balance between coercion and ideological persuasion or exhortation in securing mass participation in development projects or a move from the traditional social 'cocoon' to a modern ujamaa village. Another source will be interviews with individual leaders (as well as the people themselves) with regard to what methods they consider appropriate for 'activating' the people. 'Participant observation' of the day-to-day communal activities will be the most important source of qualitative data which will complement the quantitative data gathered at the various stages of the study. Again, the questionnaires suggested for the third and fourth levels of analysis will also include questions to whose responses may reveal the degree to which (1) the people expect to be forced into development projects, or (2) whether the people expect a great deal of material assistance from the centre as 'remuneration' or 'reward' for their willingness to accept innovations.

As a final word, I would like to say that I have deliberately avoided positining in advance rigid hypotheses, theories or models of analysis, as typically done in most social science prospectuses. I have always feared the danger or rather temptation of fitting data into a 'straight jacket' - a danger which is very real when one goes into the field with more or less fixed models and theories of change. I have tried to identify the problem to be studied, and tried to advance tentative hypotheses (mainly based on logical deduction) to define the starting point. After the study has begun, theory and data collecting and processing should reinforce each other.

35. Paradoxically, Ingle, Ibid., suggests that in the case of Handeni and Tanga Districts, the people were found to be more opposed than their leaders that only force could accelerate rural transformation.
SOME NOTES ON TANZANIA RURAL DEVELOPMENT STRATEGY:  
A CASE OF VIJIJI VYA UJAMAAR OF TANGA REGION

S. O. Odede
University of Dar es Salaam

According to the Ujamaa Progress Report No. II, dated March, 1971, there are now 2,623 Vijiji vya Ujamasas in Mainland Tanzania with a total population of 833,474, about 7% of the entire Mainland Tanzania population. If the above figures are genuine then there can be no doubt that the Tanzania peasants are participating in a rural development movement of a unique character. The unique aspect of this movement refers specifically to the politico-economic principles upon which the Vijiji vya Ujamaa movement is based: Socialism and Self-Reliance.

From the early fifties up to 1967 the rural development strategies of Mainland Tanzania - under the successive guidance of the Overseas Food Corporation, Tanganyika Agricultural Corporation, and the Rural Settlement Commission - was based on the politico-economic ideology of promoting "a healthy prosperous yeoman farmer class, firmly established on the land, appreciative of its fruits, jealous of its inherent wealth, and dedicated to maintaining family unit on it". Moreover this yeoman farmer class, jealous of its inherent wealth, was to be "one of the most establishing influences in an African Community". (O.F.C. 1954).

The two policy documents of 1967, the Arusha Declaration and Socialism and Rural Development, set a new policy pattern for rural development strategy which was to be carried out within the context of Vijiji vya Ujamaa formations. The Vijiji vya Ujamaa movement can therefore be well understood as an antithesis of the colonial/capitalist strategy of the yeoman farmer.
class. As socio-political institutions and productive units, the Vijiji vya Ujamaa are supposed to be the political instruments aimed at abolishing "yeoman" class ideology as well as to form the basis for socialising and creating further means of production in the rural Tanzania. In essence Tanzania has, since 1957, adopted Ujamaa as her strategy for rural development and Vijiji vya Ujamaa as institutional organs through which the peasants can realise Ujamaa.

In my opinion the basic issues which are raised in the context of Vijiji vya Ujamaa as a peasant socialist movement and as institutional instruments for creating Ujamaa are as follows:

1. What in essence is a Kijiji cha Ujamaa?
2. How is it to be brought about in terms of peasant mobilisation? Who or which party and state organs are responsible for mobilising the peasants, and for general guidance services and how?
3. What, in general, are the patterns of production and production relations in the current Vijiji vya Ujamaa?
4. Where do Vijiji vya Ujamaa stand in relation to the current private farmers and co-operative movement?

1. In his book, Socialism and Rural Development (1967), Nyerere described Kijiji cha Ujamaa as an institution "where a group of families will live together in a village and will work together on a communal farm for their common benefit". In other words, the founder of the theory of a Kijiji cha Ujamaa envisions it as an institution for collective social living, collective labour, collective production and distribution. This is indeed a model of a socialist institution based purely on farming, mainly on agricultural production and distribution activities. Can such a village really create a base for self-reliance? Experience has already proved that raw-material production alone cannot and does not create self-reliant producers. This strategy will succeed in creating a dependant socialist peasant...
who in turn may form a foundation for a socialist nation dependent upon a raw material export-economy. In other words, Kijiji cha Ujamaa is not envisaged as an integrated agricultural-industrial socialist productive unit. It may well be that the president, in describing a Kijiji cha Ujamaa as a socialist farming unit, had it in mind as a dynamic framework starting with a farming phase while progressing on to higher and more specialized and integrated methods and forms of production and distribution. As the patterns of productive activities of the current Vijiji vya Ujamaa indicate, there is an almost absolute bias towards farming activities with little or no indication of interest in cottage or other forms of industrial activities. This issue could become a challenging topic for research in relation to the current socialist peasant movement in rural Tanzania.

2. According to the Presidential Circular No.1 of 1969 Kijiji cha Ujamaa should be created on a voluntary basis and its productive and politico-administrative affairs be run by the members themselves. The term "voluntary" is quite deceptive and essentially inadequate, especially when the only question is mobilising manpower for implementation of a policy and strategy already agreed upon. "Voluntary" mobilisation for a movement - in this case for forming Vijiji vya Ujamaa - could be considered when, prior to the Arusha Declaration, the peasants were spontaneously forming Vijiji vya Ujamaa as tools of political and economic struggles against rural class enemies. It is true that by 1959 TANU, through its youth wing (TYL), had already launched villagisation programmes which were known as voluntary settlement schemes. Organisationally and in terms of economic aims these T.Y.L.-run voluntary schemes were similar to those under the guidance of the Rural Settlement Commission. At any rate by 1966 these voluntary movements had dwindled away, so that only the "yeoman type" schemes were existing by the time of Arusha Declaration. In other words the Rural Development Strategy enunciated in the Arusha Declaration and similar other
documents were not inspired either by nation-wide peasant debates based on socialism versus capitalism, or by a notable concrete peasant movement in the form of Vijiji vya Ujamaa. This view does not intend to play down potential capacity within the Tanzania peasantry for self-liberation movements. What is at stake here is the question whether it was possible, within the context of Tanzania before the Arusha Declaration, for a country wide peasant socialist movement to take place "voluntarily" in the absence of well planned programmes and schedules of mobilisation efforts.

My experience in Tanga Region proves, though in a limited way, that the agencies responsible for Vijiji vya Ujamaa have had to use varied forms of persuasion and even administrative force as opposed to mere voluntary peasant movement.

Institutionally the agencies essentially responsible for Vijiji vya Ujamaa mobilisation are: TANU (Vijiji vya Ujamaa Department in the headquarters), Ministry of Maendeleo (Vijiji vya Ujamaa Division, Regional Administration Division, and Rural Development Division), and Kilimo. Of these agencies, TANU and Vijiji vya Ujamaa Division are directly responsible for general mobilisation of Vijiji vya Ujamaa. Other governmental agencies are essentially responsible for technical matters and social services for the already established vijiji. As for the two mobilising institutions none has a central responsibility, although TANU is supposed to spearhead political and ideological education prior to, and after, the formation of a Kijiji cha Ujamaa. For the entire nation there are only three persons in the TANU department of Vijiji vya Ujamaa, and the three are stationed in the party headquarters in Dar es Salaam. It is physically impossible for such an understaffed department to carry out such a tremendous task of mobilising peasants on a

2. The Vijiji vya Ujamaa lived in by the author are: Mkinga Leo, Chakabuni, Sitahabu, Masaike, and Kwamangugu, Segars
A similar difficulty faces the Vijiji vya Ujamaa Division of Maendeleo. This division is charged with the twin tasks of technical and political mobilisation. Yet technically this division relies heavily on the rural development division within the same Ministry. The rural division in turn relies heavily for skilled and experienced agricultural personnel on Kilimo. Moreover there is no formal coordinating machinery between TANU and Maendeleo divisions responsible for Vijiji vya Ujamaa mobilisation.

Consequently a situation arises in which the two key mobilising agencies are weak as single entities and discharge overlapping and unco-ordinated activities. This situation has had the adverse effect of diluting a key mobilising factor: politico-ideological education of the peasantry. For whatever view any observer might hold, the Vijiji vya Ujamaa movement is essentially a political movement which requires a high consciousness of the socialist world outlook on the part of the peasantry. Without this politico-ideological ingredient as a dominant factor within the movement, the Vijiji vya Ujamaa will have no qualitative difference from the "yeoman settlement schemes". Observation based on the Vijiji vya Ujamaa movement in Tanga Region bring out some interesting features with regard to mobilisation efforts prevailing in the region. Of the six Vijiji vya Ujamaa only two were started after the 1967 call for a socialist strategy for rural development. The rest are outgrowths or ujamanisation of the former settlement scheme movement. For all the six villages, mobilisation efforts assumed the following features:

(a) Regional and/or Area Commissioners (both are the leading administrative and party leaders in their respective administrative areas) have spearheaded mobilisation movements.

(b) In most cases mobilisation has taken the form of promising governmental aids - such as water, roads, clinics, tractors, seeds, fertilizers, schools etc., for peasants who form a Kijiji cha Ujamaa.
(c) In some cases, for example Segera Kijiji cha Ujamaa, peasants were physically forced, by use of the local TYL under the direction of the then Regional Commissioner, to move into a Kijiji cha Ujamaa. At the same time facilities for building houses, a tractor for ploughing a communal shamba and other social services were provided to the village.

(d) There was little, if any, serious political education either by the party or by Vijiji vya Ujamaa division of Maendeleo.

Essentially the carrot/stick method has dominated mobilisation for Vijiji vya Ujamaa in this Region. Consequently most of the rank and file members of Vijiji vya Ujamaa I have so far visited are politically unaware of the basis and goal of the movement, and they tend to consider a Kijiji cha Ujamaa as a form of welfare center of the Government. They consider their own productive efforts ineffective without free government aid. This condition can create neither socialism nor self-reliance and may even prove more wasteful than the defunct settlement schemes in terms of the government technical personnel, and financial investment.

In general terms the key issue raised within the context of mobilisation for Vijiji vya Ujamaa may be summarised as follows:

(a) In a situation, such as in Tanzania, where the peasantry lack intense serf/feudal contradictions, what politico-ideological mobilisation methods can be used to bring about socialist production relations in the countryside, and how?

(b) In the case of Tanzania is it possible to unify the urban workers and peasantry under a common socialist ideological front, taking into account the existing workers' councils and Vijiji vya Ujamaa; or will the two different organs of socialist movements exist separately as is the case now with the likely consequences of the urban and rural manpower forces developing unevenly and even antagonistically?

In my opinion these questions call for some serious and multi-disciplinary research efforts, within the context of the current Tanzanian socialist experiment.
Socialism and Self-Reliance presuppose maximum utilisation of local materials and manpower resources on the basis of socialist relations of production. Looked at in relation to the existing production pattern of Vijiji vya Ujamaa this means rational allocation of collective labour for maximum collective utilisation of the existing agricultural potential. In the context of this definition I shall proceed to analyse the existing pattern of production and production relations in the Vijiji vya Ujamaa which I have visited.

Agriculture is the sole basis of production; and productive labour is split into two categories: communal labour in a communal shamba and private labour in a private shamba. Communal shambas are usually cleared and ploughed by Government supplied tractors, and in most cases the ploughed fields are too big for a village labour force, with the result that only part of the ploughed shamba is planted to maize, cashews or coconut trees. In other words the mechanisation input does not take into account the relative capacity of the unmechanised labour force. More often than not chemical fertilizers have become routine gifts to the villages. In most cases fertilizers are supplied in proportion to the tractor-ploughed shambas, with the consequences that large amounts of fertilizers remain unused. Besides, most of the shambas are virgin soils which do not demand immediate application of artificial fertilizers. In the spirit of self-reliance the peasants could well do with learning how to make and apply manure made through compost heaps and other similar simple but valuable techniques relative to the current low-technical level of Tanzanian peasantry. Intensive education on the improvement and utilisation of local cattle breeds for ploughing, harrowing and weeding could well be more practical, cheaper, and create a material base for technical and productive self-reliance than the indiscriminate use of expensive tractors.

Coming back to the issue of the allocation of productive labour between private and communal shambas, I observed an
obvious, but definitely a key, factor for assessing the process and relative magnitude of levels of socialization of labour and production in the said villages. With the exception of Segera Kijiji cha Ujamaa, all other villagers spent more than 3/4 of their productive labour in their private shambas. The material base for this uncommunal productive activity lay in the fact that almost all communal shambas, with the exception of Segera, were primarily devoted to cash crops such as sisal, cashew nuts and coconut trees, whose direct benefit to the peasants are extremely marginal and unreliable. Food crops, which are the life artery for the peasants, are grown on private shambas. It is therefore no wonder that the peasants, though communally living in a Kijiji cha Ujamaa, are otherwise producing uncommunally. In some cases, especially in Mkinga-Leo Kijiji cha Ujamaa, a great number of villagers own large coconut tree and cashew nut shambas from which they draw constant large cash incomes. These rich villagers consider a Kijiji cha Ujamaa as a necessary convenience for receiving free government social services, and see no reason for communal work. This basic weakness stems from three main sources:

(a) Lack of political education and awareness of the peasants as to what Vijiji vya Ujamaa movement is essentially about,

(b) erroneous governmental mobilisation efforts based on "free gift" campaigns for those who are "willing to live and work communally in a Kijiji cha Ujamaa",

(c) inadequate and essentially "bureaucratic expert" planning machinery for Vijiji vya Ujamaa by Regional and District planning committees. The peasants are not given adequate time to discuss their production problems in order to agree upon what and when to produce, how and how much. Consequently the peasants tend to be "apathetic" and "uncooperative".

Socialist production relies upon conscious planning and a high degree of political education and mobilisation of the direct producers - workers and peasants. In the case of Tanzania peasants who have not been faced with extreme land hunger and violent
Risings against landlordism, the incentive to create socialist production relations cannot spring from spontaneous and voluntary attitudes. Historical experience of agrarian movements towards socialism have so far sprung from conditions of intense class struggles. Tanzania too may potentially have her own form of class struggles. However the prevailing conditions of class relations in rural Tanzania are not sufficiently antagonistic to warrant a fierce class struggle for land reform. It therefore becomes the more necessary, if socialist relations of production and productive forces are to be built in Tanzania within the context of Vijiji vya Ujamaa, to intensify political and technical education prior to the formation of Vijiji vya Ujamaa. This task can only be accomplished if TANU has a sufficient number of highly conscious political and technical cadres. Moreover production plans for Vijiji vya Ujamaa should not rely solely on monocultural raw-material production. Diversification of agricultural production, specialisation, and simultaneous industrial/agricultural production on village levels, must form a component whole of the vijiji production efforts. Otherwise self-reliance as a policy guiding Tanzania's productive efforts could be diluted.

The issues of production raised above call for an all-out research effort.

The relative position of Vijiji vya Ujamaa with regard to the current private farmers and primary marketing co-operative network merits some observation. Strategically, and on the basis of a national policy commitment towards rural development, Vijiji vya Ujamaa occupy a priority position. In the context of agrarian productive efforts, private farmers are regarded as a transitory productive sector which must progressively diminish in favour of "communal living and communal production". Currently in Tanganyika the Survey Department is allocating for each Kijiji cha Ujamaa a five-mile radius piece of land. This is a uniform policy for all the Vijiji vya Ujamaa all over the nation. In terms of land the many private farmers will either forfeit large acreages or
join Vijiji vya Ujamaa. Moreover in terms of loans, from the Regional Development Fund and other governmental aid services, Vijiji vya Ujamaa are given priority considerations. This trend spells out a necessary diminishing of the private farming sector. The position of co-operatives is equally challenged. In their mature stages, Vijiji vya Ujamaa are supposed to be multipurpose co-operatives, taking over marketing activities upon which most of the current co-operatives are based. In fact there is already a general trend of granting trading rights on some agricultural commodities only to the advanced Vijiji vya Ujamaa, e.g. in Mwanza Region.

This process of giving supremacy to Vijiji vya Ujamaa, both in production and marketing, is bound to meet extremely difficult obstacles. Firstly the Vijiji vya Ujamaa must become viable and self-asserting institutions of production in order to replace traditional large farmer producers. Politically, the displaced farmers and small family producers may pose a serious problem unless persuaded and convinced of the usefulness of Ujamaa. This situation may well be a potential centre of class struggle.

The institution of cooperatives is the strongest in rural Tanzania. For the Vijiji vya Ujamaa to be able to overcome the established co-operative institutions requires the primarily unassailable productive strength of the former. The single material weakness of the co-operatives is their dependence on direct producers. Should Vijiji vya Ujamaa monopolise agrarian productive activities their battle against the current co-operatives would be easily won. Of course this would entail drastic marketing re-arrangements and training facilities for wana vijiji on marketing.

Creating a new social formation requires boldness and creativity. Tanzania has chosen a rural development strategy which demands the creation of a new social formation in the
rural areas. The peasants of Tanzania are being asked to take up the challenge. They have responded with remarkable enthusiasm. Collective living and collective production is the principle guiding the rural ujamaa movement. The peasants are told that salvation lies in their own collective productive efforts. Difficulties of politics, ideology, organisation, production and distribution are lying on their path to self-salvation. Mistakes will be made, and many are made now. Yet this is a necessary form of education by doing. Ujamaas are not socialist institutions yet. They are the seedbed on which to nurture the necessary socialist experiments. In the process of this worthy experimentation the position of Tanzanian and indeed African intellectuals must be made clear. Shall they throw their lot in with the peasants or sit back and be "objective"?
INTRODUCTION

The basic question this paper attempts to answer is, precisely what is the Kenyan Government doing in one particular rural locale? What administrative and manpower "inputs" are being expended in Mbere division of Embu District in Eastern Province? These prime questions can be broken down into many component parts. What officials are in the division? What do they do; that is, how do they spend their time? Why do they allocate their time the way they do? Are their patterns of activity productive or effective in a "developmental" sense? How does official behaviour contrast with or match the implied and stated goals of the various Government organizations involved in Mbere?

The questions stem from a realisation of the extent to which, all too frequently, we lack basic information and knowledge of the rural scene which (supposedly) we are trying to alter. This paper attempts to portray a composite picture of how one specific area is administered; to list the duties and activities of officials and agencies, and to analyse these officials' problems and difficulties with a view towards recommending practical alterations and partial solutions.

The area chosen for this study is Mbere division, a description of which follows in section II. The reasons for the choice are:

1. One of the authors has been living in the division since July, 1970, and he has the contacts and detailed local experience essential for a study of this type.
Mbere is one of the Kenya Government's five "first phase" Special Rural Development Programme (SRDP) areas and Government officers in the division, knowing that unusual activities are planned or are taking place, are perhaps more open in their discussions of duties and difficulties.

The study is limited in the sense that no claim is made that Mbere is a "typical" Kenyan division. We do not mean to suggest or imply that the administrative situation in Mbere is perfectly representative of any other area in Kenya. However, it is equally true that many of the problems faced in Mbere are found in other areas of the country, and it is highly likely that what takes place in Mbere broadly approximates what might be called "standard administrative behaviour" in Kenya. Still, it should be borne in mind that this paper is about Mbere division, and not Eastern Province, or Kenya as a whole.

As the paper stands, it is very much a first draft. We are still in the process of conducting interviews, interpreting the material gathered by research assistants, and going through documents, records and other written sources. What we can produce at present is likely to be amended as more data become available. Nonetheless, we have already gathered considerable information and even in this preliminary form we believe the material to be of interest.

Mbere

Although little has been published about Mbere, enough is known of its physical base and its social institutions to be able to summarise the main features.

Physical:

That part of the division which we include in our study embraces 1576 sq.km., which ranges from 4000' altitude in the northwest to less than 2000' in the southeast. Several residual "is dominate the landscape - Kiangombe (5918') Kanjiru (5081)"
and Kiambere (4904') being the most prominent. The Ena River
is the only permanent stream that flows through the area,
though the Thiba, Tana and Thuchi rivers form the western,
southeastern, and northern boundaries. Rainfall varies from
over 50" in the northwest to 36" at Kiambere, and much less
at lower altitudes. Rain is erratic, causing frequent food
shortages. Not only altitude and rainfall vary, but also soils,
some - as at Nguthi - being fertile loam, others being sandy
and rocky. Consequently there is a wide range of vegetation,
from the acacia-commiphora to the terminala-scrub 'thorn bush.'
Generally, the northwest sub-locations are physically more
favoured, while parts in the southeast are infertile and fly-
infested.

The Mbere are culturally and linguistically related
to their neighbours the Embu, Chuka-Tharaka, and Kamba:
however, they see themselves, and are regarded by others, as
a distinct group. We present an outline of their social
organization, parts of which have survived remarkably well.

Social:

The Mbere live in generally small and scattered home-
steads, (micii) each one consisting usually of a man, his wife
or wives, and children, plus perhaps some of his other relatives.
The number of persons in a micii ranges from about five to twelve,
though some have less, or more. About 50 to 100 micii form an
ituura, or village: most sub-locations have five to seven of
these villages.

The muhiruga or clan is still an important unit. Mbere
has two major clans, and about forty lesser clans. The division
into major clans (Niamata and Thagana) is still significant
politically. Though age-grades are of little importance today,
the idea of generational differences persists, and this sometimes
hinders communication between groups, perhaps acting as a barrier
to development.
More important than the clan is the lineage (nyomha) which is the effective unit for many purposes, especially control over rights in land.

Mbere social institutions are for the most part very flexible, at times bordering on a sort of social chaos. This is the result of their being poised unhappily between weakened traditional institutions and sanctions on one hand, and an as yet imperfectly grasped modernisation on the other. This too, increases the difficulties of introducing changes, as there is no one authority, no single shared set of values. This difficulty is seen clearly in the present process of land adjudication. (see David Brokensha, Land and Clans in Mbere, IDS Staff Paper No. 96, March 1971).

Religious beliefs are also in a state of flux. Many older people adhere to their traditional beliefs in the power of the ancestors to punish transgressors: this is frequently seen in the unease with which old men regard the cutting down of sacred groves of trees, formerly set aside for sacrifices and meetings. Yet it is not only the old illiterates who are bound by such beliefs. Very recently, one of the most "progressive" farmers in the division hanged himself; he had been accused by his daughter (by his first wife) of having caused the illness of her baby, by him having, three years previously, used her bride-wealth cattle to acquire his fifth wife. Such an act is known as ukoara; a pollution. The oath kaurugo, formerly important in dispute settlement over land or bridewealth, is now rarely used. Ago, the traditional doctors, are still of some importance: one nationally known group is located on the slopes of Kiangombe.

We summarise the retention of traditional beliefs and values to indicate that there have been considerable changes, and also that these are not, as among some pastoralist groups, an almost insuperable problem in introducing modernisation. In Mbere, nearly everyone wants more schools, dispensaries, better roads and water supplies, and is prepared to make some alteration in their way of life.
Economically, there have been many changes, though in parts a dual economy can clearly be seen - the cultivation of millet (also cowpeas and pigeon-peas) mainly by women, with maize as an intermediate crop and cash-crops such as tobacco or cotton being cultivated by men. Markets are, for the most part, rudimentary, with the exception of Ishiara in Evurore location (which, situated as it is near Chuka and Tharaka, has long been important), and Kiritiri in Mavuria location.

Mission activity started in the 1930's. The Catholics (Italian Consolata fathers) are active at Nthawa, less so in other locations, and the Anglican Church dominates Mavuria and Kanyumbara. There appears to be a strong correlation between education and cash-crops and modernisation generally - including abandoning female circumcision - on one hand, and A.C. membership on the other. The number of members of the independent "Israelite" sect is growing, judging by the number of adherents in distinctive dress - white turbans for men, and simple dresses with emblems (a cross, and initials) for women.

Mbere Special Rural Development Programme (SRDP):

Mbere is one of the five divisions selected for the experimental SRDP, which was due to start in July, 1970 but which is only now getting under way. Full details of the Mbere SRDP are given in the 125 page report written by the Eastern Province Planning Team in December, 1969. Here we summarise briefly the major proposals. The main object is to increase farm incomes by encouraging more efficient production of cotton, tobacco, and other lesser crops such as castor, katumani maize and Mexican 142 beans. Group ranches will be stressed, in order to improve livestock, and beekeeping is also important. New measures to facilitate the achievement of these objectives include land adjudication, encouragement of one amalgamated co-operative society, and the establishment of an agri-service station.
Major planned improvements in infrastructure are roads and water: several roads are to be put on all-weather basis, and a major water scheme will pump water from the Ema River through fifty-five miles of pipelines, to serve about half the population for domestic and livestock use.

The cost of Mbere SRDP exceeds ten million shillings, much of which is being donated by Norway, which is also supplying eight technical assistance people.

Mbere and Non-Mbere:

According to the Kenya Population Census of 1969, the Mbere number just under 50,000 (49,247) and rank 24th in numerical importance of Kenya's "tribes". Not surprisingly, there is, as among other minorities, a strong feeling of unity, mixed with a resentment of outsiders. While there is no evidence of personal animosity to individual officials, there is a general awareness of the relative absence of Mbere people in important positions. For example, of seven divisional heads - administration, development, agriculture, medical, community development, judicial and health - only one, the last mentioned, is a Mbere man. At the main high school, only two of a staff of more than twenty are Mbere. The posts are frequently held by people from the neighbouring Embu division and, as frequently happens, it is those who are nearest who are most resented. There are also a few traders, transport-owners and prospectors from the Central Province.

In passing, one might mention that expatriates and Asians have never played a prominent part in the division's affairs: at present there are, living in Mbere, three Scandinavian volunteers, two British, three Italian priests, three Indian teachers and a local Asian businessman.

Mbere in the Colonial Period:

In order to indicate some changes which have occurred during the last fifty years in Mbere division, we summarise major
emphases, and also give a detailed list of crops introduced and other innovations, in Appendix B. Such an approach might be useful in helping to explain present attitudes, and also in indicating what the colonial government tried, what has succeeded, and what methods were used.

The colonial period, for our purposes, may be divided into three phases:

i) Up to 1925 - Annexation; Law and Order

ii) 1925 - 1945 - Early changes

iii) 1945 - 1963 - Consolidation of selected developments

The latter two phases concern us for Mbere. 1925 has been chosen, somewhat arbitrarily, as the date of the establishment of the Embu Local Council. The council records indicate main emphases, which include, for this middle period:

a) Standardising or codifying customary law about marriage (bride-wealth, divorce, adultery); oaths, age-grades; land.

b) Prohibition or control over certain traditional practices. Whereas the councillors mainly initiated changes in the first category, it was usually the DC who placed on the agenda discussion of clitoridectomy, or the survival of twins.

c) The DC also initiated new practices such as burial of the dead, registration of births, deaths and marriages and the building of latrines.

d) From the 1920's (1925 was also the year of the appointment of the first agricultural superintendent at Embu) attempts were made to halt soil erosion and generally to conserve natural resources. Kiangombe had its higher slopes declared a forest reserve in 1940 and a series of regulations were passed on burning, contouring, grazing, cultivating
on slopes, and the like.

e) Development received an impetus after World War II: In 1951 a special educational cess of 4/- (p.a. per adult male) was requested by Mbere councillors, as "we are lagging behind other divisions": the measure was passed. More dispensaries were established, water supplies opened, markets and trading centres opened up. Ishiara market started in 1926, and by 1944 had a regular bus service to Embu.

In the early 1920's government had made little impact on Mbere beyond tax collection, rudimentary roads and prohibition of fighting. People then lived in small scattered settlements, using digging sticks to cultivate millet and cow peas, with few imported articles - even soap or cloth. By the 1960's there was a sketchy network of social services, an outline road system, a variety of crops and a whole bureaucratic army of council and government employees who counted, inspected, advised, forbade, allowed, exhorted, explained, licensed, collected money and worked at their trades. This is not to say that Mbere had undergone a really radical transformation, but that, looked at from the baseline of the 1920's, the 1970's represents a considerable advance.

The period from 1963 to 1970 is not covered directly here, though these years have also seen many changes, some a continuing and expansion of old policies, others, like the introduction of secondary schools, being quite new.

DISTRICT ADMINISTRATION

A - The District Officer:

At the apex of administration in Mbere stands the District Officer, or DO. He is the chief administrative officer in the area, the personal link in the very powerful chain of authority which, in Kenya, extends from the various DOs up to the forty-one
District Commissioners, through the seven Provincial Commissioners to the Office of the President, and beyond, to the prestigious figure of the President of the Republic, Mzee Jomo Kenyatta. As everywhere throughout the country, the Mbere DO is responsible for the coordination of all Government activity taking place in the area. Through his Chiefs and sub-Chiefs (which number four and twenty-one, respectively, in the area under discussion) the DO settles disputes, keeps the peace, and coordinates assessment and collection of the Graduated Personal Tax which must be paid by most able-bodied males possessing goods worth more than 960 Kenyan shillings. The assessment and collection of this tax, commonly known as GPT, is one of the major and most time consuming tasks for the DO and his subordinates; the process will be discussed in detail below.

Besides GPT duties, the DO also supervises and integrates the actions of the technical ministry (Agriculture, Community Development, etc.) officers in his area. In this dominant coordinating position the DO is a powerful figure, for, as is the case with other members of the Provincial Administration, he can:

........license political meetings, run local and other elections, co-ordinate the distribution of maize during shortage, oversee the land consolidation programme, and administer the other laws through which the Government seeks to implement its policies...2

As one former DO (not the Mbere man) has put it, "the DO can take action in any field".

The present Mbere DO is an experienced man. He has been in the Provincial Administration since 1961; prior to that he served in the Kenya army for twenty-two years. He is now a vigorous fifty year old. In his nine administrative years this officer has served in ten different areas. He became Mbere DO in September of 1970 and he will shortly leave the post and become Area Coordinator for the Special Rural Development Programme in Mbere division. Note that transfers for DOs are extremely frequent in Mbere. In the fifty-four months from December of 1956 through May of 1971 the division has had nine DOs, serving an average tour of six months each. One of these nine remained in post twenty-one months; eliminating this atypical tour one finds that the remaining eight DOs stayed in post, on average, for four months. The causes of rapid transfer are many, some officers priding themselves as to the number and variety of locales in which they have served. Still other officers view rapid transfers in a positive light, for they feel that if they are posted to an unappealing spot they will not have to wait long for reassignment. This strikes one as a rather double-edged sword. It seems reasonable to think that officers could learn more, do more, and generally be more effective if they were left in post for longer periods.

Unlike all other officers with which this study deals, the DO is not normally severely hampered by transport, petrol, housing and office problems. The DO is provided with a Land Rover and driver, and he can usually depend upon a generous supply of petrol. During the period of our research the Mbere DO was suddenly told to limit his petrol expenditure to forty-four gallons for one month; this appears to be an unusual occurrence. Transport and supply of petrol are major issues since few officers in the division have transport or access to transport. Even those that are provided with vehicles have a very limited supply of petrol. These issues will be returned to in following sections. As for office space and housing, a new residential office block opened by the Provincial Commissioner in February of 1970, is utilized, and there is a pleasant DO's...
house on the hill above the divisional seat, Siakago (a small market centre eighteen miles from Embu town). Note, however, that neither the house nor the office has electricity. The office does not have an internal water supply and that in the DO's house works sporadically. With the best of wills Siakago could not be described as an attractive spot. Amenities are few and officers complain of being "socially frustrated". One former DO asked for a transfer on the simple grounds that Siakago was "not a fit place for a civilized man to bring his family". He got the transfer.

The resident staff at the DO's office in Siakago consists of the driver of the DO's Land Rover, one clerk, one messenger, two "station-hands", and nine Area Police (APs), the latter headed by a Sergeant and a Corporal. These APs come under the direction of the DO, though the Chief of Nthawa location, in which Siakago lies, sometimes utilizes the police for his peace keeping and tax collection needs.

Obviously, the duties and powers of the DO are quite varied and he is, within the division, the pre-eminent figure in nearly all fields. Still, outside the division he is very much subordinate to the District Commissioner and other superior officers. What this means is that in the description which follows it must not automatically be assumed that the DO follows a certain course of action out of pure inclination; he is no doubt responding to formal and informal cues and directives given by his superiors in this strictly hierarchical system. The relations between divisional staff and superiors at District or Provincial level will only tangentially be considered in this paper, but it must be remembered not only that relations exist; they are of overwhelming import to the divisional staff.

4. Of his duties, the Mbere DO ranks tax (GPT) assessment, collection and related problems as his major task. He estimates
that he spends about 30% of his total time throughout the year on tax-related matters. Ideally, the tax process is designed to work as follows: About March of each year every location chief selects a sub-locational assessment committee, supposedly composed of a local minister of a church, a local trader, a politician, a farmer, a "common man", and the local sub-chief. In every sub-location the task of these committees is to assess which men are earning 960/- or more per year. Those assessed as earning this amount are liable for the minimum GPT payment of 48/-; the more one earns the more one pays up to the maximum GPT payment of 600/-, on income over £600 per year. (In reality the assessment committees are rarely so large, and the assessment is not normally done on the basis of earnings, but rather on the basis of possessions, mainly livestock). Each person so assessed is informed, in writing, of his GPT and he can protest the committee's decision up through the administrative hierarchy to the chief, the DO, or finally to the DC. All those who are "working", i.e., earning a cash wage from an employer, pay their GPT in other ways; it is only the farming peasants and the self-employed who pay their tax through the assessment mechanism. "Remissions" are given to many people, meaning they are excused from paying any GPT, primarily because they are not "earning" the minimum for the tax to be levied. Other reasons for remission are: being excessively old or young, a heavy school fees burden (not always a successful excuse), and sickness in the previous year. This year, 1971, many Mbere people have sought and received remissions on the grounds that the near complete failure of the short rains in November and December of 1970 resulted in poor crops.

The DO receives the reports of the assessment committee and compares the estimates to the figures from the previous year. The DO stated that he expected to see the GPT figure grow every year. Table 1 gives recent tax data.
TABLE 1 - GPT IN MBERE DIVISION

<table>
<thead>
<tr>
<th>Location</th>
<th>Assessed Amount</th>
<th>% collected by 30/9/70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evuore</td>
<td>25,044 Shs.</td>
<td>52%</td>
</tr>
<tr>
<td>Nthawa</td>
<td>46,836</td>
<td>49%</td>
</tr>
<tr>
<td>Mavuria</td>
<td>51,412</td>
<td>39%</td>
</tr>
<tr>
<td>Mbeti</td>
<td>47,016</td>
<td>85%</td>
</tr>
<tr>
<td>Total</td>
<td>172,908</td>
<td>Average 56%</td>
</tr>
</tbody>
</table>

Taxpayers are legally required to pay their year's GPT before 30 June, otherwise they will be classed as GPT defaulters. To be a GPT defaulter is a serious business, for if and when caught at a market day or during a tax raid the defaulter will probably - unless he pays on the spot or has a splendid excuse - spend a night in the Chief's "lock-up", be charged and sentenced by the magistrate. He must pay a 30/- fine, or, in default, serve thirty days imprisonment, usually meaning labour at the divisional office or chief's camp. On top of this, as a defaulter, he is still liable for the GPT, but he is now subject to "penalty", which is one-half of the GPT. Since the overwhelming number of rate payers are assessed at the minimal 48/- amount, this late penalty normally amounts to a further 24/-.

Without selling stock, many farmers have no way of paying GPT on time. For example, farmers growing cotton, one of the major cash crops in the division, do not sell their harvest before August, September or even October. They thus would appear to have a legitimate excuse for delay of payment. It is not quite clear how the administration deals with this situation, but it is likely that something of an informal "grace period"prevails until after the time of cash crop sales, say until the end of September. In the last quarter of the year collection efforts are stepped up and tax raids are held.

By the end of 1970, tax arrears in Mbera amounted to over 60,000/-. This was partially due to the poor short rains of 1970, but the incumbent DO also attributes the large amount outstanding
to the frequent transfers of DOs in the division. The DO argued
that the chiefs and sub-chiefs, while mainly responsible for
	collection, are the friends and neighbours of the people from
	who they must collect. These junior officials, says the DO,
used the "power" and persistent prodding of their superior


cr
ciser to encourage them. And indeed, when discussing the Mbere
chiefs, it will be seen that they are somewhat reluctant to push
hard on GPT collection.

By the first months of 1971, it was clear that a major
collection problem existed for the division. The District
Commissioner ordered that all 1970 arrears should be collected
by the end of April, 1971 and he authorised the DO and his
chiefs to start the legal process necessary to seize the livestock
of defaulters, and sell these at auction in order to recover the
outstanding GPT. This, of course, is something of a last resort
measure; all concerned officers recognize how unpopular such
activity makes them. The procedure is as follows: The
defaulter is indentified and his stock noted. Then the chief
of the location obtains from the local magistrate a warrant of
seizure. This, apparently, is sufficient legal authority; the
stock - usually one cow; more rarely a goat or two - is seized
and sold. The going price for an average cow at Ishiara market
in Evore location is between two and three hundred shillings.
Out of the sale the Government takes 48/- for GPT, 24/- for
penalty and about 30/- for fine and court costs. We were unable
to ascertain precisely how the remainder of the account is
applied with the defaulting farmer. Up to the 26th of March of
1971, some thirty GPT defaulters throughout the division had been
arrested, and other defaulters had thirteen cows and three goats
seized and sold. Loss of stock cannot be underestimated in
importance, one sub-chief noted that even during the critical food
shortage of February-March, 1971, people refused to sell or slaughter
their stock "until the very last moment". Seizure and sale must be
regarded as an extremely powerful example to encourage remaining
defaulters to pay. It is a rare measure as most officials say
they do not recall it being used previously, though one chief
members seizure being applied in his location in the mid-1960s.
6. GPT matters are, obviously, of vast import to the administrative officers in Mbere. The DO stated that he ranks a chief, first and foremost, on how he handles GPT collection. Some chiefs say the same for their ranking of their sub-chiefs. On the other side of the hierarchy the DO felt that one of the key tools used by the DC in his assessment of a DO's effectiveness was his ability to collect a good proportion of assessed GPT. Based on this information it might be easy to leap to conclusions and accept uncritically the hostile stereotype of the Provincial Administration as being mainly concerned with tax collection and the maintenance of law and order. Our Mbere information reveals that these are indeed major administrative concerns and it would be unwise to underestimate their central position in administrative activity. Nonetheless, these are hardly the only concerns. Moreover, as will emerge from the discussions of chiefs and sub-chiefs, the lower one goes down the administrative ladder, the more localized, tolerant and lenient the system becomes.

Law and order maintenance is important (see below, section IX on the divisional magistrate and Appendix C for statistics on crime) and it is clear that, to some extent, as in the old days, "a quiet division is a good division". But it must not be too quiet; there must be a modicum level of non-routine activity in the field of self-help for an area to hold a favourable rating from superiors. The Mbere DO rates as his second most important task "the gathering and reporting of information on the people". By this he means, what are the major and/or unusual difficulties in the area and how can these be aided? At the time of our first interview with the DO, for example, there was considerable

3. In contrast to this, a former DO who had served in a Division in Rift Valley Province stated that his DC placed the collection burden mainly on the chiefs, though of course ultimate responsibility for all divisional matters rested with the DO. The point is that this former officer felt that GPT matters were a relative routine and minor portion of his assignment, and while important were tasks primarily to be delegated to lower officials.
hunger in the division due to the drought conditions. The DO had spent a few days travelling about the division with chiefs, sub-
chiefs, and Community Development personnel, attempting to assess the extent and intensity of the people's hunger. At the time of our second interview, about one month later, considerable time was being taken up in discussions with the chiefs on how best to distribute food made available by the provincial authorities. In short, besides the collection and maintenance aspects of administration, there is a welfare orientation as well.

The DO's attitudes on the relative importance of various aspects of administrative work were partially revealed when asked what qualities make a good chief. The DO listed five features, given below in the order in which he mentioned them:

i) How does the chief collect his taxes?
ii) How does he give information?
iii) Does he cooperate and work well with officers from other departments?
iv) Is he keen on self-help projects?
v) Does he push primary schools and water projects for his location?

The DO feels that the DC probably looks for the same set of qualities in his DOs.

Given his superior transport situation the DO can normally get around the division quite easily, and he states that he tours just as frequently as he can free himself of office work. He does not make up an advance safari programme since, he states, he likes to "surprise his chiefs". He requires his subordinates to report their movements in advance. The DO reserves Fridays, for on this day he frequently visits Embu town and reports to the DC. He notes that he has frequent cause to go to Embu on other days of the week as well. Once a month, all the chiefs come to Siskago for a divisional meeting, where they report on events in their locations, both verbally and in writing.

This routine of travelling, supervising, reporting and taking part in an endless variety of meetings easily fills each day for the
DO. There is always some place to go, some one to see, a visitor or two (bothersome researchers among them), a letter to write, a report or a file to attend to. There is plenty to do.

7. The DO's time is mainly spent with other officials, and his dealings with the public are largely official. The major meetings of the DO and the public take place at Government barazas, held, said the DO, "to remind people of Government policies", and "to inform people about what Government wants". The DO said it was the duty of each chief to hold a locational baraza once a month, though, as will be seen, this schedule is not always kept. There have been an unusual number of barazas in Mbere in 1971, many of these due to the necessity of explaining to the people the impending adjudication of land. Land adjudication, of course, is another time consuming and delicate issue to which the DO must attend. Even with adjudication, however, division wide barazas appear to be rather rare events.

The DO has other duties of a symbolic nature, especially in connection with important visitors. Arranging a baraza for a Minister may take several days, and when the President visits Embu (which is also the Provincial Headquarters) the Mbere DO can expect to spend the best part of a week helping with preparations and ceremonies at Embu. Tree-planting days, farewell parties to senior officials, national holidays all make demands on the DO in his symbolic capacity.

In addition, administrative officers have special duties when there is any crisis in their areas. At the time of writing, for example, parts of Mbere are experiencing a severe food shortage which necessitates tours, visits, reports and checks on maize distribution by the DO and the chiefs.

In sum, the Mbere DO is an experienced officer possessing a strong belief in the efficacy of administrative exhortation and control. He exudes a confident conviction that Government, and especially the Provincial Administration, have but to select, state and explain a policy and the people will automatically follow. This feeling is partly supported by the officers of other departments who admit that the people listen much more closely to statements coming from Provincial Administration officers than from representatives of any other agency. People know who is the boss.

There are at present 214 officers of DO rank in Kenya, they have a salary range of £810 to £1158 per year.

1. Chiefs

In the area of Mbere under discussion there are four chiefs. Though chiefs are but one step down the administrative ladder from the DO, the differences in the two offices are vast and significant. The DO is hired by the Public Service Commission, can expect eventual and substantial further training at Government institutes, starts at £810 a year, and can be - and often is - transferred to any division in Kenya. With increasing frequency, incoming young DOs now possess at least a first degree from a University, many have two degrees and we have been told that there are three DOs in the service who possess Ph.D. degrees. (Irrespective of educational qualifications, all DOs new to the public service start at £810 per year). DOs, in other words, are part of the national civil service, and their view, in the main, is upward and outward.

Chiefs, on the other hand, look inward to their locations. They must come from the location in which they are to serve, meaning obviously, that they can never be transferred to some other area. Former, it is a virtual certainty that they will never rise higher in the service. Pay for chiefs can start as low as £264 a year, the point of entry in the pay scale depends on qualifications and experience. For example, in Mbere many chiefs and sub-chiefs had
formerly been teachers, earning a salary higher than the minimum for officials. In cases such as these, the appointed man can usually expect to receive a salary at least equivalent to what he had previously been making. One former Mbere chief began at £390 per year. Interestingly enough, it is possible, though not a frequent occurrence, for a very senior chief to earn more than a DO. Very senior and noteworthy men may be promoted to the rank of Chief - Grade I, a post having a salary scale ranging from £678 to £1188. Very few chiefs in the entire country are classed as Chief - Grade I, and it is highly probable that few of those so classed earn the top pay scale. Nonetheless, it is at least theoretically possible for a chief to earn £30 per year more than the highest paid DO.

Chief also differ in terms of qualifications, the main criteria being that they be able to speak, read and write English, a quality easily tested, and that they be progressive, a somewhat less tangible concept. Advertisements for chiefs and sub-chiefs usually contain some age limitation as well, 25 to 40 years being a common range.

The present Mbere chiefs were selected in one of two ways. Those who became chiefs between 1964 and 1968 went through a combined interview and electoral process; those who became chiefs, either before 1964 or after 1968 passed through an interview procedure only; there was no public participation in selection. Prior to independence the selection of chiefs was an administrative decision, with selection power residing mainly in the hands of the DC, though there was considerable local variance and in some areas, consultation with the public. Upon independence, it was decided to democratize the process somewhat. Throughout the country large numbers of chiefs who had been closely identified with the policies of the colonial regime were "persuaded" to resign and these vacant posts - two of them in Mbere division - were filled by the following method: The post was advertised and various candidates put themselves forward. (In Mbere one usually finds more than twenty people putting themselves up for vacant chief or sub-chief posts).
applicants for the position of chief were interviewed by a committee composed of the DC, the DO, the Member of Parliament for the locale, the member of the County Council (or members, as the case may be), and representatives of the party, KANU, may sit in as well. The task of this committee was to reduce the number of applicants to three, and to rank them first, second and third. During the period when elections were part of the process, the final three were submitted for public approval at a location-wide baraza. The three candidates were introduced to the people (and by all accounts there was usually excellent attendance at selection barazas) and then each man would stand in an open spot and those who wished to vote for him would line up behind him. By this simple and open method chiefs were selected, though the public choice had to be ratified by the central authorities in Nairobi.

The electoral portion of the chief's selection process was halted, probably due to the higher authorities' fear that the best qualified and most suitable candidates were not being chosen. At present, the procedure is to have the selection committee rank applicants one, two and three and recommend to Nairobi that number one be appointed. The first choice of the committee is usually confirmed, though one former chief knew of a case where the first choice had been overruled. It is said that the DC is very powerful in this process; this seems quite likely. Of the four Mbere chiefs, one has been in office since 1960 and was chosen by the pre-independence method, two were elected - in 1964 and 1968 respectively - and the fourth chief was selected by the committee interview process in 1970. (The chief that this last man replaced had been chosen by the electoral procedure in 1964).

The background of the Mbere chiefs are varied, but show some interesting similarities. One had been a policeman, prison warder, trader, KANU Chairman and county councillor before becoming a chief. One present chief and one former chief had been teachers, and they too had served on the Embu Council. This leads one to venture that local leaders of the type who would be elected or appointed to the county council are the very types who would put themselves forward, and be selected, as chief.
2. Chiefs are provided with minimal supplies and support to carry out their activity. They are given an office, usually composed of a quite small house divided into two small rooms; one of which contains a desk and a few chairs and a small safe for storing of collected GPT. The other room of the office, invariably, is the lock-up where persons arrested for a variety of offences from illegal beer-brewing, to fighting, wife-beating or default of GPT can be detained for up to twenty-four hours before being sent to appear before the divisional magistrate. The office section of the building is scarcely equipped in terms of clerical supplies, though one chief's office possessed a typewriter.

Chiefs are provided with one clerk to handle GPT records, correspondence, report writing, and file keeping. Senior clerks are influential, and relatively wealthy - one earns Shs.460/- p.m. A newly appointed chief probably has a delicate relationship with an old established clerk. Chiefs are given a small uniform allowance, but they are not provided with personal housing, nor are they given transport. However, if they should own a vehicle they can claim a certain amount of mileage for official business each month. A former Mbere chief was able to keep a vehicle running, but none of the present chiefs can afford to do so. One chief owns an old Land Rover, which is seldom in working order. The DO had indicated that when needed, the chiefs could depend on transport from his office, but chiefs felt they seldom had access to vehicles. Cooperation on transport matters is needlessly poor among the various Government departments and the introduction of a minimal amount of coordination would lead to significant improvements. This lack of transport for chiefs is a serious matter in locations of 635, 368, 411, and 226 square kilometers. Country bus services are not at all well developed in the division except along the Embu-Meru road; even the main Kitui-Embu route is infrequently served. The terrain is not exhaustingly

5. See David Brokensha, 'General Notes on Transport', Institute for Development Studies, University of Nairobi, December, 1970, for some specific suggestions on how to alleviate transport difficulties.
varied as in parts of Central Province, but still the division is not the easiest to walk or bicycle through. All this means that Mbere chiefs simply do not get around their locations as much or as often as they might.

Nor are the sub-chiefs able to visit the chief's camp as often as might be advisable. Most sub-chiefs try to get into locational headquarters at least once a week, usually on the main market day, but during the rainy seasons this may prove difficult or impossible. Even when the weather permits, the journey from location to sub-location may not be all that easy. Walks of from five to fifteen miles each way are necessary, and many unbridged streams make it difficult to use a bicycle. The major point is that getting around the location and communicating with the people is not a simple and easy matter, and those who criticize the lower level administrators for lack of productivity are normally unaware of the immensity and physical difficulty of the task.

3. The Mbere chiefs were divided in their assessment of their most important duties. Two stated rather emphatically that GPT matters were not their most important task; one of these stated that education matters were the critical issues of his location, while the second felt that "dealing with the problems and difficulties of the people" was his primary job. A third chief stated that the most important task depended on the circumstances of the moment, and while GPT was a running issue, he was also busy with land adjudication and "going around to see what the people are doing". Only a former chief, out of office since 1969, unequivocally stated that GPT collection had been his number one task. One of the chiefs who felt that the GPT issue was not all that important pointed out that the independent Kenyan Government was both more lenient, and, because it was an African government, much better able to extract tax money from the people. (It is interesting to note in this regard that in fiscal 1967/68 GPT accounted for only .05% of Kenya's total
ordinary revenue; this figure climbed to 1.8% in 1968/69; 3.6% in 1969/70 and was estimated to be 4.7% in 1970/71. The actual country-wide collection figures were: 410,000/- in 67/68; 1,400,000/- in 68/69; 2,2750,000/- in 69/70 and an estimated 4,200,000/- in 70/71).

The difficult nature of the chiefs' position became clearer as our interviews progressed. The chief is a critical man in the Kenya's administrative set-up. He is the local "broker" who acts to translate the demands and services of the national administrative mechanism into comprehensible local terms. The pressures on him from above and below are considerable, as the DO uses the chiefs to effect national policies while the local people expect the chief to mitigate the demands filtering down to them, and also expect him to secure, for the location, a reasonable number of projects, especially new or improved secondary schools, health centres, roads and water supplies. Chiefs admitted that they would find it difficult to concentrate on GPT collection to the extent desired by superiors, and while it was never unambiguously stated, it was implied that chiefs who followed slavishly the directives of superiors would be despised by the people. The conflict is hardly as acute as it was during the colonial period, when the chiefs were the interpreters of alien directives, but the frequently voiced assertion that all conflicts of this nature have been resolved by independence, is patently false. To many peasants in the rural areas, Government is Government, an extractor of resources and a giver of services, but still something very remote and mysterious. 6

Dealing with peace-keeping problems and encouraging "community effort" are other important tasks of the chiefs. Chiefs, much more so than the DO, are also the primary agents of dispute settlement (though aggrieved parties, of course,

frequently, pursue their case to the DO and they are the officials, to whom one must apply - and pay 10/- for a permit to brew beer. (A 10/- permit allows one to brew up to 12 gallons of beer). Chiefs, as was the case with the DO, are also involved in the demanding routine of report-writing, file-keeping, and the myriad administrative duties which are so time consuming. Much of the detailed work strikes the outside observer as not very productive, but keeping up reports and records is an essential process if the chief is to receive a good rating from the DO. A wise chief will see that his location meets the DO's information needs.

4. Chiefs, the DO said, should hold barazas once a month. Few of them meet this timetable and one chief openly doubted the wisdom of having a baraza when there is no specific announcement to convey. Most agreed that barazas should be held when there is a need, and not as a matter of course. The former Mbere Chief stated that attending barazas and meetings was, after GPT affairs, his most time consuming function. He listed the following gatherings which he attended:

a) public barazas at location and sub-location level:

b) sub-chiefs' meetings - once a month, at the very least;

c) location wide meeting of officials - once every two months;

d) DO's meeting with chiefs - quarterly (at that time);

e) DC's meeting - quarterly; plus

f) special meetings for politicians and visiting dignitaries; and board of Governors' meetings for secondary school in the location. At the time he was Chairman of the County Council and the ex-official chairman of all County Council committees. He stated, and it seems quite believable, that meetings were seemingly endless.

For more information on chief's barazas see N. Nyangira, "Chiefs' Barazas as Agents of Administrative and Political Penetration", Staff Paper No.80, Institute for Development Studies, University of Nairobi, July 1970.
Chiefs must settle disputes on a wide variety of issues. In Mbere, where the traditional fabric of society has been so deeply torn, chiefs and other modern officials are often the authorities to whom the people turn. Dowry collection, witchcraft problems, circumcision matters, or just plain seeking of advice—these types of requests and discussions take up a major portion of each chief's time. On top of all this the chief has to devote some time to reporting on his subordinates to the DO. The chiefs, who have a feeling of permanency and who regard the DO as a transient figure, said that the pattern of reports varied, some DOs wanted lengthy and detailed comments; others wanted sparse recommendations.

During our interviews few chiefs volunteered a great deal of information of self-help activities. (Sub-chiefs, as will be shown, had more to say on this matter). When questioned, it was generally agreed that self-help schemes were important, but most felt that the locus of self-help action was on the sub-location level. Chiefs give receipts, check on collection activities, and see to it that proper documents have been obtained from the DO. There are some few location-wide activities, but the most popular self-help action is in schools and dispensaries and water projects, and these are usually at sub-location level. As elsewhere in Kenya, there is difficulty in Mbere in staffing and equipping the self-help projects, once completed. One specifically Mbere problem is that though teachers can be found to staff newly completed primary schools, there is a great shortage of water which such schools can be supplied. Thus, buildings stand empty.

5. The chiefs, then, have a most difficult job. With only minimal logistical support, with formidable transport and communications difficulties, and saddled with a routine which takes up the bulk of every day, it is not at all surprising that they are not widely regarded as dynamic generators of economic and social development. Indeed, the truly surprising feature of Mbere chiefs is the extent to which, in the midst of a heavily constraining system, they actually do function, at least partly,
in a developmental sense. They do push self-help activities; they attempt to secure Government services for their locales; they do not - even though they are obviously far more wealthy than the average peasant - appear to act in a manner inconsistent with local norms. That their success in their non-routine tasks is marginal should not be a surprise, given the background of the chiefs, the difficult conflict position they are in, and the level of support given to chiefs by the system.

One of the Mbere chiefs suggested that the post of chief was sufficiently complex and important to warrant the use of more highly educated men. He thought a University-educated chief would not be over-qualified, though he recognized that pay scales would have to be altered drastically. This is not likely to occur in the near or indeed fairly distant future, and it appears that suggestions on how to improve the operational effectiveness of chiefs should concentrate on less grand notions. Improvement of transport, additional short-term training programmes, the rationalization of routine procedures - these are areas in which incremental alterations may be made. (For more specific suggestions see Appendix D).

C - Sub-Chiefs

Much of what we have said about chiefs also applies to sub-chiefs, so we shall more briefly summarise their duties, difficulties and position.

Sub-chiefs, like chiefs, were elected from 1964 to 1968, but are now generally appointed. Most of the 21 sub-chiefs in our area have at least completed primary education. Many have had a short (usually one week) training course at Embu either on appointment or as a refresher course. It is customary for sub-chiefs (except for the most isolated ones, in the rainy season) to attend weekly meetings at the Chiefs Camp. The practice varies according to the chief concerned, the state of the roads, the amount of rain and the urgency of matters to be discussed. One chief is quite punctilious in requiring weekly attendance from all his sub-chiefs; at
the height of the rainy season in April 1971, one of his sub-
chiefs swam across a flooded river in order to attend.

Sub-chiefs have been paid since about 1945; their
salaries start at about Shs.250/- p.m. They are encouraged
to retire at 50 years old, though some are older.

They are not provided with a house, but do receive a
uniform allowance (uniforms are worn only for formal occasions
such as D.O.'s barazas) and a bicycle allowance. They are
always from the sub-location they represent. As Appendix A
shows, the sub-locations vary greatly in population, area and
density, and in the extent of development. Yet even in one of the
most remote and most sparsely populated sub-locations, the sub-
chief said (on being asked what the major needs of his area were):
"Roads, water, dispensaries - any child would tell you that!"

Sub-chiefs are concerned, then, with:
a) Tax;
b) Law and order - reporting crimes, making
arrests, keeping the peace;
c) Organising self-help projects, especially for
schools, sometimes for roads. Most self-help
projects are in his sub-location, but a sub-
chief may be asked to participate in a location
wide project, such as a Harambee school, or even,
as happened recently, to organise a voluntary
contribution to a water project located outside
the division.
d) Miscellaneous - runaway children; organise
elections (usually supervised by the D.O.);
pass on applications for beer permits (to chief)
or trading premises (to area council); issue
burial certificates (a primary school head-
master is usually appointed as registrar of
births and deaths).

c) Land. In the last year impending land adjudication
has taken much time.

The frequency of visitors to a sub-chief depends on the
sub-locations relative accessibility, economic and political
importance. Some sub-locations may receive as few as twenty
official visitors in a year, others may receive a visitor...
Sub-chiefs are helped by unpaid njama, who are sufficiently important in the administrative system to merit some description. Njama were traditional village elders, acting as representatives of the ituura (village) in dealings with the outside world. During colonial rule njama were recognised, but not paid; they benefited from the meat and beer that their office brought. But with the falling away of the traditional oath, fewer goats are ritually killed and fewer gourds of beer presented. A contemporary munjama is said to enjoy his position because:

a) he has power;

b) he still receives minor gifts, such as a small quantity of beer;

c) he has a preferential position if any perquisites are available; and

d) his tax might be remitted.

His duties are to assist the sub-chief in every way, especially acting as a link between the village and the outside world. As one chief said, "njama provide a very useful network of informers". They report assaults, tax defaulters, sick cattle, deaths; they attend all barazas; they authorise circumcision rituals (which usually take place in August) and arbitrate in minor domestic disputes.

Though not an hereditary office, njama tend to come from the dominant clan in the village. A sub-chief can "tell the people to choose another man if their munjama is unsatisfactory".

Agriculture

The agricultural department is undoubtedly the most important as far as rural development is concerned. Perhaps we should add providing it has the support of the provincial administration.
Mbere division, for agricultural department purposes, includes the 21 sub-locations of our study, together with Mwea location, which is not only inaccessible (using up precious petrol on rare visits) but also adds another 500 square kilometers and 13,000 people.

The present AA0 (Assistant Agricultural Officer, in charge of the division) is a competent young man who graduated in 1959 from Egerton College (Form IV, division I or II, is required for entry to this three year course). His first posting, in early 1970, was to Mbere. Agricultural officers are moved less frequently than DOs, an average length of service being two years.

The AA0 prepares a monthly safari programme, but is often forced to alter it through being called to Embu (or occasionally Nairobi) for meetings or consultation with senior officials. He tries to visit each location once a month, at least, and to fit in visits to sub-locations as he can. He has a monthly meeting of his AAs, and a general staff meeting two or three times a year. Inevitably, he has relatively little direct contact with most JAAs, who are supervised by their location AA, who usually arranges both a weekly meeting at location headquarters, and periodic visits to the field. The AA0 said he judges effectiveness of JAAs by the following measurable criteria: number of cotton and banana plots measured and marked; rate of recovery of cotton loans, and the opening up of new agricultural land. Such data would appear in each JAA's monthly report; report writing is regarded as very important at all levels of the agricultural department, from the newest JAA to the Director, and appears to occupy an inordinate amount of time. Most people who have had any close knowledge of agricultural reports regard the data warily, as so much is of necessity based on crude estimates. Nevertheless, the writing of reports continues to take up much time and energy.

Under the AA0 is a staff of 52 including 12 veterinary staff. Apart from the AA0, there are two major main ranks, the AAs (Agricultural Assistants) and 37 JAAs (Junior Agricultural Assistants). AAs include three divisional staff (one generally...
animal husbandry and one cotton) four locational AAs and eight ordinary AAs. This rank includes a few who joined the agricultural department recently, after completing Form IV plus an intensive two year course at Embu Institute of Agriculture, or Ahiti for the veterinary staff. Pay for such graduates is £306 p.a. if they had a general pass in the East African Certificate of Education, or £342 with a pass in one of the three divisions. The AAO's scale starts at £108 p.a.; such are the advantages of a slightly better examination pass plus admission to a three year rather than a two year course. It is extremely difficult to rectify the initial disadvantage - and this applies to most entry points in the civil service - no matter how much initiative and competence are shown. If the recommendations of the Ndegwa Commission report (discussed below) are accepted, this may change.

AAAs include some who lack the formal education and training of their colleagues, but who have risen from the ranks of JAAs - a feat that today would be virtually impossible. These include some officials who are conscientious and talented, others who are neither.

JAAs are now required to have a minimum of C.P.E (Certificate of Primary Education) awarded at successful completion of seven years of primary schooling), though again some of the "old - timers" lack much formal education. Attempts to improve the calibre of JAAs by recruiting young men with secondary education have failed: although salary scales exist for these, the funds are seldom available in practice. Salary scales for JAAs (who are stationed at sub-locations) start at Shs.130/- p.m. without C.P.E., Shs.185/- with C.P.E. (The Ndegwa Commission recommends a minimum of Shs.200/- p.m. for all civil servants, to be effective July 1971). JAAs are mainly generalists, but include twelve veterinary staff and four women trained in home economics. All sub-locations except Naranyuki, Tharaka and Thambu, both in Evuore) have provided horticultural sorts for the resident JAAs.
Ancillary Agricultural staff

In addition to the authorised establishment, several other people are engaged in agricultural extension in Mbere. These include:

i) The supervisor and four instructors employed by the British American Tobacco Company at Ena and Kanyumabora; they actively advise farmers, and help the struggling co-operative society to distribute fertiliser, and equipment needed for tobacco barns. They also buy the leaf, flue cured at Ena and barley (sun dried) at Kanyumabora.

ii) The eleven cotton instructors employed by the Cotton Lint and Seed Marketing Board,

iii) Karurumo Trades Institute, a recently opened village polytechnic, has an AA seconded to it for supervising the popular agricultural courses. Although located just outside Mbere borders, this Salvation Army run institute is intended to serve both Mbere and Embu Division; already a small group of school-leavers at Gangara (Nthawa) has been trained in bee-keeping, and given modern beehives.

iv) The SRDP provides for additional agricultural staff, four of whom have already been posted to the division. Extra proposed SRDP staff include

5 at about AAO level;
7 at AA
13 at JA

plus eight clerks, drivers, mechanics, and a laboratory assistant, making a grand total of thirty-three or an increase of two thirds in the agricultural staff. It is not considered necessary to deal separately and in detail with these staff, as they share the same conditions of service and disadvantages as their colleagues.
v) Although not resident in Mbere division, some
outside officials are influential, notably, of
course, the DAO (District Agricultural Officer)
who visits infrequently, but who is responsible
for recruiting JAAs, for financial control and,
under the PDA (Provincial Director of Agriculture)
for general policy. Inevitably he concentrates
rather more on Embu division, which has 56% of the
population and 16% of the area, but which is much
richer and agriculturally more attractive, with
its tea, coffee and grade cattle in neat if over-
crowded demarcated plots. Also at Embu is a
Norwegian agronomist, attached to the Provincial
Planning Officer, who is concerned with details of
cotton and other agricultural development; another
Norwegian specialist visits from Kitui district to
supervise cotton trials. The district and provincial
range and livestock officers occasionally visit, and
are available for advice. (And, since Mbere was
chosen as an SRDP area, the University of Nairobi
has sent a steady stream of researchers, many
specifically interested in one or another aspect
of agriculture). So there is a small cadre of
technical experts who are involved in Mbere
agriculture.

Duties

There is no one manual that sets out clearly the goals of
the agricultural department, but rather a series of directives
which are issued sporadically by the Provincial Director of Agri-
culture. We summarise the main duties of the divisional staff
under three headings - technical, administrative (agricultural)
and other.

1) Technical duties vary from year to year, like fashions.

At the time of writing, most emphasis is placed on cotton,
which means that the staff spends more time on promoting cotton
production than on any other activity. Appendix B gives details of previous fashions in agricultural emphasis at Mbere.

Technical duties include:

Advising individual farmers on such details as methods and time of clearing, application of fertiliser and/or insecticide, marking and measuring plots; attending and speaking at barazas.

Demonstrating new methods, or potential yields, in fields of farmers who have been specially selected for this purpose.

Persuading farmers to grow more of one (or more) particular crop such as cotton. Ancillary activities include advice, exhortation and demonstration on all activities connected with growing cotton, selecting the field, measuring, clearing, stumping, ploughing, planting, thinning, weeding, applying fertiliser, applying insecticide, harvesting, grading, bagging, selling, and finally, removing old stalks. In addition, agricultural staff spend much time on the collection of cotton loans, as discussed below.

Helping the 4 K Clubs. These are quite active, but function almost entirely among primary schools. The secondary schools have Young Farmers Clubs, receiving some attention from the agricultural staff.

Enrolling farmers for courses at Embu Farmers Training Centre: few courses are aimed at Mbere specifically, and few farmers attend.

(As these notes are meant to be illustrative rather than comprehensive, we omit consideration of veterinary duties).

b) Administrative duties of agricultural staff include cotton loans, cotton markets and co-operation with other departments, to raise three important areas. Let us examine each in some detail.

1) Cotton loans have been given to Mbere farmers each year for the past several years. The details vary; in 1968...
In 1970, for example, loans were available to 295 farmers for ploughing and to 523 for insecticide. (Figures include farmers on cotton blocks). In 1970-71, 140 farmers have obtained insecticide, valued at 71/- per carton, (enough for one acre) and will have to repay 78/- (including 10% interest). The agricultural staff have already spent, and will in the next few months continue to spend, what might be considered a disproportionate amount of time on cotton loans, especially as the loan acreage represents only about 5% of the total cotton acreage in the division. The staff do the following: select farmers, by recommending those who have had no previous loans (or who have repaid past loans) and who are "good farmers", with adequate labour supply; help recipients to buy or borrow pumps for spraying insecticide; this may involve staff in physically repairing and transporting pumps from divisional headquarters to location office, recover loans at the end of the season, a highly unpopular and difficult task.

One wonders whether the whole business of loans should be handled by another agency or agencies, and indeed the Mhere SRDP envisages an ingenious system of loans to approved traders, who will then give credit to approved farmers, (this may of course, raise other difficulties). Under this scheme the agricultural staff will be required to complete forms for all applicants for loans, based on the supposedly intimate and accurate knowledge that JAAs have of their local farmers.

Cotton markets begin in late August, and continue until October. Last year the buyers (Kitui Gineries) in consultation with the DAO arranged for a series of markets, so that buying points were set up at major collecting centres, with two or three return visits being made at later dates. During this buying period, many of the agricultural staff (especially in Mavuria,
the main cotton growing location) spend much of their
time out informing farmers of the date and place of the
markets;
seeing that enough bags are available for the cotton;
advising on grading the cotton - this is very important,
as grade I sells for shs. 1/05 per kg., grade II for
50 cts/kg., the latter price hardly paying for expenses;
telling farmers when the cotton buying schedule is altered
as frequently happens, due either to faulty planning or
unforeseen mishaps such as the arrest of a driver;
arranging to collect cotton themselves from isolated
places such as Kerie (Nthawa location) as the cotton buyer
refused to jeopardise their lorries over the appallingly bad
roads; in this event, the agricultural Land Rover ran a
shuttle service until it broke down; helping the cotton
buyers to organise the market; waylaying farmers after they
have received payment to try to recover the loans: as there is
competition from other officials collecting tax, or
"voluntary" contributions to harambee projects, this activity
is resented by the recipient;
keeping the AA, AAO and DAO informed of progress of
markets, and keeping a record of sales made.

iii) Co-operation with other departments involves, particularly,
the Administration, for the DO often has control over, or at
least prior knowledge of any special expenditure in develop-
ment projects. It also involves the enforcement of rules
designed to ensure good agricultural practices, including
those relating to;
cultivation on steep slopes;
control of burning;
protection of streams and natural water resources;
prevention of soil erosion;
prevention of infestation and disease (e.g. by
uprooting all cotton stalks after harvest.)
A cursory walk, or even a drive, through almost any part of
the division shows that these rules are not being enforced. The
reasons are complex, and include:

The fact that under the colonial regime, rules were most
unpopular, for they were rigidly and at times arbitrarily or
enforced, hence any attempt to enforce them results in the la
of the officer as "colonialist";

a general ignorance on the part of many farmers of the necessity
for the rules;

a lack of conviction of the urgency for conservation among JAAs;

refusal, or disinclination, of chiefs or sub-chiefs to prosecute;

the need for the JAA to maintain harmonious relationships in what
very often his home area.

Other duties that regularly take up the time of the agricultural
staff include:

- planning a safari programme;
- attending meetings (e.g. a location leaders' meeting);
- collecting pay (some staff have their salaries paid into
  bank accounts; others collect it themselves at divisional
  or locational headquarters);
- writing reports - a one page fortnightly report may take
  one working day to compose and write;
- attending (less frequently) training courses.

How are the agricultural staff viewed by their clientele? We do
have some sketchy impressions. In December, 1970, thirty five Siakago
High School students, were asked about official visits to their homes
and fathers' fields; they reported as follows:

<table>
<thead>
<tr>
<th>Homes or Fields visited in previous 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 visit</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Cultural staff</td>
</tr>
<tr>
<td>Unity Development assistants</td>
</tr>
<tr>
<td>Youth assistants</td>
</tr>
</tbody>
</table>

While only a rough indicator, this suggests that agricultural staff,
more active than other officials, were unable to meet all their
clients. In any event this would be physically impossible, with a ratio
of one JAA to 500 adult males. The number of adult males (only about
one third of whom would be active farmers) varies from 228 in Gachuriri
(Taita) to 852 in Nguthi (Eburu). The area of these two sub-locations is
76 and 56 square kms., respectively, and density 13 and 74 persons/sq.km. Clearly the JAA at Nguchi has an easier time contacting his clientele, even though they number nearly four times as many, than does his counterpart in Gachururi. The table suggests that some men ("good farmers", probably) received more than their share of visits.

Some Problems

Here we catalogue some of the major problems facing the agricultural staff in their efforts to raise productivity in Mbere; we do this not in a critical sense, but to underline the formidable nature of the task. We emphasise that we have generally been favourably impressed by the calibre of staff at all levels in the division, by their good humour, resourcefulness and conscientiousness. We classify the difficulties into four headings:

a) Physical Factors:

Mbere division, although it contains some parts (especially in the north-west) that are well-favoured, has a relatively poor endowment in that the soils are variable and the rainfall uncertain. While classed as marginal presently, the land which has a rainfall above the mean might, at a later date when improved technology could help husband water resources, be much more productive. However, the given situation for the agricultural staff is that light soils, rocky areas, animal and insect pests, droughts, or less frequently, floods are severe handicaps for their work.

b) Infrastructure:

Communications are poor, some roads being passable only for Land Rovers: bridges and culverts are inadequate, lack of telephone contact with Embu is another problem; trading centres and markets are rudimentary, so that it is difficult, for example to find stockists for fertiliser, insecticide, pesticide or simple equipment. It is also often impossible to persuade outside buyers to attend the remote and poorly attended markets - an active farmer at Kiambere, say, or Kerie, might have difficulty in selling his green-grains.

Co-operative societies are also weak and unstable. The SRDP proposed that one central farmers' co-operative should
The whole division, but this seems unlikely to happen, i.e., to internal conflicts and inefficiency. Credit facilities are virtually non-existent.

Social aspects:

It has been common, from early colonial times up to the present, for officials (usually those at district or provincial level) to describe the Mbere as conservative, ignorant, and held back by backward elders. While we are sceptical of the validity of such stereotypes, Mbere farmers, especially in the poorer, drier, areas, are reluctant to adopt innovations; this is hardly surprising in view of their slender margin, and of the numerous innovations that have failed (see appendix B), yet, cultivation of bananas, introduced only five years ago, has spread rapidly and successfully.

Tobacco has also caught on quite well, although few farmers follow the exacting rules to ensure maximum yields.

Local farmers have a highly complicated and accurate perception of their environment; their perceptions are, however, usually disregarded by planners (Bernard W. Riley, currently studying these perceptions, will shortly produce a detailed report).

Women, who play a dominant part in food-crops, especially in the planting, care of, harvesting, threshing, grinding and preparation of millet, are officially ignored by the male extension agents. The few female home economics staff are not concerned with agriculture.

Clans, which had been losing their power, have been given a new lease of life by the land adjudication process currently proceeding. Land disputes are very distracting, absorbing much time and money of many of the "good farmers." (See David Brokensha, cit.)

Administrative organisation

Finally, all the above problems are compounded by an old and often ineffective bureaucratic system.

1) Selection and training of staff raises immediate problems.

Although it is the declared aim of government to upgrade
JAAs, and although there is provision for Form IV graduates to be employed, it appears impossible actually to recruit better educated staff as financial provision is inadequate. Training courses for low level staff are of little value, when there is insufficient formal education.

(i) **Staff housing** is, for agriculture, like most other departments, a perennial problem. Not one officer has, at the time of writing, a good house with a regular water supply. JAA's housing depends on the whim and energy of the sub-chief, and on his relations with the chief, who might supply him with EMPE (extramural prison labour) to construct a simple house. Some junior staff do not even live in their sub-location, which makes their efficiency dubious, for it is unlikely that they cycle or walk five to ten miles every day, from the more comfortable location headquarters where they stay. Housing is a critical problem for the additional agricultural staff (four of whom have already been posted to Siakago with no housing provided) required for SRDP. When housing is provided, rent is deducted according to the government scale, which is related to salary: an AA at Ishiara (Evurore), for example, pays shs. 26/- p.m.

(ii) **Transport** is another critical problem. The AAO has at his disposal a short wheelbase Land Rover which is often under repair, and for which he receives forty-four gallons of petrol per month. Towards the end of the financial year, he may get even less. This allows him to drive about 500 miles, which he has usually done by the middle of the month.

AAs are eligible for a motor cycle advance if they have a valid driving licence (which is difficult to obtain) and if they have completed their probationary period: at present none has a motor cycle.

JAAs can get advances to buy bicycles, and receive a flat rate of shs. 10/- allowance monthly: nearly all have bicycles.
Other bureaucratic problems, that can be briefly mentioned, include:

- Lack of incentives for consistently hard and imaginative work, which is seldom seen to be rewarded due to the painfully difficult process of promotion from one rank to another;
- Cumbersome financial control: the AAO cannot even reimburse trifling sums of a few shillings spent by his junior staff in authorised travelling;
- Important information (contained in letters and circulars from ministries) not reaching divisional level, but being "filed" elsewhere;
- Over-emphasis on one crop (cotton, now) and neglect of other cash and food-crops;
- A high proportion of time spent wastefully on preparing for the annual Embu and Nairobi shows. The rewards for such activity - in terms of encouragement to farmers or diffusion of new ideas or techniques - are negligible.

Because it would be irresponsible merely to list all the difficulties facing this one important department, we include as appendix D a series of recommendations for actions.

**HEALTH**

The divisional health assistant (who is incidentally, the only local Mbari man to hold a divisional post) has a staff of four locational health assistants (salary £360 to £390 per year) who are posted at the locations. In addition nine ungraded health assistants (salary shs. 225/- p.m.) are in the sub-locations. Their duties include:

a) Checking to see that each homestead has a latrine. Where there is no latrine, the head of household is warned, and may be charged before courts if he refuses to comply with the order. In 1970, twenty-two persons were charged and sentenced, usually to a fine of shs. 30/- or one month's imprisonment. The health staff only prosecutes when people refuse to heed warnings.
b) inspecting meat, especially cattle (mainly oxen) which have been slaughtered for sale, and goats used in the kaurugo oath. (The Mbeti chief does not allow the oath.)

c) health education and general public health, including checking water supplies, (and advising on protection) wells and streams, following up infectious diseases, explaining basic health rules (boiling water, covering food, proper diet) and inspecting for vermin - rats and mosquitoes. Householders are addressed individually and talks are also given at barazas, or to groups of school children. Health staff admit that while people listen and agree to follow their advice, little action is taken.

d) checking on markets for cleanliness, pegging plots at trading centres and seeing plans are followed; checking ventilation of schools and other public buildings.

e) investigating cause of death and advising on digging a grave 6' x 3' x 6' deep.

Although considerable progress has been made in health education since the 1930s, there is no uniform grasp of basic principles of public health. This was indicated early in 1971, when the health department mounted a campaign against cholera: the response to requests to people to be inoculated was extra-ordinary, over 7,000 receiving inoculations in one day in Mavuria location alone. But little if any notice was taken of the other advice - to boil water and to maintain a general cleanliness without which the inoculations are unlikely to be very effective. That such advice is not followed indicates the shortage of water and relative poverty, of course, as well as the ignorance of public health.

Medical facilities include a fully staffed health centre at Siakago, in the charge of a medical assistant, who has a staff of two enrolled assistant nurses, one enrolled assistant midwife, one enrolled health assistant visitor, three ungraded nurses, a home visitor, a tuberculosis visitor, and an ambulance (long wheel base Land Rover) driver. Average monthly attendance is just under 6,000 - 68,195 for 1970; there were 195 health centre deliveries in 1970, though antenatal attendance was 3475.

Each dispensary (at Kiritiri, Ruika and Kiambere) is in the charge of a dresser. Health centres are planned at Ngandure, Kiambere and...
Once again, most medical staff is
a) from outside the division, and
b) experiences difficulty with housing

EDUCATION

Primary education

An Assistant Education Officer, who is stationed at Slakago, inspects the thirty-six primary schools in Mbere division. Twenty of these schools are operated by the Anglican Church, fourteen by the Catholics, and one each by the Salvation Army and by the Council. For 1970 (1971 figures were not yet available):

i) proportion of boys to girls was 100:60 (4084:2467) although the proportion varied greatly between individual schools. Overall, in Standard VII, there were 100 boys to 40 girls, with one school having 100:105 (Kanyuambera, Evurore) and another 100:14 (Iriamurai, Mavuria).

ii) Twenty-four schools were full primary, with seven standards

iii) Total enrolment varied from 31 in three standards (Gachuriri, Mbeti) to 405 in eleven standards i.e. several were double stream. (Kanyuambora, Mbeti).

iv) Total teaching staff was 223, divided as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number</th>
<th>Salary scale per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>8</td>
<td>Shs. 700 - 1490</td>
</tr>
<tr>
<td>P2</td>
<td>45</td>
<td>Shs. 460 - 800</td>
</tr>
<tr>
<td>P3</td>
<td>124</td>
<td>Shs. 370 - 600</td>
</tr>
<tr>
<td>P4</td>
<td>7</td>
<td>Shs. 225 - 385</td>
</tr>
<tr>
<td>EACE</td>
<td>7</td>
<td>Shs. 420</td>
</tr>
<tr>
<td>CPE (Untrained)</td>
<td>32</td>
<td>Shs. 172</td>
</tr>
</tbody>
</table>

v) While the exact number is not known, at least half the teachers are from Mbere.

Teachers housing is often quite crude, dependent as they usually are on local self-help committees, the teachers' accommodation varies considerably.
5) Secondary education.

Mbere has four secondary schools, details of which are presented here.

<table>
<thead>
<tr>
<th>School</th>
<th>Top Form</th>
<th>No. Students</th>
<th>No. Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siakago High (Govt.)</td>
<td>IV</td>
<td>480</td>
<td>20</td>
</tr>
<tr>
<td>Kanyuambora (Harambee)</td>
<td>III</td>
<td>120</td>
<td>5</td>
</tr>
<tr>
<td>Nyangwa Secondary (Harambee)</td>
<td>III</td>
<td>75</td>
<td>4</td>
</tr>
<tr>
<td>Siakago Girls (Harambee)</td>
<td>II</td>
<td>72</td>
<td>3</td>
</tr>
</tbody>
</table>

By no means all the students are from Mberer - at Siakago High, only one quarter are Mberer, and others also have a majority of both students and teachers who come from outside the division.

COMMUNITY DEVELOPMENT

The divisional CDA (Community Development Assistant,) is paid by the government in a range of shs. 400 - 600 p.m. She is helped by four locational CDAs, recently upgraded by the County Council to a salary range of shs. 250 - 400 p.m.

According to the annual report for 1970, that year saw the completion of 52 completed self-help projects mostly class-rooms or teachers houses.

The staff, given usual limitations of transport, are active in self-help groups, women's work, sports, youth work and social work.

MAGISTRATE

The divisional magistrate lives at Runyenje's, the administrative centre of Embu division. He usually holds court at Siakago, in a recently refurbished court house, on Fridays and Saturdays. Details of convictions are given in Appendix C: here we need make only a brief summary.

Taking the fifteen month period 1 January, 1970 to 31 March, 1970, failure to pay tax was the most common charge, resulting in 51% of convictions. The usual sentence is shs. 30/- fine or 1 month imprisonment: most are imprisoned, on "EMPE" which means working on public works and staying at home. "Drunk and disorderly in a public place" was the next biggest category (23%) and 12% were accounted for by "rer--
Sporadic tax raids are organised - in one day (9 February, 1971) 54 men were convicted of tax offences.

Most sentences include the option of a fine. Most of those charged with assault pay the fines rather than be imprisoned, but only about 5% of tax offenders can pay their fines; about half of those charged with drunkenness pay fines.

In only about 10% of the cases was the charge withdrawn, or the accused acquitted, suggesting that the facts are usually quite clear.

Justice is administered quite promptly. Usually cases are heard within a week of arrest, there are few delays or remands, and it is rare for the magistrate to have more than a few - three or four - cases pending at the end of any quarter.

Civil cases are also heard at the magistrates court. 78 cases, brought to court in the first four months of 1970, can be classified thus:

<table>
<thead>
<tr>
<th>Class</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marriage</td>
<td>29</td>
</tr>
<tr>
<td>Bridewealth</td>
<td>11</td>
</tr>
<tr>
<td>Divorce</td>
<td>6</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>10</td>
</tr>
<tr>
<td>(usually 20 goats awarded)</td>
<td></td>
</tr>
<tr>
<td>Adultery</td>
<td>2</td>
</tr>
<tr>
<td>(usually 1 ewe, 5 rams awarded)</td>
<td></td>
</tr>
<tr>
<td>Debt</td>
<td>21</td>
</tr>
<tr>
<td>Land (boundaries)</td>
<td>19</td>
</tr>
<tr>
<td>Compensation</td>
<td>6</td>
</tr>
<tr>
<td>Defamation</td>
<td>3</td>
</tr>
</tbody>
</table>

**Area Council**

The Mbere Area Council consists of ten members, elected in August 1968 for three-year periods. The chairman receives a monthly allowance of shs. 200/-, with shs. 100/- for vice-chairman and shs. 35/- for others, providing there is an attendance of at least 7 members for that month's meeting(s). The district officer is an officio member, and the Embu County Council has a representative.
The three committees of the Area Council are trade and markets, finance and general purpose, and public health and social services, of which the first is the most active.

Council staff number eleven - one clerk, one typist, three market clerks, one pump operator and five locational community development assistants. The latter, who must have passed C.P.E. used to receive shs. 120/- monthly; despite the low wage, 15 candidates applied for the last vacancy. (This wage was increased, in May 1971, to a minimum of shs. 250/- p.m.)

The council has an office in the Social Hall at Siakago, which it operates, making no charge for public meetings.

The annual budget is about shs. 40,000/-, most of which goes on salaries.

**Other Government Departments.**

Several other departments have some sort of connection with Mbere division, either by having a resident work force (like MOW) or a few offices (forestry) or by periodic visits from Embu, combined with Mbere clients visiting Embu district or provincial offices for special purposes. We glance briefly at some.

<table>
<thead>
<tr>
<th>Department</th>
<th>Main functions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>application of Land Adjudication Act</td>
<td>will continue at least to 1974</td>
</tr>
<tr>
<td>M.O.W.</td>
<td>maintain roads, bridges and construct buildings</td>
<td>employs few Mbere</td>
</tr>
<tr>
<td>Game</td>
<td>enforce game laws; protect farmers; try to establish Kindaruma Game Reserve</td>
<td>important in lower areas</td>
</tr>
<tr>
<td>Forestry</td>
<td>supervise Kiangombe forest reserve</td>
<td></td>
</tr>
<tr>
<td>Co-operatives</td>
<td>supervise local societies.</td>
<td>seldom visit Mbere</td>
</tr>
<tr>
<td>Police</td>
<td>law and order; traffic, licences</td>
<td>insufficient staff to be effective</td>
</tr>
<tr>
<td>Labour</td>
<td>enforce labour regulations</td>
<td></td>
</tr>
<tr>
<td>Trade and industry:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probation:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
We have now presented in preliminary form, a fairly comprehensive picture of Government activity in Mheme Division. The question is, what are the goals of this process of administration and are they being achieved? The Government intent at least as stated in the Five Year Plan of 1970-1974, is quite clear:

... more impetus to the development process will be obtained by accelerating the shift of emphasis in the work of the provincial administration towards development administration in which the principal objective will be to achieve rapid development to raise the people's welfare. The traditional colonial emphasis on the maintenance of law and order and the collection of taxes will be changed to give additional emphasis to the administration of development. The administrative machinery must be development minded and adequately informed about the country's development problems in order to seek solutions to these problems at the local level.8

This statement never defines the term "development", nor does it give concrete examples of any necessary or desired changes. It is, therefore, altogether too vague to serve as anything more than a most general statement of Government's goals in the matter. However, the recently released Ndegwa Commission Report on the structure on the Public Service contains numerous and considerably more detailed suggestions concerning how administration on the District level and below can be altered and made more dynamic and change-oriented. For specific example, the report recognizes that: "The basic problem is developing horizontal working relationships within a vertically structured organization,"10

2. See especially Chapter XII, 'Field Administration for Development,' in Report of the Commission of Inquiry (Public Service Structure and Emuneration Commission) (Nairobi: Government Printer, May, 1971), pp. 110-121. Note also that this report revises upwards all the figures we have mentioned.
3. Ibid., p. 110.
the various government departments and agencies at all levels. It goes on to suggest that political authority and development planning in the Districts should be tightly unified; that the District, and not some higher or larger unit, be used as the focus of rural development efforts, that new specialist officers called District Development Officers and District Planning Officers be recruited, trained and sent to all Districts, and that the powerful Provincial Administration devolve some of its duties to other ministries.11

The overall intent of these suggestions is to increase coordination of Government activity in the rural areas and to emphasize non-routine matters and procedures. Other related recommendations in the report include returning to the County Councils the responsibility for the assessment and collection of GPT (a responsibility they gained at independence and lost in 1969), and strengthening generally the local government structure, now so much overshadowed by the Provincial Administration.

The problem with the report’s recommendations is that they are just recommendations, at the moment no one can say how many of the suggestions will be implemented, or to what degree. This being the case, it is not presently possible to take the Ndegwa Report’s conclusions as representing the explicit goals of the Kenyan regime. They may become so, but those familiar with the Kenyan administrative system might well doubt that all reforms and recommendations will be enacted.

The reasons for this doubt are complex and necessitate a brief diversion so that they may be explained. At independence, many powers of the old colonial administration were devolved to regional or local authorities. This decentralization tendency was partly a result of a desire to democratize certain features of the political system, but it was also closely associated with the majimbo, or regionalism constitution, which was a basically federal system devised by a coalition of colonials and those Kenyan people who feared domination by a Kikuyu-Luo ruling group. During 1964, the independent KANU Government of Jomo Kenyatta, working closely with administrators (the bulk of whom disapproved of majimbo), effectively reversed the regionalist trend, arguing that a tightly

11. Ibid. p. 114.
...realized system was necessary for unity, stability, and development. In December of 1964, one year after independence, Kenya became a centralized republic and many features of the majimbo constitution were scrapped. Since that time the central civil service, and the Provincial Administration in particular, has grown in importance and power. Conflicts between the civil service and local or political authorities have usually been resolved in favour of the administrators. This trend has been supported, perhaps even initiated, by the President himself.

What this implies is that those features of the Ndegwa Commission report calling for devolution or sharing of powers of the Provincial Administration may meet with much resistance from officials who do not care to share their prerogative. Moreover, they may be able to justify their opposition to reforms by tainting the recommendations with the name of majimbo, a thoroughly discredited concept. None of this may happen, but such possibilities cannot be dismissed. In the circumstances it is simply too early to determine how much of the lengthy report will be adopted, adapted, or simply left to gather dust. And until these or similar changes are made it is fair to characterize the general tenor of administration in Mbere as near neutral in developmental matters. (This assumes that a "developmental" orientation entails at a basic minimum, a heavy emphasis on non-routine procedures.)

Given this state of affairs, how is one to account for the major emphases and problems which are apparent in government activity in Mbere? What prevents the public service from taking on a more dynamic, change-oriented aspect? It seems that a number of factors are involved:

1. the colonial legacy;
2. the increased "verticalness" of bureaucratic structures since independence, partly in reaction to majimbo;
3. the closely related need (or choice) in the early days of independence to concentrate the state's resources on unity and stability matters, and
4. the emphasis on personal initiative and the market mechanism in the economic arena, resulting in a less economically interventionist government approach than exists in some other independent African countries, and
finally;

v. the lack of an effective extra-bureaucratic mechanism or political party which could serve as a watchdog and initiator of administrative policy and goals.

All these features, an examination of which would constitute a separate study, combine and together account for the failure of the administration to have changed drastically the outlook it inherited in 1963, and solidified in 1964. Broad theorizing aside, there exist a number of minor changes which would, if adopted, enhance the effectiveness of administration in Mbere. These are summarized in Appendix D. For the longer run, the most practical hope for change lies in the recommendations of the Ndegwa Commission report.

### Mbere Sub-locations

<table>
<thead>
<tr>
<th>Sub-location</th>
<th>Population</th>
<th>Sq. kms</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mbiru</td>
<td>1609</td>
<td>52</td>
<td>69</td>
</tr>
<tr>
<td>Kirima</td>
<td>2433</td>
<td>70</td>
<td>49</td>
</tr>
<tr>
<td>Mambilre</td>
<td>2688</td>
<td>149</td>
<td>18</td>
</tr>
<tr>
<td>Mavucia</td>
<td>2722</td>
<td>92</td>
<td>30</td>
</tr>
<tr>
<td>Gilibone</td>
<td>1851</td>
<td>97</td>
<td>19</td>
</tr>
<tr>
<td>Kithurthingi</td>
<td>2655</td>
<td>43</td>
<td>62</td>
</tr>
<tr>
<td>Kina</td>
<td>783</td>
<td>133</td>
<td>6</td>
</tr>
<tr>
<td>Pianiti</td>
<td>9055</td>
<td>60</td>
<td>34</td>
</tr>
<tr>
<td>Giribore</td>
<td>1982</td>
<td>49</td>
<td>40</td>
</tr>
<tr>
<td>Siskago</td>
<td>2673</td>
<td>21</td>
<td>125</td>
</tr>
<tr>
<td>Gangara</td>
<td>2606</td>
<td>92</td>
<td>28</td>
</tr>
<tr>
<td>Kerie</td>
<td>1891</td>
<td>146</td>
<td>13</td>
</tr>
<tr>
<td>Evurore</td>
<td>3331</td>
<td>54</td>
<td>61</td>
</tr>
<tr>
<td>Nguthi</td>
<td>4117</td>
<td>56</td>
<td>74</td>
</tr>
<tr>
<td>Kamarundi</td>
<td>2001</td>
<td>76</td>
<td>26</td>
</tr>
<tr>
<td>Thembo</td>
<td>2045</td>
<td>68</td>
<td>30</td>
</tr>
<tr>
<td>Katheka</td>
<td>2606</td>
<td>72</td>
<td>40</td>
</tr>
<tr>
<td>Tisthune</td>
<td>2100</td>
<td>85</td>
<td>25</td>
</tr>
<tr>
<td>Kiamuringa</td>
<td>1205</td>
<td>30</td>
<td>47</td>
</tr>
<tr>
<td>Gashika</td>
<td>1860</td>
<td>65</td>
<td>25</td>
</tr>
<tr>
<td>Gubhirir</td>
<td>1003</td>
<td>66</td>
<td>13</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>49402</strong></td>
<td><strong>1576</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>

Including Kangari and Itabua, which are ethnically and physically similar to Embu division.
Appendix E - 1

Innovations in Mbere


"Among the crops introduced into the District between 1924 and 1956 were the following:

<table>
<thead>
<tr>
<th>Groundnuts</th>
<th>Sisal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>Geranium</td>
</tr>
<tr>
<td>Wheat</td>
<td>Wattle</td>
</tr>
<tr>
<td>Barley</td>
<td>English potatoes</td>
</tr>
<tr>
<td>Cassava</td>
<td>Tobacco</td>
</tr>
<tr>
<td>Mangoes</td>
<td>Garlic</td>
</tr>
<tr>
<td>Paw-paw</td>
<td>Linseed</td>
</tr>
<tr>
<td>Cashew</td>
<td>Gum arabic</td>
</tr>
<tr>
<td>Coffee</td>
<td>Onions</td>
</tr>
<tr>
<td>Boston beans</td>
<td>Edible canna</td>
</tr>
<tr>
<td>Fox-tail millet</td>
<td>Custard apple</td>
</tr>
<tr>
<td>Green grams</td>
<td>Oranges</td>
</tr>
<tr>
<td>Pigeon peas</td>
<td>Madagascar butter</td>
</tr>
<tr>
<td>Coconuts</td>
<td>Avocado pears</td>
</tr>
<tr>
<td>Pawpaw</td>
<td>Kwene nuts</td>
</tr>
<tr>
<td>Sunflower</td>
<td>Flax</td>
</tr>
<tr>
<td>Castor</td>
<td></td>
</tr>
</tbody>
</table>

Crops marked x are grown at present in Mbere.
Important developments in agriculture included:

1920's
- ox cultivation

1930's
- ox ploughing
- compost pits
- soil conservation
- afforestation
- experimental and seed farms

1940's
- Angora goats
- grazing improvements

1950's
- Ishiara irrigation scheme
- Young Farmers Clubs (closed 1958)
- grazing schemes
- tobacco, and Turkish Tobacco
- low altitude coffee

1960's
- 4K Clubs started maize fertiliser
- Mexican 142 Bean
- cotton
- sisal

Many of these innovations, such as Angora goats, never got started. Others, like sisal, failed because of a decline in world demand.
Appendix C

**Magistrate's Court, Siakago**

**Nos. of persons convicted.**

<table>
<thead>
<tr>
<th>Charge</th>
<th>Usual sentence</th>
<th>1970</th>
<th>1st 1971</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax, failure to pay.</td>
<td>30/- or 1 month</td>
<td>308</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>nearly all committed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drunk &amp; disorderly</td>
<td>10/- - 40/-, 1/2 pay</td>
<td>128</td>
<td>61</td>
</tr>
<tr>
<td>Idle &amp; disorderly</td>
<td>20/-</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Threatening break peace</td>
<td>20/-</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Assault</td>
<td>60/- to 200/-, 1-4m.</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Affray</td>
<td>60/-</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Indecent assault</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Malicious damages</td>
<td>200/-</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Escape from custody</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Refusing to work (EMPE)</td>
<td>100/- or 3m.</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Trespass</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Theft</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Refusing chief's order</td>
<td>30/- - 50/- or 1 - 2 m.</td>
<td>71</td>
<td>37</td>
</tr>
<tr>
<td>&quot; other order</td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Stock - no inoculation</td>
<td></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Health - no latrine</td>
<td></td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>- beer, tea shop</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>- no licence</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>no liquor licence</td>
<td></td>
<td>627</td>
<td>24</td>
</tr>
</tbody>
</table>
Some Recommendations:

While we do not in any way regard ourselves as a commission of enquiry, yet our small study revealed some bottlenecks which, it seems, could quite easily be eliminated. Aware as we are of the problems of inter-departmental cooperation, or of changing established Treasury rules, we nevertheless put forward a few tentative suggestions:

1. **Transport.**

   a) **Pool vehicle.** A long wheel base Land Rover station wagon should be made available, under the control of the DC, to go on regular publicised runs, with seats being available to all government staff on official business. For example, the vehicle could visit Kiritiri on Mondays, Ishiara on Tuesdays, smaller places less frequently, and Embu on Wednesdays, (these days are market days) and smaller centres less frequently, visiting each sub-location at least once a month. It would, of course, be less convenient than each officer going in his own vehicle, but this may be a luxury that all but senior officials should forego. It has the advantage of increasing mobility and effectiveness of junior officials, including chiefs and locational and sub-locational staff, and enabling them to plan safaris on a rational basis. The medical assistant currently announces his safari programme three months in advance, and makes seats available in his vehicles to other government officials, who often take advantage of the offer.

2. **Housing.**

   A systematic review of existing and proposed housing is needed, and plans should be made to improve, or construct new low cost houses.

3. **Secretarial.**

   Chiefs and sub-chiefs are civil servants and are thereby enmeshed in the paper producing bureaucracy. At small cost, each chief and sub-chief could be provided each year with a few simple accessories such as a calendar, a
desk-diary, a few duplicate books for correspondence and half a dozen pens. (It is not only the cost, but the availability of such items: where can one buy a calendar or duplicate book in Mbere?)

4. Finance.

Divisional officials should have greater financial responsibility, and should at least have a known annual vote for vehicle maintenance, and also a small cash imprest. The AAO, for example, should be able to reimburse junior staff for travelling to Siake for meetings, or buy a few nails and some locks and a door to enable a sub-chief to complete a house for a JAA.
There are themes of ideology and the role of the expatriate keep on being back and forth rather disturbing. I feel that insofar as rural transformation and development are concerned, as long as the decisive role of leadership is in the hands of the expatriate, whether this is in the terms of development projects or university teaching or school teachers or whatever, it always amounts to some very severe psychological disorientation for our people. It acts as a barrier, as a mould of nothing to be copied from above. I don't feel that I am in a position to dictate what is the major area that needs specific research. I don't feel that I am in a position to tell somebody else what to do. I hope that we can have more details about what is the role of the technicians - of the man who makes the decisions - how does he affect the way we see our problems and solve them? It should also be realised that the man heading the research is usually the nationality of the country that funds it and they tend to decide what should be done and how much should be given to it.

**Mr. Bari:** What are the factors which come into decision-making?

**Mr. Amin:** What is the role of an expatriate and how does that tie up with the ideological problem in connection with rural development? This is a two-edged problem: you have a man who is very crucial in decision making and almost behind the scene manipulating decisions, and you also have the problem of a national who seeks this advice without really exploring the possibilities of local talent to meet this. Let me give an example. There were three local men who had studied the feasibility of an agricultural project and found that it was unworkable because every five years a drought occurs. A local politician wanted the project for demagogic purposes and ignored the advice and said experts must be called in. These came for three months. They drove around and saw the national parks and recommended that this place was the most suitable and the settlement scheme was organized. Thereafter there was no rain for the first, second or third years! What we need is the de-colonisation of our minds.

The question of ideology - you cannot de-colonise the people without some kind of ideology coming in. It draws a distinction between ends and means. Increased production of coffee is good for everybody, we know that an improvement is not always beneficial to everyone. Increased production a means or an end? I would suggest that we have to worry about the de-colonisation of the minds of our own elite and political leaders.

**Mr. Amin:** We must answer several questions. Is it necessary to have nationally articulated ideology for development? If you do have ideologues, how do you judge between them and who makes the decision? What is significant? Is it the success in the articulation of the ideology or the raising of the standards of the common man? Who takes the social goals? Who evaluates the success of the implementation of social goals?
TEMU: How do you measure success? How do you choose between ideologies? This is a very difficult question. A choice has to be made and this is the whole political process: that somehow you have to decide on a course of action. Goals are specifically defined in Tanzania. It is important to know what goals are defined before you can discuss the means: large farms or small farms, etc.

SMITH: The problem of measurement of success is extremely difficult. There are frequently internal inconsistencies between the goal stated and the means to achieve it. For instance in Tanzania it seems to me that it is not necessarily correct that one must go for the large scale means of production to achieve a socialistic type of production. In Kenya - if one starts with assuming a Kenya ideology is stated in Sessional Paper 10 - there are obvious inconsistencies within the Paper. This makes it extremely hard to decide how one is going to measure success - is one measuring the success in achieving the goal or success in adopting these means which are supposed to lead to that goal.

We cannot decide which kind of ideology is the best for everyone because if there had been one such it would have been found long ago. When it comes to a question of getting a policy or system that is satisfactory, which is of course decided by the leaders of a country, the reasoning of this policy is such that the majority are happy about it and about policies which contribute to their progress, security and so forth. One progress is productivity, one food, one progress in unity, which is a sort of finding out a system whereby people can work and participate and be happy and these are the kinds of things we consider when we make economic plans or social policies. Referring to this topic of de-colonisation of the mind - this term is used quite loosely. I don't know what is generally meant by it. To decolonise you must hate the past colonisers and hate everything that they did. This would be one way of looking at it. You have to hate everything connected with the colonialists. Take also the question of whether this is realistic because what is happening in African communities? We are benefiting from what was left by the colonisers. We have to be quite clear what we mean by it and whether it is a term that should be used loosely unless it is defined.

There is also the question of giving a person the correct education so that he can help himself. It might be said that people who have had the advantage of education should not ask for big salaries like colonialists. When we try to find an ideology that will make our State work, we have to go deep down into what our people want. Do they have any motivation within them? What is it that will keep them happy? A system which we want to impose which we think is going to mobilise them to work - maybe they can mobilise themselves. Better homes, healthy children - why don't we start from that basis?
SESSION 5: June 2nd 2.30 - 4.00 p.m.

THEME: "The Human Aspect of Rural Welfare".

CHAIRMAN: S. Rohio

BACKGROUND PAPERS:


3. The Human Factor in Rural Transformation - K. Ndeti.
Despite all the farm produce, Kenya is faced with many nutrition problems. Several dietary surveys were conducted by a W.H.O. Nutrition team, in conjunction with the Kenya Government between 1964 and 1968. The reports show deficiencies in proteins, calories and vitamins especially vitamin A and B (riboflavin). The animal protein intake is very low too. The annual reports of the Ministry of Health show several nutritional diseases such as kwashiorkor, anemia, diabetes, a few cases of pellagra, beriberi and scurvy, and thus confirm the prevalence of dietary deficiencies.

Causes of nutritional problems in Kenya could be classified in two categories:

I  Direct Causes
   (a) Lack of dietary proteins. There is a general lack of good quality proteins in the diets, especially the weaning diets
   (b) The common meal pattern are those in which the adults get the bigger share of protein foods

II  Indirect Causes
   (a) Lack of nutrition knowledge
   (b) Poor methods of farming
   (c) Poor food marketing and distribution
   (d) Poor food preservation
   (e) Inadequate storage
   (f) Food habits which affect nutrition
   (g) Diseases
   (h) High child birth rate
   (i) Poverty

NUTRITION ACTIVITIES

The nutrition activities of the Ministry of Health are aimed at combating malnutrition in the country and especially in the rural areas. In order to effect this the Ministry creates...
..tion unit, which is responsible for training nutrition field workers. These are trained nurses who are recruited from various districts in the Republic. They take an extensive 6 month nutrition course at Karen College. While in training they are sponsored by N.I.C.E.F., then after completing their course they return to their respective districts to carry on with nutrition teaching. So far we have 60 field nutrition workers and 20 will qualify by the end of this month.

The field nutrition workers are attached to hospitals and Health centres where they conduct child welfare and malnutrition clinics. They give lectures and carry out nutrition demonstrations, teaching and cooking balanced diets, weaning foods, hygiene budgeting etc. These lectures are also given at the chiefs' barazas, women's organizations, schools and other institutions.

When children have been dismissed from the hospitals, they visit them at their homes for follow ups. Home visits are done regularly to advise mothers on how to take care of the families. Many more field nutrition workers are needed in order to reach more people in the rural areas.

**Rehabilitation Centres**

There are nutrition centres which are usually run by the Kenya Red Cross. Mothers with sick children are referred to these homes from hospitals or Health Centres. They stay in these homes from two to several weeks. They learn how to care for the family and especially how to feed their children properly by giving them good, well cooked, balanced food. The field nutrition workers visit these centres to give lectures and demonstrations as well. However, these homes are very few in the country and they can only accommodate 8 to 14 mothers at a time. More centres of this nature are needed in various parts of the country so that more mothers get the nutrition knowledge they lack.
THE PILL AND THE FAMILY

A DISCUSSION ON FAMILY PLANNING CONTRACEPTIVES,
FERTILITY REDUCTION AND NATIONAL WELFARE

J. Mugo Gachuhí
Institute for Development Studies
University of Nairobi

THE PILL AND THE FAMILY

In 1969, the population of Kenya was said to be growing at the rate of 3.3 per cent per year. This trend is likely to continue at that rate throughout this decade and perhaps start tapering off by the beginning of the next decade. What the implication for such growth rate of our population is, has been stated by several socially and economically conscious members of our society.

As a method to try and limit the increasing fertility rates, the Government supports a national family planning program which aims to assist those parents who want to limit their family size by giving them the means with which to do so through maternal and child health care clinics.

The rate of family planning method adopters, that is, those women who come to the clinics for contraceptives, is given as around 3,000 women per month, or 36,000 per year; a significant number indeed considering the anxieties and fears that some of our people have about limitation of births. If we follow these figures, at this rate of adoption, it will take us 1,000 months or 83 years before we have given contraceptives to all women who are currently between the ages of 10 and 49 years. Even if we take the age category which is of child bearing age as 15-44 we still have about 2 million women who would need services and who, at the rate of 3,000 per month, would require 667 months or approximately 56 years to get these services.

If for example, we could increase to 12,000 women adopters per month and assume that this figure will remain unchanged for sometime, it would still require roughly 167 months or 14 years to give family planning services to the women who are currently in the age category of 15-45 years. In our calculation as to when we reach the target (all the women in our given age category), we should keep in mind that...
None who are now below the age of 15 years will have entered our service category and they too will need the family planning services. At this rate our efforts would have to be increased by about 8 times if family planning services are to be diffused throughout our national culture within this decade. In that case we would need the next 7 or so years to fully cover our target population. Chances, however, of increasing the number of adopters by eight times per month, i.e. from the present 3,000 to 24,000 per month is not likely at the present.

The assumptions underlying the family planning services are that: (1) By spacing children, both the mother and the child will have better health. (2) That family planning is a method of fertility control. The first assumption is correct, but the second one is not entirely true inasmuch as population reduction is concerned.

The purpose of this paper is to show how family planning alone cannot achieve our desired population growth reduction to, say, 1.5 per cent per year or less, and also to suggest some changes that might be added to our expanding program of family planning, and hence family welfare.

THE MOTHER, THE CHILD AND THEIR WELFARE

No one can disagree that a mother in good health can both take care of her children and do her other duties better than a mother who is in bad health. I believe that neither can one argue against the fact that healthy children are assets both to the parents, the community and the nation. We do know that frequent births can generally result in bad health of the mother and child. This is so because for every birth, a mother needs some time to rest and rebuild her body and at the same time she needs that period to nurse her child. Hence one of the priorities of family planning policy makers is to attach family planning services to maternal (maybe even paternal?) and child care services, thus ensuring and safeguarding the health of both. To this end the MCH clinics are doing well.

A problem arises, however, when we imply that when we have persuaded the mother, who along with her husband and the family feel the weight of too many children, that spacing or planning her children is good, we are on the way to reducing the ever rising fertility rates. Family planning as a program aimed at reducing population
sizes over a period of years cannot achieve this goal. It is argued here that it is possible for family planning services to result in an increase of the population instead of lowering it. The argument is generated by the fact that when a mother gets a child every two or three years - the planning mother - she does not only get more children over her fecundity period but she also gets healthier children while her own health remains good. Unless the family planners explicitly state the number of children a woman ought to have, say 3 or 4, our services at the present cannot be said to be achieving our goal which is fertility reduction either in the short or long run.  

To pursue this point further, if a woman has her first child at the age of 20 and she spaces her other children so that she has a child every 3 or 4 years, simple calculation will show that at the end of her fecundity period, say, 40 to 45, she will have, if on the three year interval between 6 and 7 children and if she chooses the 4 years interval by the end of her child bearing age she will have had between 4 and 5 children. The number of children will increase as the space period is reduced. This process is merely one of spacing and cannot be confused with fertility reduction. Spacing, moreover, as currently propagated in Kenya does not have much meaning to most clients. In Kenya, field educators and motivators only talk of spacing without giving the couples choices. It is possible for example, to have many different ways of spacing children. A couple could decide to have so many children and have all of them during the first few years of their marriage, saving the middle and the later years for their own rest and career pursuit. They could also decide to have their children in the middle of their married life and then stop, thus having time to pursue their careers in the beginning and at the end of their married life. Another couple also could choose to have their careers established at the beginning and have all their children at the end. Still others may want to space their children

1. In fact it is not infrequent that one hears the family planning field educators categorically state that they are not saying how many children a couple ought to have. What they say is "have as many children as you want to, only space them". This is not a motivation towards reduced fertility rates.
There is no way that they have a union every so many years without deciding when they will stop as long as the interval is the same. To have a union with all at once, or at a given interval, or all at the end of any combination of these are choices which are not currently being explained to the service recipients, i.e. the potential family planning adopters.

The point remains that no matter which planning or spacing method one chooses, births will not be reduced this way. The author is aware of the most convincing argument that, if a couple accepts the idea of spacing, in the long run at least, they will get tired of having children and of necessity they will limit the number they will not to have. Thus, the argument runs, the first task is to convince the parents that family planning is a good idea and eventually that they will see the need for birth limitations. The argument ignores the type of spacing possible as enumerated above even though these spacing arrangements will not by themselves bring about population reduction. The question then to be raised, is whether a couple should decide how many children they would like to have from the very beginning, or they should have children and at some point decide how many more they still want to have.

It is argued here that as long as we do not talk about limitation of the number of children a couple ought to have from the very beginning, family planning motivation and education and the acceptance of contraceptive will not only increase the quantity of people, though with an improved quality of life for both mother and child, but will also delay the improved developments that we so eagerly need in other respects of our national life. What is needed is the national planners is a decision in the whole policy area of family planning. If the decision is one of family planning, e.g. maternal-child health care, then what we have now, with some improvements and expansion, we hope to reach all persons seems to be adequate.

If we want population controls via a limit on fertility limitation, then we need a policy that stems. In that case, we will not only see increased expenditures in this area but also governmental approval of the end of more effective methods of reducing the population. The point is that many nations which have done this in the latter part of the 20th century have seen that while family planning was not practiced in our country is of itself a good, but will not
solve our immediate and future problem which is one of large population with limited resources for their use.

THE POLITICS OF THE PILL

Perhaps there is no other more sensitive area of discussion in these modernizing societies than the whole question of population control, or as some people prefer, birth control. We term this sensitivity, the "politics of the pill". Politically, the debate over contraceptives can be divided into three categories of discussion.

1) In Africa, we can look at contraceptives as essentially a western creation introduced to us so as to limit our numbers and thus be rendered powerless in international arenas where sometimes the decision is made in terms of ideological orientation. An example of this would be an international body where decisions are based on democratic vote but where in the final analysis the question becomes one of us versus them. The number of "us" or "them" becomes very important indeed. It is often argued that the issue is of the west vs the third world and as none of the contraceptives are made in any of our African countries, then, the argument is concluded, there must be an ulterior motive behind the free supply of contraceptives. To the critics of the pill or family planning, it is not enough to tell them that our government is spending a lot of money to purchase these contraceptives although it gives them freely to its citizens. The critics also argue that by wanting us to limit our numbers, the west is not so much interested in our welfare as such, but more importantly they are interested in forever remaining in the dominant position of our commerce and industry, e.g. trade and manufacturing and thus rendering the African forever dependent on imported goods. This argument, whether it has foundation or not, is a serious one and can have a negative impact in any national plan aimed at population reduction. Our policy makers too cannot ignore it especially where international negotiations that may involve aid and mutual agreement are concerned.

In our countries, that are generally considered by western standards as "underdeveloped, backward, developing" or what have you, a large population would be considered more advantageous than a small one. Thus, the politics of the pill in the international as well as the national arena comes down to a debate as to why the West is so much interested in our reduced population. Allowing international politics to enter in the subject of the consideration of population control does not of
course help individual countries, for when all is said and done, it is the individual country which will determine the rate of growth it wants for itself bearing in mind its ability to provide the goods and services in demand.

(3) Within countries, and especially in Africa, there is always the silent question of ethnic numbers. Whether this is implicit or explicit in any given country and especially in the matters of various decisions is, for the purpose of this paper, left unexplored. Ethnic numbers cannot be ignored in most policy decisions which have implications in the sharing of power and the limited services. The diffusion of the idea of family planning becomes extremely significant when one considers the idea from a national pluralistic viewpoint.

Most African countries are pluralistic societies which have been cemented together because of historical accidents of colonization. This cement has not quite dried as yet to form a solid block that can be translated into a socially cohesive society. In any pluralism where ethnic relationships have not been fully worked out, there is always competition, conflict, and then compromise. Thus to introduce the idea of population limitation in such situations would raise the question of why it is necessary especially if it ever happened to seem that only one ethnically homogeneous group is pushing the idea of population control. Where national cohesion is not fully achieved, one would suspect that the underlying arguments for or against the pill would be ethnic fear of domination by another. In such cases, the rejection of contraceptives would be based on the ethnic desire for numbers which would be able to influence the national decisions of this or that kind.

Thus, for contraceptives to be fully diffused nation-wide, careful programmes which aim at not arousing but educating the people, perhaps on individual family level, and without sounding negative or threatening would be required. Success in this case would seem to depend on an individual's outlook on his surrounding and a final decision as to whether he could make it alone or if he
needs a larger group. Emotionalism and over-reaction in matters that effect or are related to population policy will only make most people sceptical as to the danger of large numbers. What is needed is a carefully and well calculated program which shows the individual in his relationship to his needs and the sources of those needs, again in relation to the number of people he has to support.

(3) Individual behaviour is governed by group or community norms prevailing. Thus in our African traditions, individual actions, desires etc. are to some extent controlled by the clan, ethnic or regional affiliations. Within these traditions, one of the most important responsibilities of a couple was to have children, who ensured not only their own continuity after death but that of the clan and the tribe after their temporary stay in the world was over.

The desire to have many children is important in Africans' definition of a complete family. For indeed this does not only guarantee a man's continuity in death but also enhances his social position when he is alive as well as ensuring that even if some of this children die, some will still survive. We can call this the law of averages in fertility.

Children were, and still are a very important part of the community. Infertility or even subfertility was looked at askance and in the present day and age, it is not unusual to find couples divorcing because the woman has been unable to bear the man's children. Thus the pill today will find great resistance on the individual level where reasons for limiting fertility are not fully understood. On the individual level, arguments based on medical or economic reasons are not usually accepted as valid reasons for a couple to stop bearing children after a certain number and especially where they may still be young. It is difficult to convince some couples that child mortality has been and is being reduced and that the chances of their children's survival to adulthood are better than they have ever been before. This is especially so when such couples may have lost several children.
 Whatever reasons or they know a neighbour who has lost some. It is also not easy to convince some people that changes in outlook in life have come about and that more children are now usually more burdens than a blessing. Until such time that these changes come to them, they generally will not believe: but when they are faced with rising school fees and rising unemployment, that seems to be when they seek family planning services. Thus the women who come to seek contraceptives are generally those who have 7 or 8 living children.

Even if these women use the contraceptives effectively, their importance in reducing population sizes is insignificant. Their families are already completed. Because most of our women first of all know the number of children they want and then seek contraceptives.

It seem to indicate that there are some unspoken reasons, be they cultural, social or political that are not allowing the acceptance of these devices early enough for them to be considered as methods of population control. Though in the final analysis it is the individual couples who must decide whether or not they will use contraceptives, their acceptance and effective use will be determined by the prevailing attitudes of the community and the nation. To this end, information

Perhaps in passing it should be stated that spacing of children is not an alien idea for the Africans. Most African traditional taboos forbid a man from having intercourse with his wife while she was nursing. Lactation sometimes went on from two to three or four years and thus resulted in widely spaced children. To-day the difference between traditional spacing and family planning is that we use the pill and other contraceptives since our old taboos of "thou shall not do..." have broken down. But unlike in the past, to-day's spacing methods are also used as a form of fertility limitation even if not so stated. Once their use are considered by some people as an un-natural way of spacing children and to them what is not natural is not good.

It is not quite clear whether those mothers who come to seek family planning services after their families are completed and while they are still in their fecundity period do so because they are truly concerned about the population in general, or whether it is because of individual reasons. The latter seems to be more likely. It is possible that these mothers would have come to the family planning clinics long before their families were completed if the services had been available. The recency of the availability of contraceptives does explain why even now most of the people seeking the services are still those with large families. It will be interesting to watch the next few years and see if, as the idea of planning becomes accepted, young married couples will have fewer children by the time they have reached the age of those with completed families who are currently seeking the services.
about the general knowledge our people have of contraceptives is unfortunately incomplete.

To this end, figures given above of 3,000 adopters per month in this country are misleading in as far as effective adoption of contraceptives and the implied eventual reduction of the population is concerned. This is necessarily so, for when we look at the attendance cards in family planning clinics, we note that many women who come to the clinics on a given day for the first time are given contraceptives but very few return for revisits and more contraceptives. With the exception of women using the IUC, of whom we may assume that that device is in situ, it is questionable as to how effective the other methods are, and especially for those who never return to the clinics. One wonders whether for the pill or condom users, the first supply is ever used at all. Until we have done a long term observation of these women using contraceptives as compared to those who do not, and then the number of children born to both groups at the end of the observation period, it is difficult to see how claims can be made that contraceptives we have now are helping in the eventual reduction of fertility.

We thus conclude this section by stating that while the fertility control methods we now have are the same ones which are used in fertility control campaigns, at the moment their effectiveness is in doubt simply because we have not stated whether it is population control or family planning that we are after. We also argue that for their diffusion to take place throughout the population, and for their intended effectiveness in limiting the rising population size to be realized, it will be necessary to have a detailed understanding of the socio-cultural and political factors - those that are associated with the need for many children on both the individual, ethnic and national levels. Only then will we be able to introduce a genuine program of fertility control.

THE POPULATION, THE PILL AND NATIONAL WELFARE

Decision makers are always faced with the perplexing problem of how to maximize socio-economic benefits of both the individual and the nation in the face of ever increasing populations. The issue has ceased to be one of which must come first; i.e. population reduction and thus increased economic development which will bring...
population reduction. This argument does not help in the making of a decision, and assumes that without any catalyst or definite policy, no automatic influence can occur. Even if the assumption were true, it does not seem possible that the end results, which are low fertility rates and high economic growth rates, hence improved social welfare, could be achieved.

The theory that improved economy may speed the reduction of fertility, especially where population growth rate is faster than the economy, has been essentially a western idea, and while it has worked in that part of the world, it is doubtful if it will work here. For both fertility reduction and economic growth to occur, we need to invest in both areas simultaneously. This means that we cannot trust one to have an ever lasting effect on the other within the time period that we would like them to occur. Population education must also be given a priority on the same level with economic development and only then will the effects of one be felt on the other.

To improve a nation's welfare then, and especially where the necessary resources are scarce, policies should not just emphasize one aspect of national development over another without stressing the interrelated implication on each other. A society is the totality of its whole and is much more complex than its part. To this end, there does not seem to be a clear and uniform policy which is aimed at the uniform development. While policies do exist in all aspects of our national life, there seems to be an over-emphasis in economic development over that of population reduction. Sometimes there is also an over-emphasis on urban growth and development over the rural part of our country. As we are undoubtedly aware, most of our people live in our rural areas and as the current Kenya Development Plan stresses, it is to this long neglected sector that we must direct our resources. Nairobi and other major towns will not be large enough to accommodate all of us nor should we forget that the shamba is not large enough to occupy all of us in an economically active life especially if the methods of exploiting the soil remain what they are now. With rising population, we cannot hope to achieve a viable economic and social development that we all want. Agricultural revolution must occur at the same time that population reduction occurs. In this case, the contraceptives that we have and those that we could add, coupled with massive functional education in all aspects of life will be necessary.
TOWARDS A GENUINE POLICY OF FERTILITY REDUCTION

Sooner than later, our policy makers will have to decide whether they want family planning or fertility reduction. As stated earlier, if we just want a large population without the desired social and economic welfare, then family planning services, as currently organized will be enough. But if, on the other hand, we want not only healthy individuals but also economically active people then the family planning services will need some changes or improvements.

A fertility reduction policy-programme that first of all aims at educating the people will have to first start with the youth of Kenya. In the 1969 census, the under 14 years of age group constituted nearly 50 per cent of the total population (5.3 million children) and if we include those in the 15-19 age bracket then we have a youthful population (under 20 years) of about 6.4 million people or more than 60 per cent of the total population. This youthful population is of course growing and in ten years we are likely to have 70 per cent of our population under the age of 20 years. We should not forget that this group will be reproducing itself in matter of time. This would be indeed a phenomenon that is adding to already strained resources and which would soon reach danger point.

The argument put forward in favour of introducing population studies in schools is that it is in these young people that we must invest the future and the well-being of our nation.

4. There are some people who would prefer to call population studies sex education. The author believes that sex education simply teaches the anatomy of the human being and reproduction process. Population studies on the other hand, as used here, not only include sex education but also other socio-economic aspects of the society. Population studies should include such studies as population density and ecology and the available food, health and job opportunities, etc.
would also give them education for life - an education that is
practical and that gives them alternatives rather than one which
just trains them to pass examinations. It makes no sense in fact
to give contraceptives to a woman who has already completed or is
about to complete her family. It also makes no sense to deny the
sexual information to these young people who most need it and on
whom the burden of nation-building will soon rest. Population
education will have to be introduced in the schools and taught to
children from primary school upwards. As we are aware, the
majority of our primary school pupils do not go past standard seven,
too young to be employed if there were employment, and too
passionate to believe that they could not be employed in the big
offices with their education and their age. In these schools, which
most of us have gone through, the children learn little of relevance
to their future occupations. A curriculum that includes the dynamic
nature of populations and which is suitable to the lower levels can
and ought to be developed. We should ascertain that when the child
leaves school he has some basic knowledge, if not of his international
surroundings, certainly of his own body, how it works and how he relates
to his surroundings and what he can do to try and control part of it
for his own purposes.

The author is aware that opponents of this subject in schools ask
by whom and how will the curriculum be developed, taught and
understood by youngsters who have no experience in life. This,
it is argued, is a minor point. We do know enough about how
children learn and it is possible to have a specialized
interdisciplinary team- including child- psychologists, that can
work out a curriculum suitable for young people. The procedure
is one of experimentation with various approaches until we find
out which way is best suited for a given age group. The
teachers may also have to undergo intensive training in the area
of population education so as to be able to teach the subject
adequately. Throughout this paper I have ignored the cost
involved while very well realizing that it is great. But the
cost now will have to be weighed against the future costs
which will not only be material but also human waste.
It is to this youthful group that family planning seminars, talks, films, etc. should be directed. To point out the need for population education should not be construed to be synonymous with advocacy for birth control contraceptives in the schools, though at some stage, especially in the secondary schools, boys and girls should be told about them and allowed to use them if they so wish. Such information perhaps should be disseminated by a nurse-matron of a school who has been given enough basic training in the use of contraceptives and how they should be introduced to young people. The fear that knowledge of contraceptives by young people will lead to immoral acts is based on some false and uncritical assumption and perhaps the adults fear of what they would have done if they had been given the chance during their own youth. For indeed good moral behaviour must be prevalent throughout the community. It is doubtful whether there is any person or group of persons - in this case the adults - who can keep secrets of the body to themselves. Sooner or later they become common knowledge and then the choice comes down to whether a person will use them wrongly due to wrong information or correctly because they have the true information. Home-based moral training for the youth, however, has become an impossible task for the parents due to the changes that have taken place throughout the society. Thus parents have lost control over their children to such powerful forces as the school and towns. It is to the schools that most of the responsibilities have now been turned, for not only future occupational training of the children but also for moral training. These schools therefore, must be prepared to accept and fulfill this challenge. It is doubtful whether they are ready to take up this challenge at the moment.

An effective diffusion programme that reaches all school pupils for any period of time cannot fail to contribute to the stabilization of population growth in the long run. Our educational system is likely to be very effective in transmitting information and inculcating norms, since pupils are at an early age when their attitudes are relatively susceptible to influence by an authoritative figure, the school teacher.

A teacher must of course have the knowledge of the population studies and hence, this subject should be offered at teachers colleges as soon as a policy decision is arrived at.

The pill or any other contraceptive will not increase the immorality of the youth any more than a non-method will. For if there is immorality in the community, it should not be blamed on the youth but on the society which permits such immoral acts. It would seem that if the youth were to be involved in such acts, it is the adults who are to blame for their failings. I believe it is much easier to prevent a pregnancy than to have some parents' daughter expelled from school to live for sometime in shame. Contraceptives will sooner or later become part of our everyday vocabulary and I wonder whether the time is too far ahead when parents will be taking the initiative to make sure that their daughters are provided with the proper methods.

As an initial step towards a genuine policy of fertility reduction, it is suggested that a pilot study be done on the students in primary & secondary schools, and teacher training colleges. Such a pilot study should try to ascertain the amount of knowledge the students have about contraceptives as well as conception. Once it is known what the pupils' knowledge, attitudes and disposition are the experiment should be done with selected schools throughout the country to determine if it is possible to introduce the subject of population and the best way to teach it.

Towards a genuine policy of fertility reduction several suggestions are made:

1. That our policy makers push the idea of fertility reduction by not only increasing the funds for research in the population area, in the area of motivation education but also by organising other methods of fertility control such as vasectomy,
7. Even eventually considering the conditions under which abortion could be legally done as a method for population reduction.

(2) That as a measure to counter the rising increase in population the government raise the legal age of marriage to over 21 for girls and 25 for men.

(3) That all schools be allowed and encouraged to include population studies in their syllabuses, starting with secondary schools and teachers training colleges and eventually, primary schools.

(4) That a system of incentives be introduced which will reward those who voluntarily limit the number of children. This system could be in the form of tax incentives, negative tax, school fees, or a direct reward of some kind. Before such incentives are introduced, however, detailed research will be necessary to determine which incentives would produce best results.

8. Attention is called here to the fact that while abortion is used in some countries, i.e. Japan, Soviet Union, Hungary, etc. it has serious physical, psychological and financial consequences. Assuming that abortion was legalised, our hospital beds, which are already crowded, would perhaps be filled with abortion seeking women and thus seriously affecting the treatment of other illness. While abortion should be resorted to as a very last resort in fertility reduction, consideration should be given to those women who may have tried other contraceptive methods and failed and in whose opinion as well as that of the medical officer, birth of their child would seriously affect their psychological health.
Any combination of these methods or all of them should go a long way in bringing about lower rates of population growth within a period of a few years. But like most innovations, studies that are needed to understand the opinion of the people, i.e. socio-cultural-political studies would definitely be necessary before embarking on any of the methods. While discussing the methods, one would wonder whether it is not appropriate at this time for the policy makers to start thinking whether attaching family planning services vis a vis population reduction programs is best suited when located in the Ministry of Health.

The present organization of family planning services needs an added dosage and perhaps the organizational structure on the decision making level should be expanded to include non-medical personnel. To tie down the limited number of medical doctors to family planning alone, when indeed we have a critical shortage of these professionals, seems to be an error. Experience in other parts of the developing world, e.g. India, Korea, Pakistan etc. seem to indicate that non-medical personnel are capable of running the administrative aspect of family planning and only including physicians in the actual cases that call for sophisticated medical knowledge.

This is not to say that the medical professionals who are currently involved are not doing a good job. On the contrary. What is meant is that population reduction education and services are services which would seem to best be run by personnel with marketing skills, general purpose administration and interdisciplinary social scientists. The population problem is not just a medical problem for Kenya, it is a national problem and as such we need all the available national skills to tackle it.

In our ever continuing efforts to improve our lives, we should remember that what we are dealing with is a complex subject of available resources versus the number of people. Our main efforts are to improve the quality of life and thus our number becomes important. As we move towards the future, frequent rethinking of our priorities, policies and plans will be necessary. For the improvement of our people's welfare we all desire, whether in the rural areas or in our growing urban areas, consideration of the question of numbers will always be important. Along with these considerations, we must take appropriate steps to counter the rising numbers.
Whatever these steps are, it is becoming abundantly clear that they must go beyond the current contraceptive practices. We must also be prepared to make the unpleasant policy decision that besides wanting healthy persons we also want lower population. The number of people game and the number of pounds for development is serious enough to warrant an unemotional and intelligent national discussion.
HUMAN FACTOR IN RURAL TRANSFORMATION

K. Ndei
Department of Sociology
University of Nairobi

In this paper an effort is made to elucidate the concept and theory of rural transformation as currently perceived and executed in the developing countries. This process has attracted many theorists from developed as well as developing countries. The paper attempts to summarize the approaches of rural transformation as perceived by the writer and as manifested in the developmental activities taking place in the third world. While the ideas in this paper are based on the African experience, the author believes that the theoretical approach assumed applies to many underdeveloped countries of Asia and Latin America. After the summary of each strategy of rural transformation, the writer attempts to appraise the philosophical basis taking into account the pros and cons of each strategy. The conclusion drawn from this tug-of-war of ideas is not necessarily definitive. For the sake of analytical convenience, the paper is divided into three main philosophical strategies which the author deems to be most significant in appraising both the human factor and the genesis of strategic orientations in rural transformation.

Rural transformation is a recurring theme in the development world. Theoreticians of the phenomenon are not always in agreement on the philosophy of the process, i.e. what the process ought to be. They have neither defined the envisioned goal nor devised a general strategy or a methodological front which could be applied towards the realization of the conceived goal. For the first group of theorists, the ultimate object of rural transformation is industrialization of the rural economy or the mobilization of the rural productive forces with the consequent net effect of raising per capita incomes of the rural National Product. The protagonists of this view seem to take their inspiration from the trend of world history over the last few millennia, i.e. hunters and gatherers were displaced by agricultural societies
whose superior technology in the domestication of plants and animals sedentarized or stabilized life. The agrarian societies characterized by the development of large scale irrigation schemes along river basins, megalithic monuments, systems of writing, theocracies, monarchical systems with their bureaucratic infrastructures, etc., succeeded the cultigen economy of horticultural systems. The coming of an industrial economic system meant the end of all other economic institutions which have dominated over 90% of man’s historical existence. This belief is further reinforced by the magnifying effect of the major social institutions in most societies with economic institutions becoming increasingly the most fundamental structure (in Marxian sense) and therefore the screening mechanism of all other institutions of man.

Thus the proponents of this theory see a parallel or complementary evolution between the productive forces of developed and underdeveloped countries. In other words, this view states that after an industrial revolution, the question of retaining or going back to earlier forms of production does not arise any more. The developing countries who, through the force of historical accident, did not come under the orbit of the industrial revolution at earlier times have no choice now but to follow the natural course of industrial destiny, i.e., the complementary industrial evolution faces the same direction. The miracles performed by advanced science and technology of developed capitalist and socialist countries are irresistible. The developing countries must witness this historically established revolution in order to survive in today’s and tomorrow’s world. Thus, the motto in many developing countries is “we must industrialize or perish.” Hence rural transformation becomes ultimately the ‘d imperative of destiny.

For the second group of scholars, transformation of rural life means reduction of environmental constraints which militate against the fundamental potential such that the progressive and creative force of a society becomes ultimately ineffectual. The mitigation of this force results in general social pathology (social...
...tern's anomie or morbid existence) which in developing countries is projected by fundamental or perpetual ignorance, poverty and disease. The philosophy of rural transformation in this case has redemptive fervour. The donors to rural transformation are not only liberating the developing countries from shackles of perpetual misery and fundamental curse but they, by same token, bring them closer to the eternal grace and redemption of a god called science and technology. The morality of this philosophy is that man ultimately is a moral (conscientious) animal. When driven by events of circumstance or a force of need he feels the need to dispense moral obligation. He, therefore, must extend scientific and technological fellowship to fellow man. This missionary zeal and vision is the philosophy behind the majority of bilateral and multilateral aid given to developing countries. Underneath this missionary fervour is, of course, selfish interests which in many cases result in extreme exploitation of developing countries by developed ones. The raw materials of developing countries end in subsidizing the industrial complex of developed countries as the following example shows.

The reduction of environmental constraints, while aimed at reducing the general misery of an "underdeveloped man" still may have hidden strings somewhere. After all "he who pays the score calls the tune". The strings in the majority of cases are political and economic. In other words, the donor makes sure that the receiver fits the donor's ideological orientation. Where the donor's ideological interests are not directly related, political deals may be made on a long term human investment. The donor in such cases makes sure the political barometer and if it tips slightly in the right direction donor cuts in quickly in order to balance the equation of his frame of reference refers to some of the most glaring examples of the activities of some of the most renowned agencies such as, WHO, FAO, UNESCO, UNDP, etc. These
U.N. agencies are important in their 'missionary' work. The flaw of such a claim is the fact that all members of the club are expected to contribute to the general fund to promote the spirit of the U.N. However, when one examines closely the funding as in the charter of the U.N. one finds that the contribution of a dozen or so members (super-powers) is substantial. This means they control the running of the U.N. machinery by funding it. The matter is further complicated by the charter allowing a superpower to veto any issues that may go contrary to its interests. For instance, the membership of Mainland China to the U.N. is very important and according to world opinion no important decision affecting the world destiny can take place while China remains outside the organisation. But somehow America has managed to keep China outside the U.N. and that means its interests prevail over world opinion.

Thus, the aid that is intended for noble causes ultimately serves the donor's national interests. In fact the whole issue is a very mixed bag. While claims of furthering the frontiers of man's development are made in these aids, the donor is always pushing national interests. On the other hand the receiver, who is downtrodden economically, recognizes all the machinations to which he is subjected by the donor and may not take any action. Being placed on the wrong end of the technological scientific yard-stick makes the receiver ineffectual on all counts. The socio-economic data of the last few decades shows that the relationship between the donor and the receiver benefits the former. The receiver has been subsidizing the industrial development of the donor by providing cheap raw materials. The main result of this spatial relationship is a shocking trade imbalance between the imports and exports. The donor always exports more than he imports from the receiver. The tragedy of this relationship is that the receiver becomes more and more dependent on the donor's technology. Since the donor must survive by selling manufactured products on the world market the cost becomes more important than quality in production. The goods channelled to
Special receive (morality of aid) are of very poor quality and are not to have a limited life. The designs of some of the manufactured products change very quickly so that by the time the receiver finishes paying the "hire-purchase" the particular product is out of date. He cannot get the spare parts and if it is a piece of machinery it becomes scrap-metal which finds its way to the donor as a special raw product. We have many examples of these manufactured goods in the form of cars, tractors, trucks, planes, etc., on which depreciation indices are very high. The aid, therefore, becomes the most effective tool for furthering imperialist ideas and donor's national trade. The moral part of it is mere pretence.

The third team of theorists tend to interpret rural transformation to mean inviting a team of "experts" from designated countries to plan the development of an under-developed country. These experts are regarded as part of technical aid whose services are easily translated to cash aid. The myth about these experts which are found in all the important institutions of a developing country is that they are claimed by their own countries about the problems of development. Many of them may never have been outside their own country before or may have recently graduated from university and want some vacation or experience in a developing country. Others may have been colonial civil servants who want to go back to see whether the atrocities they committed in their heyday had been rectified. There may be one or two of the experts professionally committed because to the strict rules laid down by the donor they may not be able to do much. Also these few committed experts may be placed in situations where the colonial mentality of the civil servants of the host country become the most demoralizing factor.

I am thinking of a British/French expert advising an African who, more British/French than British/French, so the team is also a mixed bag and one wonders whose interests are they serving. I really cannot believe that a British expert will give Kenya's rural transformation the knowledge that will ultimately result in excluding British
goods from the Kenyan market. This type of situation holds true for all aid from whatever quarter they may come. It is the height of absurdity to think that foreign experts will provide information that runs contrary to their national interests. This indictment is very serious and it raises the whole question of foreign experts. Can we exclude entirely the human factor in foreign aid? Is it wise to base development of a country on advice of a person whose loyalty and knowledge are questionable? Are foreign experts not the new vanguard of neo-colonialism?

These questions should provoke very serious rethinking of the whole philosophy of rural transformation and economic development. So far, the researches that have been accomplished in, say, Kenya by these rural experts have been piecemeal affairs. Many of them have been mere extension services familiar in the colonial days. The same vicious clique which evolved the idea in those days as a justification for exploitation is the one coming back to do it over and over again. To me rural transformation involves more than pretences of moral obligation, industrial economy or foreign expertise. It is, I believe, a transformation that must be accomplished by the underdeveloped countries through their own efforts and resources. Kenyans know more about the rural problems of Kenya than any expert from America or England. Some of them have not only the technical knowledge, unequaled by any foreign expert but also the instinctive understanding of forces limiting development in their countries. For instance many are aware of the damage that foreign aid and expertise have done in creating the psychology of dependency especially in Ministries of Finance and Economic Planning in many underdeveloped countries. This is also where most experts are found executing, designing and making financial arrangements for planning. Rural transformation which takes this approach will never be realized because the masses are not involved. Rural transformation must take land policy as the first step. There must be a clear policy on the use of land and its resources for the social welfare of society as a whole. Secondly, there should be a social ideology which defines the
inheritors of the country's resources and welfare. Thirdly, the educational policy is very important as a long term goal. The education must be designed to meet the needs of a developing country. Fourthly, the planning of socio-economic development must be done and executed by the nationals. I will exclude any part-time planner or expert. By this I mean that a planner must be responsible for the execution of the planned ideas. He must supervise his plan so that a sense of continuity will exist in the succeeding plans. If there are mistakes in his plan he will be in a position to correct. This later point will exclude all foreign experts in planning and development at whatever level. Finally the national universities should be the instrument that must spearhead planning in every direction of a developing country. If a country must use foreign experts this must be in a very peripheral manner.
ADULT EDUCATION AND RURAL DEVELOPMENT

P.G.H. Hopkins
Institute of Adult Studies,
University of Nairobi

May I, at this late stage of the Workshop, enter a plea for more careful consideration of the role of adult education (in its widest sense) in the whole process of rural development. During the sessions there have indeed been a few references to education; but in my admittedly rushed reading of the papers, I have seen little to convince me that its crucial role is fully accepted.

True, Professor Oloya's paper mentions the need to reform rural schools and on the first day Dr. Ascroft rightly stressed that the Extension Services were a key link in the communication chain, proposing radical reforms for the training of Extension Officers. This emphasis is entirely reasonable when one is concentrating upon farm efficiency, but it can lead to equating increased agricultural production with rural development. (In fact, the former is one necessary, but by no means sufficient, condition for the latter.) The more the need to broaden our educational programmes has become more evident, the more the Conference has dragged itself to be conclusion that we really cannot divorce "Economic Man" from "Social, Political and Cultural Man". We must now admit that education for rural adults must be more than a device to improve their ability as message-receivers from "those who know what they ought to want" - (as one participant has said half in jest).

If one looks at education primarily from the point of view of a development economist, one inevitably stresses its role as an "input", a factor of production; but even a general economist has to recognise that it is also a "consumer-good" - and we have tended to ignore this aspect so far. Or looking at the problem from an educational angle, one could say that the purpose of all education can be three-fold - economic, social and cultural.
We have tended to stress the economic purposes, equating the quantity of goods with the quality of life (as we are entitled to do, to some extent only). But we have more or less ignored the other two aspects, which are concerned primarily with the quality of life for individuals in their local setting and for the nation as a whole.

The 1960 UNESCO Montreal Declaration on Adult Education expressed the idea in this way: "People should be encouraged to feel pride and dignity in their own cultural heritage. People must be encouraged to understand and promote change." For such a difficult balancing-operation between desirable economic and political change and essential social stability, neither school education nor technical instruction is enough! If the process of rural development is to be more than mere manipulation of the masses by a small expert (and expatriate) elite, the conscious and willing co-operation of and even participation by large sections of the adult rural population is necessary.

Thus we need to see the technical aspects of education together with the nutritional education (dealt with by Miss Moraa) and with literacy campaigns, community development and general adult education.

If, as I take it, the immediate objective of this workshop (and all its concomitant research) is to enable the Kenyan Government to make more conscious and more informed choices in the field of rural development, I would hope that its more distant goal might be to help the Kenyan people as a whole to make these considered choices. Adult education is the only road to this goal.

(Because of pressure of other work, this paper has had to be very brief and to deal with principles only. An elaboration of the main ideas is to be found in Chapter 3 of "Economic Development in Africa" - Blackwell, Oxford, 1965, A Report on the Nyasaland Symposium of 1962.

One possible application of the principles is dealt with in administrative terms by the background paper by Mr. KIHUMBA of the Board of Adult Education).
CHAIRMAN: In this Workshop the question of expatriate experts has been up many times and I think in this discussion we should spend some time addressing ourselves to this problem. In fact this question has in recent days generated a very lively debate among the academics in Kenya. Do we need experts and of what ideological orientation. But before we discuss this, shall we go back to Miss Moraa's paper and discuss that?

MBITHI: On nutrition, modernization is a bad factor. We eat more bread, breast feed children less as we modernize. In fact we need a lot of adaptive research rather than nutrition research. This is an area where I think we need a lot of adaptive research to find out whether African ways of preparing other diseases as we move up the hierarchy of Europeanized foods e.g. Marasmus, decayed teeth, hook worms, anaemia etc.

MORAA: A lot of things are not good in modernization, for example I quoted being used rather than milk in the porridge for children and babies. Then we have new foods which are not as rich from a nutritional point of view as old foods like whole flour. When we are teaching our girls we tell them to teach the mothers for example to use whole flour rather than the other flours. We encourage mothers to breast feed as far as possible, also, although we know there is a tendency for the modern mother not to do so.

MUTISO: If one is going to worry about the policy on nutrition one must also think in terms of Government input into rural development. I get the feeling that the East African Industries programme in the rural areas covers about 38 districts at the moment. They are peddling stuff which may or may not be nutritious and I wonder if this is being controlled by the Government?

MORAA: The mothers are using Lactogen which has instructions with it as to use, but they may be using just one teaspoonful for a cup of water and so making the tin of Lactogen last a whole month or more. What we are trying to do is to get people who advertise these foods to go through the medical officers or the nutrition experts in the areas but so far they have just been continuing to go out into the district. We are trying to control people like East African Industries.

CHAIRMAN: Let us address ourselves to the question of dietary education. Who should actually do the education? Should it be done by the Government or should we allow commercial firms who have items to sell to go round and educate the people through advertising?

GACHUHI: Perhaps commercial firms should be warned that they must have a form of telling these people the right things, especially through the medium of advertising. Then children in the nursery and primary schools should be fed on the right foods, but then what do we do about making sure that the mothers know what foods to produce for them at home? What do we do about teaching the mothers?

OKELO-ODONGO: I heard Miss Moraa say that the question of scurvy was not such a large problem in the rural areas but I wonder whether somebody has looked into this and found out that it is not a problem just at the moment but might be a very big problem in the very near future. I wonder whether anybody in the Ministry of Agriculture has found out where the rural people get their vitamins from. Are they getting them from eating oranges and cabbages and so on. The vitamins are probably got from greens and fruit that are growing wild. But even the rural areas are changing and in many places these old fruits and vegetables that the children used to eat while minding the cattle, for example, are no longer there and in the very near future even the rural areas are going to have a problem not only of proteins but also of vitamins.
I have a few comments to make. To me point 'B' should have

The problem as I see it is that our women lack the necessary
knowledge of which foods to use, when, and for what. Some research
has been done at Makerere and it has been discovered that the vegetable
that has the highest protein content of all vegetables grown in
Africa. But to grow cowpeas does not need any advanced agricultural
know-how, anybody can grow them and since it is a vegetable with such
high protein content all people need to be educated in its use. Then take
millet, this is a cereal with a very high protein content,
seems to be going out of rural diets. It has been found to have a very
high protein content as far as cereals are concerned, people should be
educated about it so that they could bring it back to their diets.

If there are soya beans. I understand that in U.S. they have
exported soya beans as a major protein supplier to the point that
are making hamburgers out of them. In other words they are making
meat out of soya beans. I believe someone in Uganda is now
importing soya bean products to Kenya, but there is no reason why we
should not start the industry in Kenya. As I say, it is not the protein
content that are lacking but the knowledge about them. Also, on the
question of mineral deficiencies, there are other mineral deficiencies
in Kenya apart from iron deficiencies.

I do agree with the points mentioned but there is one point that
rarely mentioned in this kind of discourse and that is something has
become traditional, something which is used by the educated. Perhaps
we should have a new programme to de-educate the educated so that they
are not so surprised when they go back to rural areas. Because
of the great intercourse between urban and rural areas you find that
people return to the rural areas they tend to use European or town
foodstuffs and the poorer person in a rural area will always wish to be
able to eat that kind of food. That is why you have urban people eating
cereal bread etc. So this problem should also be explained to the
people so that they use the local foodstuffs when they go back
to the rural areas so that the poor man will continue to believe that the
food around him is just as good as food anywhere else.

In the rural areas we do not have scurvy and the children
admitted into hospitals with scurvy come from the urban areas but we should
exclude that we may in the near future have scurvy in the rural areas.
In the introduction of new foods it is likely that we will have scurvy
in the rural areas. I also stated that we have mineral deficiencies. I
expressed that. We are now having negotiations with the Ministry of
Agriculture about soya bean production. You have to have special plants
process soya beans and also bear in mind that the new foods that will be
from soya beans will not be as nutritious or cheap as the local foods
cowpeas and groundnuts.

Sorghum produce was discouraged by the Government in the 1950's
because it was supposed to ruin the soil!

There is the question of who would do the teaching. It seems that
what our nutritional problems are and that the need is really for such
problems to be injected through teaching. Those who produce the food
be educated to explain the high protein content of food etc. I would
suggest that the Government should intensify the education of nutritionists
and perhaps be able to disseminate the various ways in which our
foods could be prepared or cooked to give the whole value. I would even
go further to suggest a second recommendation that the way to disseminate
the information on nutrition should not only be through nutritionists but
also through school curriculm and also through the Government informa-
tion media. Thus through limited nutritionists the knowledge would be passe
to the greatest number.

KARUGA: There is the problem of income. It seems to me that one of the
things that can be incorporated into our agricultural policy is this idea
of specifying certain foods of high nutritional value which are consumed
by the mass of the rural and urban poor. This is something we can learn
from the Indian experience. Food items predominantly consumed by the poor
should be so priced that the poor can afford them, while at the same time
the farmers are paid a fair price - in other words, we need a pricing
as well as a production policy related to nutritional needs.

(The Workshop then discussed Dr. Gachuhi's paper)

The Pill and the Family

CHAIRMAN: First address yourselves to one of the crucial items, why do we
get contraceptives and to what end?

MALIMA: It seems that everything we say ties back to ideology and the role
of the expert. So, why on earth are people from the western countries so
keen to spread this pill? Our main concern is whether in all this there is
anything valuable and concrete to the problems on our hands. Positive
de-colonialisation calls for a critical appraisal of foreign package
solutions which sometimes have very little relation to the problem of this
country. Does it make sense to say that a rising population poses more
problems in education, housing, transportation, than a population rising
at 1%, and these are issues we must worry about ourselves and a nationalist
initiative must come through. Who manipulates whom? Can we define the
question of de-colonialisation? Why these people give us our
problem and we have to find a local solution to that.

CHAIRMAN: We must address ourselves to whether or not a population rise is a
problem in this country and if it is, we must ask whether or not we need pl-
from abroad to control the birth rate.

OLOYA: Many of us cannot help realising how serious in fact the problem of
high population growth is. If you look at the East African countries, many
of us would agree that maybe the problem is not yet as serious as it is in
say, India, but if we accept that the problem is already serious in other
countries, do we wait until we reach the same serious situation and then
start to do something? Should we not start to control this now and so
the path of our development? I would submit that we have the opportu-
to do so and should not delay.

HARPER: Surely the spreading of information about birth control is just
another example of increasing the area of choice, which fits neatly into our
original definition of development?
Most of the discussion on population policy confuses two issues:

First, the proponents of family planning (which in this case is synonymous with population control) assume that by attaining an individual goal of improved welfare, this is congruent with improved national welfare. This is a fallacy. Improving individual welfare per se need not lead to improved national welfare - at least not without some other measures to be taken to synchronize the two approaches. Secondly, the family planning of population control need not only be by the pill - why, for instance, don't we have legalized abortion, a proved efficient method of population control, witness the experience of Japan in the last 5 years, which has halved its rate of growth of population largely as a liberal application of all methods, without the hypocrisy of advocating some methods, which are known not to be as effective or not to hurt religious feelings of some churches. So one needs to be clear at what level of policy one is talking, and secondly we should pursue the policy without being hypocritical. But there is the point to my mind that improving the options to an individual family is a desirable goal.

Most of our local people here belong to a peasant family which constitutes about 80 per cent of our population. In my family we are but seven children, my parents have no old age security, no health services, and in their old age they depend on us so we provide them with the means of livelihood and various other protections that are necessary for them. The parents look at their children as their social security. If we want change their attitude by telling them fewer the better, what substitute are we going to give them? This is the key question to a peasant.

I am a little unclear about the logic of some of the arguments we have associated pill donors with neo-imperialism. Surely knowledge of the inter-relations between population growth and economic growth is widespread enough so that some malevolent outside power, who wanted to keep down a country such as Kenya, would deliberately deny us the means of controlling the rate of growth of our population. By doing so they would create that poverty, misery and unemployment increased in this country, and that our development effort was diverted away from the sort of investment programmes that would improve the wealth and welfare of our people and toward trying to keep up with our population growth. If some country wanted to prevent economic growth, industrialisation and the improvement of welfare in Kenya, perhaps its most rational strategy would be to deny us access to the means of controlling our population growth. This would be the exact opposite policy to that taken by the Swedes, who are currently giving pills to Kenya.

On the issue that Dr. Gachuhi raises, I strongly support the notion that we need research-based knowledge of the extent and nature of it and the problems it is going to cause. We need a policy that is adequate to do something about it. The policy is largely the product of pussyfooting foreigners who are so afraid of giving offence, so afraid of the political implications of what needs to be done that they propose a series of half-measures that are going to make no difference whatever. It is considered impolitic in certain circles to so mention population growth in connection with family planning.

What is now needed is competent, locally-based research on the issue, and initiated policies that are adequate to do something about it.
GACHUHI: With reference to the peasant families and their problems, what we do for their social security is very relevant to population discussions. We in this country must determine the extent to which we want to bring about a limited number of children being born per year because we have this knowledge. We must determine what other policies we need to make that will replace the traditional role of a son or daughter towards his or her family. The National Social Security Fund has no benefit for our parents, it is only of assistance to a few. If we accept the concept of population control we must do something about solving these problems for our people. We must have a national social security system which starts with the people who will no longer be supported by their children. There must be national solutions but solutions from outside cannot help solve our problems.

(The Workshop then discussed Dr. Ndeti's paper)

SMITH: Can I just try and answer Dr. Ndeti about expatriates. The crisis which an expatriate faces is not in relation to his own country of origin - as far as I am concerned while I am in Kenya my loyalty is to Kenya - but to identify what the interests of Kenya are and this is where I think most of us have a crisis and this is what leads us to pussyfoot as Mr. Hopcraft so neatly puts it and not to act as competently as we might. It is very hard to establish exactly what is meant by a Government policy, therefore how can we advise within the context of a policy which is not clearly defined. If we had clearer guidelines we could do a much better job as technicians within that framework. It is because the framework is not there that we get into trouble.

VAGNBY: You are talking about practical men. The reasons that there are expatriates here is simply (a) because you can come to a developing country, do some research and go back again to your own country and become a big man; (b) you can come here and get a higher social position here than you can get in your own land; and (c) one does not need to be here very long to find out where the problems are. When we discussed population increase the question was asked, what will it mean. I am here as an architect planner and I cannot see any risks if the population increases one or two percent more or less because there is land enough, resources enough, etc., but the whole thing is that if expatriates want to do a job in this way then they have to identify themselves with the political goal which must simply say that as an expatriate we cannot do anything other than advise. If we find that the advice we give is not listened to then I think that the expatriate has to make the point clear for himself, do we want to continue in this way or is it not simply a political problem. As far as I can see this is Kenya's own problem and I think the sooner the expatriates try to go back and simply accept that there are no acceptable solutions to this but only political solutions, then we are touching what Mutiso mentioned, that the whole thing is about the policy and the ideology and then we have only to accept that sometimes we can be used as a bad excuse. It is not enough to be annoyed that some civil servants are going around catching goats, but the question is how long shall we only observe what they are doing and accept it as it is not the time to say, if there are problems of this kind we shall say it so loud so that it can be heard and it is not us expatriates who should do this. Some of the local people who are here should say these things aloud, but how dangerous is it to say these things aloud? A lot could be done if these things could be discussed freely.
In my opinion the occupation of expatriate officers in a foreign country must rank as one of the most ego-inflating occupations known. For adjusting to the culture they have come to they expect the culture to adjust to them. One of the ways it shows particularly blatantly is in the fact that every expatriate makes little or no effort to train somebody else to do the job he is supposed to have. He leaves after two years without training anybody to take over from him. I would suggest as a possible solution a system of certificates of failure or success for the expatriate officer. One way it could be organized would be to say this man has arrived, made an expert in such and such a job and we now have an expert like him among our own people who he has trained.

In Nigeria, I am told, it was decided not to have any expatriates advise on the writing of the second Five Year Development Plan. Expatriates had contributed heavily to the first Plan, but when it came to construct the second, the Nigerians decided to do without foreign advice. The decision generated skepticism in the various international bodies which supply planning advisors, but a plan was produced and it has been described as quite competent. The Nigerian planners took the decision to do without expatriate advice because they wanted a plan written by Nigerians, for Nigerians. And, I am told, this plan is most effective since lower level officers know it is a Nigerian product, they take more interest in it than they would an expatriate produced plan. The plan may have technical shortcomings but these are offset by greater bureaucratic support. A good plan was produced and not one expert was involved.

We should re-examine ourselves on this. We are criticizing our policy makers when we criticize the expatriates. We do not appoint foreign experts as such we should not blame them. If we must criticize, we need to be more direct.

We have been talking about different things being imported from other countries but I think that we should also, as educated honest men, ask ourselves whether development in general is haphazard or whether it has a basis. In general terms, development should be based on the basis of experience whether theoretical or practical and so until we have created our own unique models for development we should not curse ourselves for importing useful experiences be it in the form of good foreign expertise or in the form of good and proven ideas. I know that countries differ widely in many aspects including the amount of resources and technological advances. Nevertheless this does not mean that as Kenyans we do not aspire to the fruits of technological advances sought by any other country in the world. We need to differentiate from other countries towards advancement and be limited to developmental strategies rather than to developmental theories. At this point it may be relevant for us Kenyans, or Africans if we want, to redefine our goals and also our sense of direction.

It is quite clear from the discussion that two things stand out. We are the ones who invite the foreign experts and allow them to mismanage our affairs. We participate in our own execution when we allow them to plan our development without stipulations or guide lines. This point is quite clear from the discussion. It is up to the locals to define their intention because ultimately reduce the need of foreign aid or experts. The more
keep them among us the more we actualize the psychology of dependence.

If it identifies with our 'felt and expressed needs. In this case our identity must remain very clear or accept a fait accompli.

The second point which comes from the discussion is the diffused element in our history which may vitiate the possibility of our identity.

Our execution cannot be properly understood unless we do something about the colonial input in our historical background. It is just tragic to find that the goals and aspirations of some developing countries identified with the current development of their colonial masters. In other words the current images of former colonial powers realize development and progress that must be imitated by some of our colonies. This means that the developing countries lack native imagination and hence perpetuate the psychology of dependence. We clearly define our identity and therefore our ideological position we will remain the most abused people ever. This second point is quite clear in this workshop.

I COMA: Before stopping, let me sum up these three papers. On the question of nutrition we have a problem of research and our policies in this respect should emphasize research and include the programme of education both in the common man and the educated. On the question of family planning it is clear we do not know whether we have a population problem or not and this is another area where we need research to find out our position vis-a-vis the rising population. On our policy for family planning we need alternatives, we cannot depend on one item of contraception, and probably what would be emphasized is legalized abortion which might be more relevant than imported contraceptives.

On the question of rural transformation it is clear that there is a consensus that this should be regarded as a local problem to be solved by the local people and they are the people who should first and foremost be involved in transforming the rural areas. It is clear that we need only those expatriate experts who can identify themselves with our problem and sympathise with our political goals.
SESSION 6: June 2nd 4.30 - 5.00 p.m.

THEME: "Discussion of the Day's Proceedings and Implications for Future Research.

CHAIRMAN: J. Coleman.
AIRMAN: The following points have emerged today:

1. Agrarian structure:
   (a) Large versus small farmers.
   (b) Migrant labour force and unemployment.
   (c) Land market and the landless.
   (d) Agrarian technology.
2. Urban-Rural dichotomy.
3. Vitality and significance of traditional forms.
4. Educational innovation and transformation.
5. District level structures.

TUM: The real difficulties are unemployment and helping the small-scale farmer. The possible political approach to tackling the problem, if only to arrest an escalating trend of making the disadvantaged farmer even more disadvantaged, might be to devise some kind of credit scheme or facilities. There are a number of institutions now, in which the Kenya Government has a controlling or significant share. If this is seen as a concrete problem then some banking institutions in which Government has a share should decide as a matter of policy to let the small farmer have credit. Another suggestion I would make is to encourage co-operation. In some way a number of these small farmers should be encouraged to come together and farm on a more profitable basis. In Zanzibar they have large rice fields which are ploughed by the Government on a commercial basis, and the farmer and his family can plant as much rice as he can look after himself with just his family helping him. This is a possible solution.

CUTTER: Many small farmers are part-time farmers. A matter of research interest is to find out what they do with the money they get if they are employed. Preference seems to be given to the education of children and investment in the farm is very much a secondary choice, yet the prospects for returns on these two investments should favour investment in the farm. Secondly, what happens to the farm when the farmer is away working in the town? One farm we saw appeared to have suffered badly as a result of loss of the management input while the farmer was away. There is a need for further investigations of small part-time farmers and how they allocate any money they do get between education and farm investment.

KAMA: One of the problems that has emerged in administration of credit is how to recover payments from widely scattered farmers. The problem of default is important, and it can saddle co-operative unions and banking institutions with big debt problems. The whole issue of rural credit cannot be separated from possibilities of creating viable institutions in the rural areas, whether they be co-operative unions or something else, but decision as to who gets the loans should be made at the village level. If the marketing of crops and these institutions all tied to the problem of agricultural credit we might move towards the solution of the rural credit problem.
SMITH: With reference to Dr. Gwyer's remark, it could well be that most farmers looking at the situation think they will do two things by investing in education rather than on the farm; (1) they are making their own security much more sure because as Dr. Odede has suggested, the chance of having a son with a University education earning a fabulous salary might give them more security than having somebody on the farm; and (2) farmers themselves realise that with their own managerial ability and grasp of technology, the investing opportunities open to them are not very great. Farmers cannot identify profitable opportunities on their farms.

CHEGE: I think the Government may have to have a drastic change of policy to get results. First there will have to be crops and animal enterprises which may have to be removed completely from large scale farmers and given to the small scale farmers, for instance small farmers cannot expand on pigs anymore because they cannot get new quotas or quota increments mostly because large scale farmers have excessive quotas. Secondly, poultry and eggs should be completely turned over to the small scale farmer. I do not think that this would lower total production as such. Thirdly, this could probably also be applied to dairy farming. Poultry, pineapples and passion fruit could be turned over completely to the small scale farmers. Such things have to be done if there is going to be any immediate rural improvement.

CHAIRMAN: What are the research implications of that suggestion?

CHEGE: There is no need for research to be made to establish whether small farmers can keep up output because they have been doing it in the past. But maybe with things like dairy or tea there could be a necessity for research.

MBITHI: On this question of agrarian reform there is a statement that Kenya does not have a land policy. We do, but you cannot separate the land policy from the importance of land use. If you take the high potential areas or the Masai ranching areas, there are many solutions. There are the cotton block schemes and ranching schemes. In the high potential area we have had land consolidation. A land policy does not have to focus only on the issue of land distribution and we have our land policy.
erve can be said to have many land policies. The problem is how do you give these policies an identity, a Kenyan identity? How do you assign collective meaning to what each feels about land. Perhaps the aggregate Kenyan policy is inherent in the land-use solutions which aim to mitigate Kenya's land problems.

On the question of large versus small farms, we have not enough information on the efficiency of small and large farms in certain regions or Kenya. Ultimately the decision to divide the large farms into small farms will be political, but we do need a lot of research on a regional basis so that we can give the politicians the basic knowledge of whether it is good for the country, for the total output or income, to divide the large farms into small farms or not and under what conditions small farms will work. We have to state this very clearly. It seems to me that the politicians do not know if this will harm the country or not. This must be research in each individual region.

I would not agree with Mr. Chege for some of the products. On milk and poultry there are no restrictions on production. The problem with Uplands & pig production is the pricing policy. If somebody would sort out the pricing policy for bacon and intensively fed livestock in this country there would not be this problem. Pineapples are a different case, where Kenya has opted to have an international organization in charge of processing a commodity grown in this country. From the firms private point of view they are only concerned with producing these pineapples themselves. Presumably an alternative to the present system would have been for the Government to set up a Development Authority with the responsibility of encouraging small holders to grow pineapples which the Authority would then sell to the factory.

One of the problems we are touching on is that we not only have too much food but a mis-allocation of this food. When we talk of poultry or pigs etc., we always talk about international markets. Can we not teach our own people to grow pineapples, eggs, pork, etc.? In Tetu there is a scheme for every pig you sell you must eat a kilo of pork. Our people are beginning to like pork. Our people are prepared to be active in this market.

If we do what is being suggested it would be necessary to co-ordinate, for instance, 1,000 chicken growers. Co-ordinators and managers of such activities will become an elite structure. It will be necessary to examine the evolution of this elite with an intention to find out whether distribution of wealth to the smaller farmer takes place.
NDETI: I think we are going around the question.
The fundamental question is what do you do with the product
that comes out, if you produce more what do you do with it?
Who controls our market? I believe the issue is not how much shall
a farmer (small scale or large scale) produce but rather where
will he sell whatever he produces. Our economic development
has been geared towards European markets or former colonial powers.
We know we cannot compete effectively in this market and yet
because of our former colonial ties we still believe our
economic redemption lies with European purchasing power.
Until we control the markets our economic development will
always remain in a vulnerable position. No matter what formula
of production we come up with for either our farmers or manufacturers,
we still remain with the fundamental question of markets. To me the
creation of African continental or regional markets is the ultimate
key to our economic survival. The African countries should make more
efforts in opening trade and communication facilities among themselves.

KARUGA: We are confusing the issue if we think in terms of restric-
ting the possibilities of marketing open to any one farmer. The
problem is not the fact that pineapples or what have you, are not
really consumed by Africans. The question is how far are the African
farmers benefiting from the consumption of these things now. You
have to think in terms of structural changes. We are interested
in meeting the demands even if it is for carnations in Germany.
Surely the real problem is to focus on how best to make this man
benefit most in meeting this demand. You want the African producer
participating as fully as possible in the world economy and you
cannot do this by restricting the range of this produce or market.

NDETI: I recognized the points that the previous speaker has made
and indeed they are very important if seen in the light of 19th century
laissez faire economy of Spencer and Adam Smith. But we are living in
the 20th century a fact which the speaker does not seem to realize.
If he did he would acknowledge the fact that, at present time the world
economy is under the control of those who are ahead in both science
and technology. In order to tighten this control of world economy
capitalist countries have further created transnational companies which
in my opinion present the greatest threat to economies of developing
countries. These companies have permanent research institutes which
provide the latest ideas and techniques of managerial science as well
as the latest technology which reduces the cost of production
considerably. I am rather perturbed by the fact that the speaker
still believes Kenya or any developing country with limited science and
technology can compete in world market. Even in cases where a country
has an edge in breaking into some markets, like the recent attempt
by an East African country to enter her breakfast cereal product into
the European market, faced a fatal blow when the negotiations for
setting the plant were attempted. Also the majority of Kenya's manufac-
goods cannot compete with similar foreign products. I think it is
the height of absurdity to talk of free markets and competitive prices
in the world of transnational companies and their monopolies.
What we need to consider seriously is the creation of domestic
and regional markets. Our economic independence lies in
...this direction when we take into account our level of science and technology. We must get rid of the colonial hang-up which tended and still tends to gear African economies towards European or capitalist countries. The domestic and regional market will be ideal for an intermediate technology which in my opinion is the most suitable at the level of our socio-economic organization. For Africa, I believe, economic independence will come when we have created a continental market as the historical experience of America, Russia and China have shown. Europe with E.E.C. is trying again to prove that the concept of domestic market is the only viable alternative in our times. The mercantile and capitalistic ideas which the speaker seem to count are totally unrealistic at this time and age.

CHAIRMAN: Let us now move on to these other interesting propositions on migratory labour. Are those who are migratory prone aware of the opportunities?

OKELO-ODONGO: The migratory labour may come to an area not because the employment there is high. When they move to town, when they cannot get jobs we have to move them back to where they came from so this is just one fact of it.

HARPER: Could one not try to isolate factors which in African society indicate sociological disadvantages and then look at family units where (a) the chief of the family stayed at home and ran the farm and (b) where he has gone to work elsewhere, and try to make some assessment of its effect whether it is good to encourage it or not. You cannot do anything until you discover whether there is a bad effect or not.

OLOYA: This is another area which is related to this and this is that they tend to come to the urban areas for only a short time and then return. So this is something which may require further investigation.

CHAIRMAN: What about agricultural technology and its relation to the question of the landless, unemployment and scale of the farm?

MUTISO: There is some work going on in Latin America and it seems to me that one of the assumptions which filters down through most of our agricultural policy is that when we talk about servicing the small farmers we have never looked at developing technology which is related to this problem. Some of the work being done in Latin America points out that there is probably greater pay by local adaptation.

CHAIRMAN: With an Engineering Faculty it would seem there would be a good opportunity here.

CRAFT: There are certain technologies which would create a demand for capital goods that the local economy could supply other than those technologies which involve purchased goods from overseas which are very difficult to provide spares for. Investigation into this area and the sort of development process which employs the certain technology could have a linkage effect to capital goods industry that is feasible in this country.
GWYER: We seem to be talking about technology in a limited way and the most important technologies from a Kenya point of view are those that emanate from the agricultural research stations rather than those involving machines which may displace labour.

MUTISO: Yes, but that introduces more problems. If you get the new crops how are they to be marketed and where?

GACHUHI: This reaches back to the middle man problem.

OKELO-ODONGO: The tractor is too big in many places in the rural areas and too expensive and again the plough pulled by the ox is not very successful so there needs to be co-operation between the engineers and the farmers.

MBITHI: The problem is passing on the information from the research stations to the farmers. Perhaps we need to invite research station officers to meetings like these where they can share with us the problems of rural development and how we all contribute to their solution.

ASCRoFT: There are two interesting constraints, one is land and the other is technology particularly the non-machinery technology. There is nothing one can do about the size of the land and the problem is that this limits the generation of ideas if you tell them they cannot do much on two or three acres of land. And most of the extension agents try not to visit anybody who has less than four acres. The bottleneck that I see is one of new ideas, of generating new ways of using four acres of land or less more effectively. We tend to think of technology as being either machinery or things that have been developed at a research station. Yet the most important part of technology, the means by which you transfer that information from the research station to the farmer, has not been discussed.

GACHUHI: There is a tremendous amount of research being carried out but nobody gets to see it.

OLOYA: I wanted to emphasize the need for a workshop for research workers in the research stations and Universities and the Government extension services so that they can exchange their ideas and pass on the extensive problems. I do not agree with Mr. Okelo-Odongo that ox-ploughing is no good. It is definitely good in certain areas.

MORAA: I feel sometimes you may carry out research and have results and ways of transmitting the knowledge to the but there is still the problem of marketing.
CHEGE: On the question of the ox-plough, it has been reported that India has developed one that requires one ox, and just one operator.

CHAIRMAN: Perhaps Mr. Smith would elucidate the point he brought up on the urban-rural dichotomy.

SMITH: My thoughts on this come from the results of the Nairobi urban study where it does appear that a substantial number of people who come to Nairobi can earn at least as much as they would in the rural sector. If you assume that this is actual earnings and not transfer payments, it suggests that the productivity of these people is fairly high. The question is whether there should be a positive policy of settling these people in urban areas as opposed to resettling them in rural areas. There should be enough material now to sort out the costs of re-settling people in urban areas as opposed to re-settling the mass of people in rural areas. I am not saying it is an either/or question, but I do think that a more positive approach to urbanization might take some of the pressure off the problem of trying to find viable solutions for everybody in the rural areas.

THIMM: If we try to increase production in the rural areas through credits and more inputs, we have to have effective demands for the products and this demand can come from urban employment. If we increase production it has to find a market in the urban areas. So we need a policy to increase employment in many other fields, not just rural.

There is one other point:
It seems to me that our discussion centered at the end around the efficiency of the expatriates and I do think this is really a task for Institute for Development Studies, to start studies on the efficiency of the expatriates in this country. It may help to get our thinking a little bit more to the point. Is it just because they are expatriates that they are more or less efficient than local people, or are there some other constraints in the system? For example is the Government of Kenya giving enough counterparts to the expatriates so that they can pass on their skills to them? I.e., the Government of Kenya should not ask for expatriates until they can attach enough counterparts to these people. For the sake of this country we need a lot more information on the role of expatriates in the development process. Let's get started on such studies.
GACHUHI: One of the difficulties that we seem to have in the area of research is over emphasis of the differences in approaching the urban or the rural and perhaps we should try to bridge this gap. Our urban sociology is almost zero at the moment.

ASCROFT: The urbanization here in Africa generally is not the same as urbanization in the U.S.A. Almost every single African in Nairobi has direct and current ties with the rural areas so there are many reasons for studying the linkage as there are Africans living in the urban areas.

KARUGA: This whole area needs to be studied. There is the phenomena around Nairobi of villages which serve as dormitories for the Nairobi labour force. There is a great deal of transaction from the urban to the rural and from the rural to the urban and I guess that 90% of the loans mentioned in my Paper get used in the urban areas to create industries and this is a link which we could begin to explore.

VAGNBY: I strongly support the point of view that we have to link these two together, but I think that you then have to make it very clear for the investors what the results will be because as far as I can see there is only one reason why there are investors in Kenya and it is simply that the investor is able to bring out a big amount of profit. If we are going to link the two then it will also mean that some of the investors will have a decrease in profit and if they are not made aware of this there will be a situation where the profit will not be big enough. This is also linked with the policy making, for example the Tripartite Agreement.

MALIMA: It occurs to me whether this is appropriate and I am particularly interested in the issues of priorities. We should be able to provide answers to such serious questions. Most of these problems are the products of our own actions. 15 years ago the trend was that Africans did not come to the cities except to buy a bicycle. Today it is the other way round, they come in such large numbers that there is no employment for them. The issue is not urban rural dichotomy but urban rural interaction.

CHAIRMAN: We will have to bring discussion to an end as we have already gone well over the time allotted.
SESSION: 7  June 3rd 9.00 a.m. - 10.00 a.m.

THEME: "Rural Water Supplies"

CHAIRMAN: G. Mutiso

Background Papers:

1. Issues in Development Research: The Case of Water In Kenya;

2. The Case of Rural Water in Kenya:
THE CASE FOR RURAL WATER IN KENYA

B. Jakobsen, J. Ascroft, H. Padfield
Institute for Development Studies
University of Nairobi

The present study seeks to determine some of the major effects of reticulated water for human and animal consumption in a high rainfall potential, high population density area. It is basically an exploratory study designed to investigate whether or not there is a basis for expecting such positive effects as enhanced crop and livestock yields, expanded crop and animal husbandry operations, improved economic and social welfare standards, as well as for expecting such negative effects as loss of income from water haulage. To this end, the Zaina Reticulation Scheme, situated in Muhoya's location, Tetu Division, immediately to the west of Nyeri Township, was selected for study. A matching control area which had no reticulation scheme was selected from the same location to serve as a comparison area for the Zaina scheme.

The study came about in response to problems the Ministry of Agriculture faced in its rural water programme. The Ministry wished to allocate its limited resources on the basis of objective criteria that could be established to determine priorities for the provision of rural water supplies. These "objective criteria", it was felt, could perhaps best be developed by determining the major effects of a rural water scheme with a view to placing schemes in areas most needful of these "major effects".

BACKGROUND TO THE STUDY

In 1961 a rural water scheme was installed in Muhoya's location, Tetu Division, Nyeri District of the Central Province of Kenya. The Zaina pipeline scheme was designed by the technical branch of the African Land Development Board to provide:

1. The present study is part of the Tetu Special Rural Development Programme and is intimately linked with two other studies, "The Tetu Extension Pilot Project" (Ascroft et al., 1971) and "The Problems of Amalgamating Co-operative Societies: The Case of N. Tetu" (Karanja, 1971) both of which also included Muhoya's location.
60,000 gallons of water daily to 4,900 people living on 3,100 acres in Chief Muhoya's location immediately to the west of Nyeri township, by abstraction from a tributary of the Zaina River high up in the forest of the Aberdares. It was installed under the supervision of Mr. Classen between April and August, 1961, and cost approximately £23,000 of which the Board provided £6,000 by way of loan. Water was reticulated to a total of four villages, four school, location centre and market and 639 smallholdings. A part of the cost was paid for by the World Health Organisation including the falling main, a purification plant, aqua privies and washing stances. The balance of the money has been found by the A.D.C. of Nyeri and the local people. Loan charges will be met from a water rate (Ministry of Agriculture, 1962, p. 89).

The Zaina scheme is now in its tenth year of operation. Efficient time, therefore, may be deemed to have passed to allow many, if not all, of the major effects stemming from a piped water scheme to reach maturity. This fact, coupled with the fact that Zaina scheme is located in Tetu Division in which research work in connection with the Special Rural Development Project was already underway, made it appropriate to select the Zaina Reticulation Scheme for exploratory research to evaluate the effects of reticulating water to a high potential, high density area of Kenya.

VIEW OF CURRENT WATER DEVELOPMENT VIEWS

Investment in water development is enshrined in Kenya's Government Development Plan for 1970 to 1974. The plan acknowledges water to be essential for personal needs and production activities, but points out that treated water supplies are available almost exclusively to urban populations only. Much time is being spent in rural areas by women and children in water haulage, diverting human energy away from other more productive tasks such as cultivation, animal husbandry, more intensive child care, and necessary assurance. The plan goes on to state:

"Providing water to rural families by conveniently located piped water points is estimated to release from one-half to three-quarters of the time now spent on the task for use in more productive activities. Water made available more easily and in larger quantities could significantly raise the level of production per family realizable from small farm cultivation and animal husbandry. The provision of rural water supplies is accordingly regarded by the Government as a fundamental condition for rural development". (Development Plan 1970 - 1974, p. 368).
The Development Plan is not overly detailed in specifying what is meant by "more productive activities", nor does it make clear whether significant raises in production from cultivation and animal husbandry are to be expected from all rural water schemes, regardless of the ecology and potential of an area. Klasse-Bos (1969) attempted to spell out the expected benefits of rural water schemes in greater detail. He foresaw several kinds of benefits, which he categorized in the following way:

a) **Direct economic benefit.** This should arise in major livestock producing areas. A permanent water source near or on the farm will permit an increase in cattle (especially in grade cattle) and improve the production of milk and beef from the existing herd.

b) **Indirect economic benefit.** This will include the time released from water carrying by the farmer and his family. The actual benefit will depend on the farm size, the type of crops and the availability of labour to carry out essential tasks especially at peak labour requirement periods. Other important benefits may include better animal husbandry practices (sic) such as early planting and better weed control. In certain areas there will be a saving in money paid out for famine relief.

c) **Health benefit.** The new supplies will be more reliable and free from health hazards. A better health standard may increase the work capacity of people and hence production and income.

d) **Social benefits.** There are a number of benefits varying from the personal relief from the heavy job of water carrying to the collective benefits out of decreased urbanization, political stability more balanced development and urban areas. All these benefits are very difficult to assess scientifically. However, any research programme into the impact of rural water supplies has to take these into account too.

2. Klasse - Bos is an economic planning officer in the Ministry of Agriculture under which the Water Development Division operates.
Klasse-Bos, however, does not clearly indicate whether differential benefits are to be expected for all water schemes under differing geographical, ecological, climatic or social conditions. Left unsaid, therefore, is whether the same benefits will accrue from water schemes in high versus low potential areas. Carruthers (1969) takes up this issue by suggesting that differential primary effects may be expected from areas in different ecological zones depending upon whether they are high or low potential, with predominately welfare effects being expected from the high, and economic effects from the low potential areas.

To Carruthers, a water scheme has economic effects if it results in "larger increases" to the national income. This implies that economic effects that are only felt at local (subsistence) level are of no consequence. Yet, a farmer's income contributes to the national income mainly when he is producing a surplus to his own subsistence needs. Therefore, for these large additions to the national income to ensue, it is necessary to select only areas in which farmers are already producing a surplus. That is, if reticulating water to an area has the primary effect of raising farmers from a very low subsistence level to a much higher subsistence level but not to producing a surplus, then, in Carruther's view, such an area, however deserving in terms of welfare needs, should not be selected because it will not produce large additions to the national income.

We disagree with this notion because it tends to benefit a small minority of 'haves' at the expense of the majority of 'have nots'. Rather, areas should be selected for water development based upon maximizing local socio-economic effects regardless, at least in the short run, of whether they contribute substantially to the national income.

About possible benefits from water development in high potential areas, such as the area where the present study was carried out, Carruthers states:

"In a densely populated area such as the upper cultivated slopes of Mount Kenya or the Aberdare range where family incomes are comparatively high, the main benefit from piped water may be social - less arduous work for the women and children. The small farm size might preclude gains from increased labour availability or scope for increased numbers and improved breeds of cattle". (1969, p. 4).
A most common failing of many students of international development may be summarized in the term 'single factor determinism' which is defined as a tendency for an individual to regard development or the lack of it, in a given social system as being a function of one all-encompassing, all-explaining phenomenon. For the most part, such thinking is naive in the extreme and may usually be taken as evidence that the erring individual is ignorant of sociology and therefore treats all members of a social system as if they were identical interchangeable parts in an assembly plant.

For example, Carruthers regards areas of high population density with comparatively high incomes (such as the Zaina scheme area) as being unlikely to benefit production-wise from water development due primarily to lack of land to allow for expansion. This notion presupposes two very unlikely conditions; 1) with few exceptions, all the farmers in a given high density area are making maximum and efficient use of all of their available land; 2) there is little or no likelihood of any farmer or group of farmers in the area being able to acquire more land by whatever means in that area. Whether any area in Kenya exists where these conditions are largely met is an empirical question. But given the overwhelming weight of evidence that most farmers in Africa are little more than subsistence farmers given to inefficient under-cultivation of their arable lands, it is more reasonable to expect that for some people (probably a minority), land is a constraint whereas for others (likely the majority) other factors, a primary one of which may well be lack of agricultural knowledge, may be the main constraints. And when the price is right, there will always be those who are willing to sell some or all of their land to those for whom land is a constraint. The problem, therefore, may not be constraint of land preventing expansion as much as it may be expansion dispossessing some people of their land and causing an influx of potential slum dwellers to urban areas.

Carruthers distinguishes between two main types of areas for water provision, namely range areas and arable areas, both of these he divides into sub-types based on such factors as payment of fees and whether social or economic benefits or both can be expected under specifiable conditions. Whereas Carruthers argues that we expect differential effects from small water schemes depending
rather that within each stream will also be groups upon whom
effers water effects may be expected.

THE RATIONALE FOR STUDYING WATER DEVELOPMENT

The Zaina Reticulation scheme which we selected for study
does not represent the full range of ecological variation that
are found in Kenya. It is an arable, not a range area. All year
stream originating in the Aberdare are in fairly easy reach of the
majority of farmers in the area. Tetu Division which includes the
Zaina area, is relatively high potential (in terms of rainfall) and
high density. Mixed farming (cash crops, grade milk cows and
pigs) characterizes the main types of agricultural enterprises.
Therefore, we do not expect the introduction of a small water scheme
to have revolutionary effects upon the Zaina community. Rather, we
expect more modest, and perhaps in some instances, longer term effects.

On the basis of this, we hypothesize that small scale rural water schemes may have a variety of impacts in an area
such as Zaina, they may effect the social life of a person, his culture, health and general welfare. They may effect the economic
life of the individual, but these economic impacts (both on the local and the national level) are likely to be either slight or long term
in the type of area we are studying. The main objective of the present study, therefore, is to determine whether these effects are evident in Zaina, and if they are, to assess the degree of impact that each of them may have upon different levels and groupings in the Zaina community.

THE EXPECTED EFFECTS OF WATER RETICULATION

The general objective we have formulated may be profitably
reated by dividing the likely effects of a rural water scheme into two
categories, (1) direct and (2) indirect effects. The distinction
ent between direct and indirect is made basically along lines familiar to
the applied statistician who speaks of direct effects between two
variables, versus the indirect effects between two variables brought
about by the intervening effects of a third variable without the
existence of which there would be no effects between the first two
variables. For example, relief from the labour of hauling water is a
direct effect of bringing water to the homes of those people
previously carrying the water. The linkage is simple and direct,
bring water and people are likely to stop hauling it from long distances. Adopting grade cows, on the other hand, is an indirect effect because the mere act of bringing water to a home does not automatically presuppose the adoption of grade cows. There are other important factors which intervene, any of which may inhibit the adoption - the individual might have insufficient land, or capital, or know how, or inclination. Bringing water to a home and adopting grade cows are only linked to each other via a third factor. The linkage is therefore indirect. We may also expect that some of the direct and indirect effects of a small reticulation scheme for animal and human consumption may be short term, while others may need longer periods of time to become manifest. It may further be expected that some of the direct/indirect, short term/long term effects may have predominantly social welfare connotations while others may be more of an economic nature. Finally, it may be just as well if we keep a weather eye out not only for positive beneficial effects, but also for negative deleterious effects of reticulating water to an area such as the one we propose to study. The discussion which follows, then, spells out in greater detail the universe of our expectations in terms of whether they are direct/indirect, short term/long term welfare/economic and positive/negative. The study, however, is not designed to measure all the multifarious effects that can be expected. Thus, we shall also point out in the following discussion which effects we intend to measure and which we do not.

The Direct Effects of Reticulating Water.

There are only two direct first-order effects to be realized from reticulating water for human and animal consumption. First, water per se becomes more readily available close at hand, in larger quantities, and in relatively purified form. Second, the time released of those people who are engaged in hauling water, sometimes from long distances, becomes available for application to other pursuits. All other effects that may be expected as a consequence of introducing a small water scheme in a rural area come as indirect second-order outcomes of these two direct first order manifestations.
Direct Effects Associated with Water per se

Bringing water to a point close at hand in a readily available quantity opens up many possibilities. Not every farmer can or will take advantage of each of these possibilities. Indeed, some farmers may be inclined towards one, others towards another, and still others to maybe several. Listed below are the major alternatives that become possible as an indirect consequence of bringing water closer to the household.

Adoption or Expansion of Livestock Activities: Those farmers who previously felt water to be a crucial constraint preventing them from either adopting the keeping of such livestock as grade cows and pigs, or expanding their activities in this regard, may now find it feasible to do so. We aim to gather data addressed to this proposition.

Animal Health and Welfare: Those farmers who previously had to walk their livestock long distances for water, thus not only exposing their livestock to tick-borne and other diseases but also diverting energy away from milk production, may now expect improvements in their livestock by avoiding these hazards. Furthermore, water is now not only available for livestock around the clock, but farmers are now able to practice maximum breeding control. We propose to gather data about milk production but do not feel competent to gather data about animal diseases.

Crop Husbandry: Those farmers with coffee may now feel encouraged to spray their crops against pests and diseases since the large quantities of water required for mixing with the preventative chemicals is now readily available. Furthermore, small scale irrigation of vegetable gardens, especially around the water point, now becomes feasible all year around, we shall gather data addressed to small scale irrigation.

Human Health and Welfare: Purified water obviates the problem of debilitating water-borne diseases such as bilharzia, dysentery, cholera and such like, all of which deplete energy which could otherwise be available for other productive pursuits. The presence of a ready supply of water also encourages better standards of personal and household hygiene such as cleaner clothes and utensils. We do not propose to gather data on the health aspects which is really the province of health experts.
Indirect Effects Associated with Time Released

Releasing time previously spent in hauling water, opens up many alternative ways of using that time. Different people are likely to spend their released time in different ways. That is, there is very little likelihood that all of them will divert all their released time to just one activity such as shamba work. Indeed, there may be more reason to expect that for many people, their released time will tend to become absorbed into their other on-going activities in ways that one can no longer account for easily.

Household Welfare: Some people may apply their time released to such household chores as intensified child-care, house cleaning, food preparation, and the cultivation of a small vegetable patch, thereby contributing to dietary improvements. In the case of time released for housewives, more time becomes available for them to spend with their children and husbands. In the case of time released for children, more time becomes available for homework and play. Information based on participant observation will be presented in regard to these effects.

Formal and Informal Social Participation: Like people all over the world who place a high value on leisure, it may be expected that many people will apply their new found free time entirely to rest and leisure. Some people may use their time released purely on some relaxing, undemanding activities such as visiting neighbours and friends, listening to the radio and such like. Others may feel inclined to use their released time by participation in formal social organizations such as Maendeleo Ya Wanawake, self help activities, co-operative societies, school boards, church meetings and the like. Data will be gathered particularly with reference to formal social participation.

Farm Welfare: Some people will tend to invest their time released in more intensive shamba work and animal husbandry. Certainly, applying their released time to small vegetable patch cultivation may become feasible for some. For others, home industries such as basket weaving and embroidery may also become feasible. For still others, the time released may be employed in road side hawking vegetables. Data will be gathered on the question of more intensive agricultural activities.
Possible Negative Effects of Reticulating Water

There is a tendency for most people, both in government and outside, to focus only upon expected benefits of water. Yet there are possible deleterious effects that may be expected from introducing a rural water scheme. First, as is the case with most water schemes, somebody has to pay for it, either by way of repayment of the loan which enabled the scheme to be built, or by way of fees to continue its maintenance. The present policy is for that 'someone' to be the recipient of the water. He pays water fees. Second, those people previously engaged in hauling water for others as a paid occupation, are thrown out of work by the introduction of a water scheme. That is, the water scheme represents to some extent a capital-intensive distribution system which is replacing a labour-intensive distribution system. Benefits, therefore, may be differential from one group of recipients to another depending on their socio-economic level, as shown below:

1. An upper socio-economic group whose time is too valuable for a great part of it to be spent on water hauling and who, therefore, employ women and children from the neighbouring farms and villages to supply them with part if not all of their water needs.
2. A second group of middle-level households whose time is less valuable and therefore haul all the water that is needed on the farm themselves.
3. The lower socio-economic group, consisting perhaps of small holdings or even landless households who look to water hauling as one of their sources of income.

The sociological implications are, assuming that fees have to be paid, that a water scheme is likely to benefit these three groups differently.

The first group of farmers will get more and cheaper water to their farms, and because of their socio-economic position, are likely to make good use of it. The second group will get water to their farms, for which they will now have to pay. The third group is the group that will not automatically benefit from the water scheme. Some will now have to pay for more water than they can use while others may lose their jobs as water-haulers to the benefit of wealthier farmers.
Thus a rural water scheme which is to be financed and maintained via fees from recipients may actually have the immediate consequence of increasing the cost of living of the lower income groups. In point of fact, if the fee assessment is such that everyone pays precisely the same amount in water fees, then the curious situation arises whereby the lower socio-economic groups with their lesser needs and uses for water find themselves responsible for subsidizing the upper income groups with their greater needs and uses. And in those special cases where the member of the lower income group who is subsidizing his more prosperous fellowmen turns out to be an ex-water-hauler who is now unemployed, then the social injustice of it becomes particularly poignant.

To benefit all groups of the society it is necessary to know about the existing social structure, to realise which additional inputs are necessary for an innovation to benefit all layers of a population and thereby avoid starting or intensifying a proletarization process of the less fortunate members of society.

Changing Patterns of Land Tenure: For some people, land will be a constraint which may become particularly evident as a result of water becoming more freely available. For such people, an obvious solution is to buy additional land from others who are willing for one reason or another to sell part or all of their land. Thus, some farmers are likely to become landless and potential candidates for slum dwelling.

We have been wary of allowing ourselves to fall victim too readily to the simple (or simple-minded) notion of single-factor determinism. It is probably wrong to expect one major benefit, like increased per capita incomes for most farmers, to result from a small reticulation scheme. The possibility of increased incomes is only one of many possible factors and it may apply to only one of many possible groups of people among the water recipients. So, we favour the notion of multi-factor determinism whereby some people may enjoy economic benefits, others welfare benefits, yet others both, and still others might suffer loss of benefits.
METHODS OF THE STUDY

The present research undertaking is an ex post facto field study. In ex post facto research, one is studying an event after it has already occurred. Thus, we are studying the Zaina Water Scheme after it has been in existence about 10 years and are looking backward in time to see what the effects have been. However, we do not know what the conditions in the Zaina area were before the introduction of water so that we cannot be certain that effects we may notice are due to water or to other inputs. To estimate these “before” conditions, therefore, we have selected an area in the same location which matches the Zaina area in most respects - in ecology, farming pattern, social structure, administration, in everything except the presence of piped water. We can now compare development in these two matched areas and conclude with some confidence that differences between the two areas in those respects likely to be affected by the presence of piped water, are indeed due to the presence of piped water. That is to say, we have a study area, the Zaina area, the control area, the comparison area.

The Sampling Method

All farms in Tetu Division are registered with the Land Registration Office in Nyeri. Thus, the list of farms in the registration office constitutes a reliable sampling frame. From this frame, "systematic random sampling" which consists simply of taking every nth sampling unit after a random start, was used. However, the registry does not yield a list of landless villagers. These lists, containing the names of families who live in compact village agglomerations (known as "emergency" villages), are to be found in the Chief’s Camp, Muhoya’s location. Sampling units were selected from them using systematic random selection techniques. A total of 173 households were selected in this manner.

In Sample Population and Area

There are two settlement patterns in Muhoya’s location; (1) farms, and (2) villages.

Farms: The farms are scattered evenly over most of the area, each farm consisting of one or more houses or huts. The farming pattern is mixed crop and livestock farming. Most farmers grow most of their subsistence foods such as maize, beans and potatoes. A fair number also grow cash crops such as coffee, tea and pyrethrum. In addition they keep cattle which are either pure grade cattle or upgraded local cattle. Farm
incomes are in some instances supplemented by one or more members of
the household being in regular, part-time or seasonal employment.

The average land size available to a farm-household
(excluding the villagers) is 7.2 acres. Most of the households have
male household heads between the age of 40 - 60 years, and about two
thirds of them have received no or very little formal education.

Villages: There are eight villages in the area, the so called
emergency villages from 1955. These villages are occupied by people
who at the time of land-consolidation were landless, and therefore,
assigned from one tenth to a quarter of an acre by the County Council.
The land is still owned by the County Council and only landless
people are supposed to stay there, although exceptions to this rule are
in evidence. The eight villages are, Kihuyo, Kiamathambo, Rutura, Kanjor,
Kahigaine, Kihingo, Kanyinya, and Njogu-ini. By October 1970, 419
families were living in the villages. Most of the villagers grow
some subsistence crops on their small pieces of land. In many cases
the heads of household in the villages are unemployed.

Data Collection Method

Data gathering was divided into two stages; participant
observation, and survey research.

Participant Observation: One of the authors, Brigit Jakobsen, spent
about 10 weeks living in the home of a local Zaina family in order to
gain first-hand knowledge of the context of the study. She assessed
local conditions in the area through qualitative observation,
interviews and conversations with people.

Survey Research: The second phase of the study consisted of gathering
information using a questionnaire designed to elicit information
relevant to the objectives of the present study. The interviewing
was carried out by three agricultural assistants from the area,
working for the Special Rural Development Project, and Brigit
Jakobsen assisted by her interpreter.

Analysis Method

Data are analysed at various levels. First we compare and
contrast those households on farms (Farmers) and those in villages
Under each of these two categories, we compared farmers and villagers in the study (Zaina) area with farmers and villagers in the control (comparison) area. Then the farmers only are divided into two groups based upon their degree of progressiveness relative to each other. Thus, less and more progressive farmers are compared against each other in both the study and the control areas. All tabular results are in the form of percentages, and in a few cases, means are also provided.

It is important to note, however, that the bases for both less progressive and more progressive farmers in both the study and the control areas were too small to allow for reliable statistical analysis. Therefore, all percentages for less and more progressive farmers are based upon the total number of farmers in the study and comparison areas respectively.

Index Construction: The main index constructed is the farmer progressiveness index. Progressiveness, like innovativeness, is defined as "....the degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system" (Rogers, 1962, p. 19). There are two ways of empirically indexing progressiveness. One is based on the year (relative earliness) of adoption of relevant innovations, and the other is based on the number (relative to other members of the social system) of innovations adopted. We used the latter method. A household progressiveness score was therefore made of the number of innovations adopted from the following list: grade cattle, pigs, hybrid maize, certified potatoes, coffee, tea, pyrethrum, vegetables, and grade sheep and goats.

FINDINGS:

The present section is divided essentially into two parts:
1) a brief description of the study areas and information presented to show how similar to each other the two area are in those respects not connected with water and 2) information focussing on differences between the Zaina and comparison area due probably to the effects of reticulating water to the Zaina area.
Similarities between Zaina and Comparison

The place of the study is Chief Muhoya’s Location, Tetu Division, Central Province (see figure 1). The average altitude in the location is 6,600 feet with an average annual rainfall of 35–40 inches. The soil is volcanic and very good for agricultural purposes.

Geographically the area is dominated by high ridges and deep valleys with all year streams running from the eastern slopes of the Aberdare Range. The area has two major rain seasons, the long rains in March, April and May, and the short rains in October, and November. There is a fairly cold period with occasional rain in August.

The population in Chief Muhoya’s Location is mainly Kikuyu. In 1962 the total population was 13,698 and in 1969 it was 16,417.

Muhoya’s Location is an administrative unit with a Chief, and is divided into four sub-locations; Ihururu, Ihatha, Kabage and Kihuyo, each having one or two sub-chiefs.

The foregoing descriptions of Muhoya’s location applies equally in both the Zaina area and the comparison area. To that extent they are already matched. Further to this, however, we have selected a number of household characteristics to determine whether the Zaina and the comparison areas are matched on important socio-economic and cultural indicants.

Our findings indicate that the two areas, Zaina and comparison, are basically similar along such dimensions as:

1. Family Type and marriage patterns: there are equal proportions of nuclear and extended families in both areas and also a preponderance of monogamous marriages in both areas.
2. Household Size: there is an average of 9.5 persons per household in Muhoyas location (excluding villages, the average of which is 6.5). There are no significant differences between the Zaina farmers (9) and Villages (6) and the comparison farmers (9.5) on villagers and respectively. In both Zaina and comparison more progressive farmers tend to have larger families (10 and 11.5 respectively);
3. Characteristics of Head of Household; there are insignificant differences between heads of household in the Zaina and comparison area on such characteristics as age, sex, education and employment. About the same proportion of household heads were found to be...
residents (i.e. usually absent from the home) in both areas.

Other factors, such as farm size, crop patterns and animal husbandry practices, will be discussed later in this section when we examine possible effects of water in the Zaina area.

The foregoing indicants suggest that the two areas, the study and the control, are essentially similar in their non-water-related aspects thus lending some support to the contention that major differences which may be found between them with respect to factors which we hypothesized to be connected with water development may indeed be a function of that water.

Differences Due to the Zaina Water Scheme

Given that the two areas, Zaina and comparison, are essentially the same in terms of ecological, agricultural, social and cultural factor, i.e. in all essential respects except the main source of their water supply, then it becomes useful to examine any difference that may be found between the two areas, to determine whether these differences are due to the presence of the water scheme in one of the areas.

Differences Due to the Direct Effect of Water Per se

Table 1 shows the degree to which farmers in the Zaina area were directly affected by the Zaina Scheme. Between one and two out of every ten farmers in the Zaina scheme have no water tank on their property, and a further three out of ten farmers have Zaina tanks which are perennially dry. Thus, only half of the farmers as well as the villagers in the Zaina Scheme are benefiting on a regular year round basis from their own water tanks.

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1. A number of farms were created via fragmentation after installation of the scheme, and, therefore, do not have water tanks.

2. Some tanks were never ever functional whilst others have been out of commission for periods extending up to 10 years. The most common reason for tank dryness is low pressure in the system, or the pipe or tank damaged.
Households with a water supply close at hand (e.g. a water tank) use much more water than households which have to bring water in from afar. However, not all the Zaina tanks are functioning well. Many of the individual Zaina tanks and a few of the communal village tanks are either frequently or almost constantly without water. There seems to be several reasons for this, the most important one being that the capacity of the system is so small that farmers close to the source use up all the water (probably in excess of 100 gallons per day) with the result that the farmers at the far end of the piped system (around Ihururu Market) get no water. Furthermore, the population in the Zaina areas has increased by about 1,200 persons since 1962 and the present scheme had not been constructed to cope with this eventuality.

| TABLE 1: STUDY AREA BY PRESENCE OF ZAINA TANK ON FARM AND CONDITION OF TANK. |
|---------------------------------|------------------------------|------------------------------|------------------------------|
| Farmers                         | Villagers                    |
|                                 | Less Progeve | More Progeve | Zaina Total |
| No tank                         |               |              |              |
| Tank almost always dry          | 15            | 15           | 30           | 20 |
| Sometimes wet sometimes dry     | 3             | 3            | 6             | 3  |
| Almost always wet               | 25            | 24           | 49            | 47 |
| Total                           | 52%           | 48%          | 100%          | 100%|
| Base                            | 65            | 30           |

Larger, Readily Available Quantities of Water: Despite only half the Zaina farmers having their own functioning Zaina tanks, the scheme nevertheless benefits in a direct way up to four fifths of all the Zaina households (see Table 2). Those who do not have their own tanks, are making much use of either their neighbour's Zaina tank or a communal Zaina Tank. Non-Zaina residents, on the other hand, are still heavily dependant on rivers and streams.
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There is, therefore, a greatly reduced dependency among Zaina residents upon such other sources of water as wells, streams, springs, rainwater tanks, and hired haulers for their water needs. Thus, for them, purified water is now available closer at hand and in regular, probably sufficient supply. Indeed, 37 per cent of the Zaina farmers have such an abundant and regular supply of water that they are no longer able to estimate the quantity they use.

Differences Due to the Direct Effect of Time Released

Women, usually the wife of the head and to a lesser extent, the daughters of the head, are the individuals in the family most likely to gain time released from hauling water (see Table 3). To the extent, therefore, that the individual most likely to gain released time holds, as a wife and mother, a pivotal position in the family, we must conclude that this time released is of some considerable value either to the family as a welfare unit or to the farm as an economic unit.

On the average, three individuals per household in Muhoyas location are usually engaged in water hauling during a typical day. This figure rises to four for the more progressive farmers in the comparison area probably because they need more water to sustain their progressiveness. However, as is evident from Table 4, many of the Zaina water haulers do not spend appreciable amounts of their time hauling water as the tank is usually close at hand.

We have looked at two farms of average time released; first at the average for the whole of the Zaina area without regard for the inefficiencies of the water scheme, and second, the average only for Zaina farmers with a functioning tank, thereby giving us some estimate of time released if the scheme was to function perfectly throughout the system.

Thus, the average amount of time (see Table 4) saved by the individual water hauler in the Zaina area taken as a whole is 45 - 25 mins i.e. 20 minutes per day only. The corresponding collective figure for the households is 130 - 55, i.e. 75 minutes per day. However, considering only those households with a functioning tank, (they make up half the households in the Zaina area), then their amount of time released increases considerably. The average amount released per hauler...
TABLE 3: STUDY AND CONTROL AREA BY FAMILY STATUS OF MEMBERS ENGAGED IN WATER HAULAGE FOR THE HOUSEHOLD.

<table>
<thead>
<tr>
<th></th>
<th>Farmers</th>
<th>Comparison</th>
<th>Villagers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ZAïna</td>
<td>ZAïna</td>
<td>Comp.</td>
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<td>Total</td>
<td>Total</td>
<td>Total</td>
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<tr>
<td>Farms</td>
<td>Less</td>
<td>More</td>
<td>Less</td>
</tr>
<tr>
<td>Wife</td>
<td>84%</td>
<td>45%</td>
<td>85%</td>
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<tr>
<td>Daughter</td>
<td>52</td>
<td>25</td>
<td>51</td>
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<tr>
<td>Other female</td>
<td>33</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Other male</td>
<td>11</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180%</td>
<td>90%</td>
<td>86%</td>
</tr>
<tr>
<td>BASE</td>
<td>109</td>
<td>65</td>
<td>44</td>
</tr>
<tr>
<td>Mean No. of</td>
<td>3.0</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Haulers per H.H.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
per day become 10 - 10 mins, i.e. 35 minutes, and for the household per day, it becomes 130 - 30 mins, i.e. 100 minutes.

Thus, under an ideally functioning system, the average individual previously engaged in water hauling has only about a half hour of her time released for other activities, and the average time released collectively per household is about an hour and a half. Observe that this figure of an hour and a half may be arrived at differently. In Table 3, we saw that an average of 3 people per household usually hauled water in Muhoyas location. If each of them gains 30 minutes time released, then 3 x 30 = 90, i.e. approximately the time released collectively by the average household.

Differences Due to Indirect Effects of Water Per Se

Water present in readily accessible, purified, larger quantities may be expected to encourage adoption or expansion of livestock activities, improvements to animal and human health and welfare, and better crop husbandry including small scale vegetable patch irrigation.

Adoption of Livestock Activities: Water does not seem to have had any impact on the rate of adoption of such livestock activities as grade cattle, grade sheep, grade goats and pig keeping (see Table 5). That is, the proportion of people who have adopted grade cows in Zaina is not significantly different from the proportion of people keeping grade cows in the comparison area.

The same applies to the adoption rates of grade sheep, goats and pigs; the presence of water does not seem to have encouraged more adoptions in Zaina. Thus water does not seem to be a major constraint preventing widespread adoption of exotic animals.

Expansion of Livestock Activities: The expectation that water available more readily and in greater quantity would result in the average number of grade livestock per household in the Zaina area being significantly increased does not seem to have materialized (see Table 5). There are no differences in mean numbers between the study and comparison areas, with regard to grade cows, sheep, goats or pigs. This may be an indication of the proposition that probably land rather than water is a constraint for those farmers who might be planning to increase the number of their grade cattle.
Animal Health and Welfare: The number of grade cattle per household is about the same in Zaina and the comparison area but the most progressive farmers in Zaina have on the average a higher yearly income from the sale of milk through the dairy, the average income for more progressive Zaina farmers being Shs. 1,200/- per year as compared to Shs. 450/- per more progressive farmers in the comparison area. (See Table 5). Our data about income from milk is calculated from the amount of milk farmers delivered to the dairy co-operatives in the year 1970. They do not include estimates for milk consumed at home or sold elsewhere. It would appear therefore that for the most progressive farmers at least, water close at hand and in adequate quantity has had the effect of increasing average milk yields.

Human Health and Welfare: Whilst hard empirical data were not collected, personal participant observation strongly suggests the likelihood that people in the water scheme area wash or bath themselves more frequently than people in non-water areas. Certainly, water is no longer rationed, thus obviating the need for the same water to be used for two and even three different personal purposes before being discarded. Utensils and clothing are washed more frequently and more thoroughly.

Differences Due to Indirect Effects of Time Released: The individuals who have most time released as a result of the water scheme are the housewives and their daughters on the farms in Zaina.

Household Welfare: Participant observation suggests that housewives in the Zaina area as compared to the control area, appear to have more energy and time for activities which improve the general welfare of the family, such as more intensive child care, housework, food preparation, and more time to spend with their husbands and children. For example, Zaina housewives seem to be increasingly able to find time to take their babies and children to see a doctor at the first sign of sickness. They also seem to be more careful in preparing a balanced diet, especially for babies, and find more time for housecleaning. The children in Zaina who are often responsible for the provision of some of the water needed in the household, seem to have more time for play than the children in the

Some husbands particularly perceive their wives to have grown more handsome and are less fatigued as a result of being released from the burden of hauling water.
comparison area. The above observations, however are impressions gained from participant observation since we did not try to support them with quantitative measurements.

Formal and Informal Social Participation: Participant observation further suggests that the quantity of time spent in paying informal social visits to friends and neighbours has probably increased in the Zaina area as compared to the non-Zaina area. As regards participation in formal social organizations, our data indicate that there are almost twice as many women from farm households in the Zaina area as compared to the non-Zaina area holding membership in women's harambee groups. All the office bearers in these harambee groups turned out to be Zaina residents (see Table 6). The data further indicate a consistent bias towards membership by Zaina residents in such other organizations such as co-operative societies, local councils, school boards and church groups. A strong indicator of the high value people without water place upon its acquisition is shown by the high membership of people in the comparison area who are current contributing members of some water self-help group. This high membership rate may be due to the demonstration effect from the nearby Zaina Scheme.

Farm Enterprises: There are slight but not significant differences between the two areas in the proportion of farmers growing hybrid maize, certified potatoes, coffee and pyrethrum (see Table 7). However there is quite a difference as regards tea. Ascroft et al (1971) show that coffee growing stopped in Muhoyas location in 1965. This is also the year when further adoptions of coffee growing became prohibited. In 1966, as evident from the data of Ascroft et al, tea growing commenced in Muhoyas location. And the vast majority of these new tea growers are evidently in the Zaina area. However this is a coincidence, because tea growing in the Zaina area started not as a result of the water scheme, but because of the fact that the zone where tea growing is allowed and encouraged happens to run through Muhoya's location in such a way as to favour tea growing in the Zaina area to the virtual exclusion of all other areas in Muhoyas location.

It seems that only an insignificant part of the women in Zaina who had time released from water hauling have spent it on more intensive agricultural activities. There is no significant difference
<table>
<thead>
<tr>
<th></th>
<th>Farmers</th>
<th>Villages</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women's Burundi</td>
<td>24%</td>
<td>30%</td>
<td>28%</td>
<td>28%</td>
</tr>
<tr>
<td>Women's Self Help Group Membership</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Women's Cooperative Membership</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>34%</td>
<td>30%</td>
<td>28%</td>
<td>28%</td>
</tr>
</tbody>
</table>

TABLE 6: Study and control area by membership and office reader ship in formal organizations
<table>
<thead>
<tr>
<th>Year</th>
<th>BASE 64</th>
<th>65</th>
<th>66</th>
<th>67</th>
<th>68</th>
<th>69</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100%</td>
<td>97%</td>
<td>95%</td>
<td>97%</td>
<td>95%</td>
<td>97%</td>
<td>4%</td>
</tr>
<tr>
<td>1964</td>
<td>22</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>17</td>
<td>21</td>
<td>24</td>
<td>24</td>
<td>20</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td>20</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>1967</td>
<td>19</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td>19</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>20</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- Note: Yugoslavia
- Vegetables
- Fruits
- Tea
- Coffee
- Cerealized Pseuses
- Special Rate

**Data:**
- For each year, the data shows the percentage of total area under different crops and vegetables.
Zaina and the comparison area with respect to cash crops grown (see Table 7). Vegetables growing (mostly for home consumption) seems to be very little more widespread in the Zaira area, than in the comparison area. It appears that vegetables growing in many households, both in the study and the control areas, had already been going on along the river banks, so that the introduction of the water scheme making it possible to cultivate more vegetables around the water tanks, did not significantly increase the number of vegetable growers. None of the villages, however, are located on river banks. Therefore, the effect of the reticulation scheme on them is far as vegetable growing is concerned is more marked. Furthermore, since women from the villages no longer need to go long distances for water, they are now able to devote at least some of the time released to cultivating a vegetable patch.

The foregoing results indicate that it is not possible to show that time released has benefited one sector of rural life more than any other. Certainly, it has not appreciably (at least not so far) benefited say the economy of the area to any appreciable extent. Rather, the results suggest a diffuse effect, the benefits being spread over several different kinds of household and farm activities. We are led to the conclusion that the most likely way in which time released has been absorbed for the majority of households is by the housewife and the daughter doing a little more of each of the household chores they used to do anyway. Thus, it becomes extremely difficult to offer an itemized accounting of how a relatively small amount of time.

Negative Effects of Reticulating Water:

As mentioned earlier it is essential to look at various groups in an area to assess effects from water. These effects may very likely vary drastically from one group to another depending on the socio-economic position of the group. Paid water in Kenya has to be paid for by the recipients, irrespective of the degree to which the individual benefits from it. Thus those groups with great water needs stand to gain; others stand to lose. Also, some negative effects may very likely occur as a result of a capital intensive water distribution system replacing a labour intensive distribution system.
### Table 8: Study and Control Area by Water Distribution Systems

<table>
<thead>
<tr>
<th></th>
<th>Farmers Zaina</th>
<th>Farmers Comparison</th>
<th>Villagers Zaina</th>
<th>Villagers Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farms Less</td>
<td>More Zaina Total</td>
<td>Less</td>
<td>More</td>
</tr>
<tr>
<td>Households that:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are Hauler Employers</td>
<td>17%</td>
<td>2%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Are Self-haulers</td>
<td>55</td>
<td>25</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td>Have wet Zaina Tanks</td>
<td>25</td>
<td>25</td>
<td>24</td>
<td>49</td>
</tr>
<tr>
<td>Supply Employed Haulers</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>104%</td>
<td>56%</td>
<td>50%</td>
<td>106%</td>
</tr>
<tr>
<td>BASE</td>
<td>109</td>
<td>65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Our data from the comparison area suggest a labour-intensive water distribution system organized around three functionally differentiated groups of people: 1) Hauler employers, i.e. those who employ others to haul water for them; 2) Self-haulers i.e. those who haul all their own water for themselves; and 3) Employed haulers, i.e. those who sell their hauling services to hauler employers. Hauler employers are mainly among the more progressive farmers, self-haulers among less progressive and employed haulers predominantly among the landless villagers. Assuming that the same form of distribution obtained in the Zaina area before introduction of the scheme, then it is clear that a substantial part of this labour intensive distribution system has now been replaced by a capital intensive system (see Table 8).

**Indirect Effects on Local Employment**

Three out of every ten households in the comparison area employ haulers as compared to one out of every ten in the Zaina area. Assuming that the comparison area is a representation of what the Zaina area was before the water scheme, then it follows that two out of every three households who previously employed haulers in the Zaina area have since stopped employing them. Some people, therefore must have suffered unemployment. Ironically, those farmers (mostly progressive) who no longer need to hire haulers are counting upon their savings as all profit because, as shown in Table 9 they are not even paying their water fees faithfully.

Thus, not only has water produced the negative effect of loss employment for some inhabitants of Muhoyas location, but it has also created the condition where everybody in the Zaina area become a debtor to the County Council as of the end of 1970.

This unemployment effect of piped water seems to have affected households in Zaina Villages where there are fewer people hauling water for pay than in the comparison area.

**Problems of Water Fee Collection in Muhoyas**

The Kenya Government regards a permanent water supply as an economic investment that improves the position of the farmers who receive it, and therefore these farmers have to pay for the water.
When the Zaina water scheme was constructed it was agreed upon that all farmers with individual tanks had to pay Shs. 40/- a year (increased in 1964 to Shs. 60/- while the villagers with communal tanks would have to pay Shs. 20/- a year. The farmers and villagers were supposed to come to the Chief's Camp to pay their fees by the 1st of January every year. Instead of paying the whole amount once a year, most farmers pay smaller amounts when they feel they can afford it, usually when they have received payment from the co-operatives.

Occasionally the chief and the sub chiefs will encourage farmers to pay their fees at barazas and a few will respond to the call. Some of the farmers who have not paid their fees have now had their piped water supply cut off. Thirty-two tanks were cut off from their supplies at the time of the study. However, cutting off water supplies defeats the purpose of installing it in the first place.

However, as has happened almost everywhere where piped water has been supplied, there are great difficulties in collecting the water fees. In 1969, Zaina collectively owed Shs. 112,360/- in water fees to the County Council. The villagers have never paid water fees and a quarter of the land owning farmers in Zaina have not paid any since 1962. Willingness to pay water fees does not seem to be connected with whether a farmer has a functioning Zaina tank or not.

While it is expected from the farmers with individual water-supply points that they pay water-fees and sanctions are applied if they fail to do so, it is accepted for the villagers not to pay, apparently because they are deemed not able to pay.

**Indirect Effect on Farm Tenure**

The introduction of a water reticulation scheme in 1961 coincided with the completion of farm registration in Tetu Division. Registration was such that no farmers, at the date of completion of registration, owned more than one farm in the division. Now, ten years later, substantially more farmers in the Zaina area own two or more pieces of land than in the comparison area (see Table 10). In addition, there is a slight tendency for farmers in the Zaina area to have about an acre more land on the average than farmers in the comparison area probably as a result of acquiring more land.
It may be deduced that at least for two fifths of the Zaina farmers, land was felt to be a constraint to the extent where, over the past ten years, they gradually began to buy land from those in the Division willing to sell. Since there has been no corresponding tendency in the comparison area, we feel justified in reaching the tentative conclusion that the expansion in farm size in the Zaina area is associated with the water scheme. It has enabled some farmers to expand their activities to the limits of their available land. To overcome this constraint, more land had to be acquired from elsewhere in the Zaina area itself or in other parts of the Division. When the price is right, there is apparently no shortage of less successful disgruntled farmers who are willing to sell up and move away from the Division.

SUMMARY, CONCLUSION AND IMPLICATIONS

The present paper reports the findings of an exploratory study to determine the major effects of a small scale water reticulation scheme in a high rainfall potential, high population density area.

Summary of Main Findings

The main findings of the present report have been divided into two categories: namely, direct and indirect effects of the water scheme. The main direct effects from the water scheme are:

1. Larger, readily available and purified quantities of water for human, animal and small scale vegetable irrigation, and
2. Time released from the burden of water hauling.

From each of these two main direct effects, a number of indirect effects (or lack of them) were found.

Effects from Water Per Se

1. Respecting increased adoption or expansion rates of grade cattle and pigs, no significant impact from the water scheme was discernable.
2. The combined effects of round-the-clock availability of water and the greatly reduced walking distances for livestock to water sources is reflected in greater milk yields in Zaina than in the comparison area.
3. A continuous presence of nearby water appears to have beneficial effects upon personal and household hygiene and on the general welfare of the family.
The degree and frequency of formal and informal social participation in the affairs of the community is more prevalent in the Zaina than the non-Zaina area.

No significantly measurable effects have been noticed upon either the intensity or extensity of cash crop husbandry, except that small scale vegetable cultivation has become possible for those households, mainly the landless villagers, who previously had no direct access to a natural water source.

The housewife is the individual who most gains in time released, allowing her to spend more time on housework, husband and child care. However, only a small amount of time (about 1/2 hour on the average) is released, so small in fact that it is more than likely unnoticeably absorbed into normal, on-going housewifely duties and chores, rather than diverted to a single occupation such as intensified shamba work.

Negative Effects.

1. A source of employment previously available especially to inhabitants of the villages has to some extent been removed as a consequence of the transition from a labour-intensive to a capital intensive system.

2. The well-off farmers who previously paid others to haul water for them, are now even better-off with a more abundant round-the-clock, purified supply of water at a rate which many neglect to pay.

3. Those farmers for whom both water and land was a constraint found it possible, as soon as water ceased to be a constraint, to overcome their land constraint by simple dint of buying out their less fortunate neighbour who, as dispossessed farmers, are likely to become the unemployed and the urban slum dwellers of tomorrow.

There is perceived inequity in a fixed water system which tends to benefit wealthy water over users at the expense of poorer water under users.

There is a tendency for most farmers to avoid payment of water rates and the local administration does not appear to be geared to effectively collecting these fees.

The reticulation system itself is inefficient in as much as only half of the tanks it is supposed to feed actually receive a regular supply of water.
Conclusions and Implications

The principle conclusion to be drawn from the present study is that no single effect of introducing water for human and animal consumption in a high density, high potential area predominates in importance over all other possible effects. There are no overriding economic or social benefits, but rather a mixture of many varied socio-economic benefits, along with some socio-economic disadvantages associated with a small scale water reticulation system. A multiplicity of groupings of people in the Zaina area can be delineated, each group benefiting differently from each other group. Some of these groups many be affected more along economic lines, others more along social lines, still others by a mixture of both, but none of them in a startlingly, revolutionary manner.

Thus, there are both welfare effects and production effects, negative and positive, juxtaposed in differing combinations for differing groups and classes of people who make up the social system into which a given water scheme is introduced. Without suggesting that either the welfare or the production effects are mutually exclusive or easily operationally distinguishable, we do recognize that policy makers tend to make this distinction between welfare and economic effects when rationalizing goals and developing plans. Therefore we divide our remaining conclusions according to their primary implications for one or the other of these sets of policy considerations.

Regarding production effects, if it is government policy that water schemes such as the one in Muhoya's location should have economic payoff, then doing no more than merely constructing the water system is most unlikely to produce the desired economic effects. To achieve these kinds of benefits, it becomes necessary for the government to supply extension personnel to teach farmers how to maximize the economic potential, if any, of reticulated water. Water may be a constraint, but the concept of constraint must be broadened to include the cultural capacity and technical competence associated with water as a production input. It is axiomatic that where water is lacking, these will be lacking too.

If water is to be the only input in a high density, high potential area then it would appear to be advisable, on the basis of the present study, that priority be given to the welfare aspects of water
reticulation, those areas in greater need of health and social welfare benefits of water being given priority.

There is one final conclusion relating to production effects which is so obvious as to hardly merit emphasizing. Schemes should be designed so as to allow per-capita capacity to be maintained well beyond the period that beneficiaries are expected to invest in complementary production inputs such as livestock. As population expands and other water consuming inputs and practices are adopted, the expected multiplier effects of the water will be considerably diluted by dry tanks and empty pipes, such as have become a significant permanent phenomenon in the Zaina experience.

Regarding welfare effects, a major conclusion is that introducing a small water scheme may have unexpected deleterious effects along with the expected beneficial effects. Some of these unexpected effects are short run, such as loss of employment from professional water hauling. Others have longer term effects which may have severe repercussions upon other aspects of the nation's economy, such as the increased emigration from rural areas involving farmers dispossessed of their land by their wealthier neighbours. This means taking into account the existing system of inequality and the part it plays in the roles people have as distributors, sellers, buyers and consumers of water in the water system that administrators presume to change. This is not an especially difficult task requiring esoteric expertise. What is required is a common sense awareness of classic indicators of class diversity. Such indicators as income, land ownership, size of holding, use of modern innovations are easily discernable. The enumeration and classification of beneficiary populations in terms of these indicators, by means of survey sampling, is a relatively inexpensive task and should be included as part of the technical surveys usually conducted in proposed recipient areas.

The water payment system also has a direct bearing on the welfare effect. The current method of payment of water fees needs to be reconsidered. A flat yearly rate per household is likely to cost more in terms of effort and time to collect the fees than having no fees and no system to collect them. We are mindful in making this statement, that a similar problem obtained with regard to collection of annual fees from owners of radios. The cost, effort and time involved
in trying to collect the fees far exceeded the returns from fee collection. As a result, the government reconsidered their fee structure and is now collecting a once-and-only fee from the individual at the time the radio is purchased. What is clear to us about the present method of water fee assessment is that it is not equitable. It implies that less progressive farmers with their lesser water needs must subsidize more progressive farmers with their greater water needs. And in the perception of the people, there would appear to be even more injustice involved in having forcibly to pay for a commodity that was previously free.

On the subject of the welfare function of piped water, we are happy to conclude from this exercise, that there is a set of seemingly unexpected social benefits from released time. There is a significant amount of transfer of activity from water hauling to participation in formal organizations generally associated with Kenya's nation building.

Returning to the general level again, on the question of criteria for selecting sites for water installation, our findings are not conclusive, particularly since we have studied only one kind of ecological zone. However we offer one criterion for selecting possible sites for schemes which we believe would help maximize the likely benefits of the scheme. We suggest that water schemes should not be introduced as an isolated input to an area, but rather as one major aspect of a comprehensive development programme such as the Special Rural Development Programme with a broader, more encompassing development approach.

Finally, we cannot emphasize too strongly that the present investigation is not definitive but exploratory. We have been fairly liberal in analyzing and interpreting our information and have to a large extent allowed serendipity to guide us in our selection of noteworthy results. We do consider it scientifically and practically worthwhile that the hypotheses formulated and partially tested in the present study be tightened up and tested in differing ecological and cultural settings. Certainly more testing needs to be done before we can speak authoritatively about a rural development water policy.
differences between geographic areas, Padfield (1973) whilst seeming to take issue with this view, nevertheless takes matters a significant step forward by suggesting that we can also expect differential effects depending on differences within a social system of a particular geographic area. He states that:

"There are not 'poor' areas and 'rich' areas or 'low potential' and 'high potential'. In both there will be micro strata of inequality - poorest, poor, less poor, and less less poor - and benefits will be utilised accordingly. This is implicit in the definition of strata. Moreover the benefits of a given input will be captured unequally, many times increasing differentials in income which already exists".

Thus, any study of the effects of a small scale water supply must necessarily be geared to determining differential needs and uses by individuals located in different socio-economic strata. We are, however, aware that even within strata, there may be separable groups of farmers upon each of which the effects of a small water scheme may be different. Within any one stratum, for instance, water may be a constraint for one group of households, but not for those others with a river or stream fortuitously located close at hand. For still another group of farmers, land may be a greater constraint than water, while yet other groups might be constrained more by a lack of know how, or capital, or incentive than by either water or land. It is necessary, therefore, that we avoid making unwarranted blanket comments about single factor effects of water even upon such a micro-unit as a single stratum of people.

To summarize therefore, we accept the Government's view that the provision of rural water supplies is a fundamental condition for rural development. We endorse the notion of multiple effects of water upon a community's agricultural, economic, and social welfare though we prefer a somewhat more systematic and scientifically defensible classification than has been offered by Klumse-Bos. We agree with Carruthers that the ecology of a place may dictate the type of effects to be expected from reticulating water to it, though we disagree that small scale water supplies intended for human and animal consumption should produce a "large increase" in the national income. Finally, we accept the Padfield notion of expecting differential effects for people at differing socio-economic strata and suggest
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ISSUES IN DEVELOPMENT RESEARCH:
THE CASE OF WATER IN KENYA

Harland Padfield
Institute for Development Studies
University of Nairobi

Since the application of science to policy adds a self conscious dimension to policy, it seems appropriate that the scientific framework for this application also be self conscious. Self consciousness in science begins with an examination of its deductive system or its a priori system of logic.

These are some of the philosophical issues which from my point of view need to be thought through before a useful water research program can be designed. Some of these issues have been raised explicitly or implicitly by others. Some I raise myself as a means of critiquing what appear to be fallacies or contradictions in logic of some of the statements I have studied. My basic thesis for this whole discussion is this: if science is used in formulating policy prior to empirical studies, as it frequently is, the deductive propositions upon which this policy is based tend to predetermine the implicit hypothetical system as well as the explicit hypotheses for research and evaluation. This may invalidate or, at the very least, minimize the effectiveness of research and evaluation.

SCIENCE AND POLICY

The issue of the dynamic interrelationships of science and policy, or the interrelationships of science and policy at various stages of the planning and development process.

It seems to me water research at this stage in Kenyan Development begins with the acceptance of three realities:

1) Water and systems for the use of water are universal.
2) There are no data streams on these systems.
3) A Kenyan water development policy exists and is becoming an operational reality.
There is no such thing as an absence of water supplies or an absence of technologies for their use. Wherever people are located they will have systems for the utilization of water just as they will have for the use of land and ecology generally. In the midst of numerous and various existing water systems and at the stage of virtually zero knowledge of these systems, a national water development policy begins. This is the stage on which or at which a player called water research appears with a fistful of scenarios but no script.

Planned development must begin somewhere. If policy planners waited until the existing situation was empirically known to them, it probably would not begin since the compelling reason for knowing the situation would not exist were it not for policy. It is a central fact of development research's existence, that it is more a consequence of policy than a cause.

This genesis commits research to the priorities of policy if for no other reason than the fact that policy is always one step ahead of it. Thus it is historically inevitable as well as morally proper, or should I say "economically necessary", that development research is heavily biased toward application. But the effects of this peculiar genesis do not end there. The effects frequently intrude into the logics of the research process itself.

In the urgency of human needs and political necessities and to add redundantly, in the absence of empirical data, the initial role of science is to form a priori rationale. That is scientists help planners speculate about the situation scientifically. If the scientists are economists, the rationale they provide planners will be heavily biased in terms of production efficiencies or economic benefits over economic costs to a theoretical national economy. If the advisors are sociologists, rationale will be biased in terms of consumption or welfare efficiencies or social benefits over social costs to a theoretical national society. If the advisors should happen to be anthropologists, policy rationale would be biased in terms of its effects on quality of life and viability of a particular cultural group, society or community.

Ignoring for the moment, the kind of bias in rationale, the
problem I am stressing is that preconceived rationale developed by
science for policy at the planning stage frequently becomes ipso facto
the deductive system for research and evaluation, especially when the
same person, group or institution functions in both scientific
capacities. The result is a kind of exercise in the evaluation of
hypothesis making -- an evaluation of the rationale of policy as
opposed to the evaluation of policy proper. I cite Dennis Warner's
impact study on Tanzania rural water supplies as a case in point:

"The success of any investment made in the cause of
development should be gauged in the light of the objectives
it sets out to achieve. In the case of rural water supply
the intended objectives are rarely specified explicitly.
For the most part the intended objectives, as well as the
resulting effects, are left as unspoken, implicit assump-
tions. The success of programmes often is measured in
terms of the number of people served with water per year
or, more frequently, the amount of expenditure achieved
during the period in question. If water supply invest-
ments are made for development purposes, then neither the
amount of expenditures nor the totals of population
served, by themselves, should be used as measures of
success or achievement. Success should be measured against
the national development objectives that are related to
rural water supply.

The impact study under the direction of the Economic
Research Bureau started with the basic premise that the
benefits of an improved rural water supply are those res-
ulting in social and economic changes that contribute to
the fulfillment of national development objectives".¹

Warner is confusing policy rationale with policy. The rationale for
policy is a thought system and usually not a very comprehensive or
consistent one at that. "Testing" this thought system is an intri-
guing academic exercise, but I am skeptical of its net benefits to
planning. Policy is action. More precisely, policy is a system of
action. It intersects systems of action participated in and generated
by sets of people referred to as "beneficiaries". Therefore both
policy and beneficiary behavior must be seen as open systems of
action -- open to each -- and these systems of action must be empiri-
cally derived before the full effects of policy can be determined.
Policy rationale or what planners say they are doing and why they
are doing it, can only partially comprehend these real action systems.

¹ Dennis Warner, "A Preliminary Assessment of the Impact of Rural
Water Supply upon Households and Villages", Dar es Salaam 31st. March
It is a deductive model as opposed to empirically abstracted models of behaviour.

Scientists are naive to think that even when their hypotheses are incorporated in policy statements, that this is primarily due to their scientific validity. Policy rationalization is aimed primarily at the politics of acceptance and is only secondarily concerned with formulating valid models of policy and beneficiary behaviour. Policy statements are articles of faith appropriate to the sentiments, values and beliefs of the people whose support is needed. The statements may be couched in the values of a predominant ethnic and class group, as recent United States Urban slum policy is rationalized in terms of the sentiments and beliefs of the white middle class. In newly independent countries, development policies will be rationalized in terms of the objectives of the independence movement. If the new order is founded upon a socialist system of thought, propositions will be consistent with socialist ideology. If it is a capitalistic social system, even the same over-all development objective will be rationalized a different way. Compare the Tanzanian Water Development program with its Kenyan counterpart. When all is said and done, I seriously doubt the over-all effects of either policy will be significantly different -- unless, of course, there are large differences in the levels of allocations.

The thought system reflected in policy rationale is the result of forces and processes distinct from the logics of science. This point would be redundant if I were talking about policy-making prior to the fad of hiring the scientific expert. For instance, I doubt there would be any tendency among policy scientists to attach serious scientific significance to the policy utterances of Sir Philip Mitchell, Governor of Kenya during the waning years of Britain's Colonial rule:

"It is common ground that the great mass of the people of this region (East and Central Africa) are still in a state of ignorance and backwardness, uncivilized, superstitious, economically weak to the point of near helplessness and quite unable to construct a civilized future for

themselves, to 'pull themselves up by their own bootstraps.' Universal suffrage or democratic government is unthinkable. If it were allowed, it would merely lead to a twentieth-century model of the slave trade whose abolition had in the first place been the motivation of 'the great men who led the missionary venture of rescue' -- the British colonization of Eastern Africa. These statements would be dismissed summarily as the catechisms of a benevolent chauvinist, and it would be considered an absurd waste of time to scientifically test them and morally wrong to lend scientific expertise in implementing them. To me it is just as inappropriate to frame testable hypotheses about the effects of water development programs in Kenya from policy statements of the Kenyan Government:

Water made available more easily and in larger quantities could significantly raise the level of production per family realizable from small farm cultivation and animal husbandry. The provision of rural water supplies is accordingly regarded by the Government as a fundamental condition for rural development. (Emphasis mine).

Kenya's water policy, like Britain's post war colonial policy is a result of the beliefs and values of the political decision makers. Like most policies, it is rationalized in the most acceptable terms of the day. Water development could just as well be rationalized on the grounds of maintaining political stability. The rightness or wrongness of a policy is to be assessed in terms of the total effects -- unintended as well as intended -- not in terms of the prior justifications for it.

Policy is no more autonomous than it has ever been. It still is a function of culture. The fact that more recently in the ancient history of policy making, scientists are the chief employees of policy makers as opposed to philosophers, priests, noblemen, generals, aristocrats, poets or medicine men, in no fundamental way changes the process of policy formation or the functions of policy. Science is simply a new stream of inputs into the consensus system of policy formation. The process of policy formation and implementation is not transformed into a scientific exercise by imbedding policy rationale.


with scientific terms and concepts. It is not de-biased by this
consultation, it simply gets another bias -- an important one perhaps --
but a bias nevertheless.

I regard scientific fundamentalism as just another more recent
form of absolutism, and some supremely able scientific skeptic of
science should warn well meaning planners in developing countries
about the perils and pitfalls of placing an absolute value on policy
being rationalised in terms of supposedly "objective" quantifiably
verifiable criteria. This practice sweeps clear the old familiar
people-biases putting in their place new biases which planners will
have the expense of discovering at some future date. Scientific
fundamentalism in policy, if anything, may further alienate policy
from the people -- although it may take a scientist to prove this,
which would, of course, enable science to save policy from science
thus reinforcing scientific fundamentalism.

DEVELOPMENT ISSUES IN THE CASE OF WATER

Getting down to specifics in the case of water development
research there are a number of a priori tenets which I consider to be
the logical consequences of scientists taking scientifically rational-
ised policy too seriously, or in other words accepting uncritically at
the research and evaluation stage, the rationale for the policy form-
mulation and acceptance stage.

1. First I think there is a bias of attributing too much singular
significance to the development of domestic rural water-supplies.
Putting it another way, there is danger of too singular a research
emphasis on water development impact given the present and projected
levels of expenditure per scheme.

There are some very understandable reasons for this bias. Rural
Water Development is a very recent policy emphasis. There has been a
dramatic increase in the budget for water. There is a paucity of basic
data on all aspects of water. There is considerable donor interest
in water, specifically; and of course, physically and technically,
water systems are distinctive. But all of these compelling reasons to
think of water as a separate entity do not mean that rural water supply
levels projected will have economic impacts significant enough
to justify the large costs of research to isolate them. For instance,
after somewhat arbitrarily determining from a number of "inconsiste
policy objectives that the general thrust of Kenya's planning strategy is first to raise national income as a pre-condition to meeting its social objectives, Carruthers goes on to say,

If the (Kenya) water programme is to reach the high level of 22 million per year within three or four years, 'the programme has to be consistent with the planning strategy of the country of raising national income. Thus emphasis should be placed on schemes which will produce large additions to the national income.'

Thus the pivotal premise that leads to a production oriented design for rural water projects and an implied role for research and evaluation in this regard is that Kenya's projected levels of allocation for rural water supplies are too significant to escape the production rule.

I consider this premise false. In the first place regardless of the amount of money being spent, the schemes are for human consumption. This is dictated by the capacities of the delivery systems, relative to the numbers of people served. We are not talking about investment in technologies to convert fossil carbons, solar energy, fissionable materials, or even large scale irrigation schemes converting solar energy and arid lands into agricultural output; we are talking about systems for saving human energy and under the most optimum conditions in a labor-scarce economy where the labor saved has the opportunity of being converted into production on a 1 to 1 basis, the man hours and capital required to build and maintain delivery systems would have to be charged against the man hours converted from water collecting to farm labor or some other hand labor. Another thing to remember in this argument is that the labor theoretically saved is all low cost or unskilled labor, so it is implied that if there is any conversion at all it would be to labor intensive, low productivity systems, so what are we academicians talking about? We are debating in rather pretentious terms the tremendous increases in production which theoretically result from delivering 5 to 10 gallons of unpurified water to within a mile of an unskilled laborer's or small farmer's house. I identify the beneficiary here in terms of

I.D. Carruthers, "Issues in Selection and Design of Rural Water Projects", Discussion paper No.88, Institute for Development Studies, University College, Nairobi, December, 1969, p 4
his given productive capacity because the argument is about the production function of small-scale rural water schemes. If it were agreed that the production function is negligible, which is what I am saying, then beneficiaries could appropriately be identified simply as human beings with very explicit and universal human needs in regard to water, and the logical foundation laid for a consistent clear-cut strategy for scheme selection and design. It is inherent in the production argument that some people or some production roles are more valuable than others. I agree that this is true and argue that the logics of this premise do not lead to the implementation of 10 gallons per capita delivery systems to low-skilled laborers, but should lead instead to the allocation of £2 million to one or two large-scale irrigation projects or to industrial use. Obviously this is socially and politically intolerable while the rural population has no water. So in effect the production argument is not confirmed by the level of allocations, given the number of schemes it is supposed to finance and the number of people it is supposed to serve.

I have one other argument with this fixed emphasis on the "high level" of water allocations and the implied significance this has for economic cost/benefit research and evaluation. Not only does it lack significance as a production input, but its significance relative to levels of allocations in other sectors must be challenged. I address myself to the thinking exemplified by the following statement:

Kenya is committing a significant proportion of its development budget to rural water development. Although it is possible that this would be continued even if economic benefits are not resulting, it would be better to take decisions in the light of facts demonstrating the impact of the programme.\(^6\)

The questions I ask are: "What proportion of a budget is significant?" and "What implications does this logic have for decision rules and research priorities for other programs with the same or greater proportions of the budget?"

A ranking of programs by size of planned expenditures for 1968/1969 reveals that water supplies ranks ninth out of a total of

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6. Ibid., p.6.
37 programs (see Table 1). Health, housing ICDC, livestock, education, railways/harbours, roads, and agriculture rank higher. A better index of significance is the percentage of the development budget water accounts for, which is 4.04 percent. Education is double this percentage. Railways and harbours is two and half times, roads is almost four times and agriculture is five times the planned expenditure on water.

**TABLE 1**

<table>
<thead>
<tr>
<th>Program</th>
<th>Am't</th>
<th>Pct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agriculture, excluding livestock</td>
<td>5,842</td>
<td>20.80</td>
</tr>
<tr>
<td>2. Roads</td>
<td>4,401</td>
<td>15.67</td>
</tr>
<tr>
<td>3. Railways and Harbours</td>
<td>3,000</td>
<td>10.88</td>
</tr>
<tr>
<td>4. Education</td>
<td>2,364</td>
<td>8.41</td>
</tr>
<tr>
<td>5. Livestock</td>
<td>1,835</td>
<td>6.53</td>
</tr>
<tr>
<td>6. ICDC</td>
<td>1,400</td>
<td>4.98</td>
</tr>
<tr>
<td>7. Housing</td>
<td>1,200</td>
<td>4.27</td>
</tr>
<tr>
<td>8. Health</td>
<td>1,182</td>
<td>4.20</td>
</tr>
<tr>
<td>9. Water supplies</td>
<td>1,135</td>
<td>4.04</td>
</tr>
<tr>
<td>10. Forestry</td>
<td>1,008</td>
<td>3.58</td>
</tr>
<tr>
<td>11. DFCK</td>
<td>1,000</td>
<td>3.56</td>
</tr>
<tr>
<td>12. Airports</td>
<td>525</td>
<td>1.86</td>
</tr>
<tr>
<td>13. Tourism accommodation</td>
<td>455</td>
<td>1.62</td>
</tr>
<tr>
<td>14. Government Buildings</td>
<td>435</td>
<td>1.54</td>
</tr>
<tr>
<td>15. Local authorities</td>
<td>400</td>
<td>1.42</td>
</tr>
<tr>
<td>16. Armed Forces</td>
<td>396</td>
<td>1.41</td>
</tr>
<tr>
<td>17. Posts &amp; Telecommunications</td>
<td>337</td>
<td>1.20</td>
</tr>
<tr>
<td>18. Prisons</td>
<td>203</td>
<td>0.72</td>
</tr>
<tr>
<td>19. Police</td>
<td>150</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Out of 37 programs & K£28,078,000

*Abstracted from Table 2.29, pp.52-55, Republic of Kenya, Development Plan 1970/1974.*
### TABLE 2

Ranking of programs by size of actual (estimated) Expenditure for Development 1968/1969* K£'000

<table>
<thead>
<tr>
<th>Program</th>
<th>Am't</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Roads</td>
<td>7,385</td>
<td>22.53</td>
</tr>
<tr>
<td>2. Agriculture excluding livestock</td>
<td>6,974</td>
<td>21.27</td>
</tr>
<tr>
<td>3. Education</td>
<td>3,258</td>
<td>9.93</td>
</tr>
<tr>
<td>4. Railways and Harbours</td>
<td>2,910</td>
<td>8.87</td>
</tr>
<tr>
<td>5. Housing</td>
<td>2,000</td>
<td>6.10</td>
</tr>
<tr>
<td>6. Posts &amp; Telecommunications</td>
<td>1,153</td>
<td>3.51</td>
</tr>
<tr>
<td>7. Health</td>
<td>1,150</td>
<td>3.50</td>
</tr>
<tr>
<td>8. Livestock</td>
<td>994</td>
<td>3.03</td>
</tr>
<tr>
<td>9. Forestry</td>
<td>975</td>
<td>2.97</td>
</tr>
<tr>
<td>10. ICDC</td>
<td>945</td>
<td>2.88</td>
</tr>
<tr>
<td>11. Government Buildings</td>
<td>784</td>
<td>2.39</td>
</tr>
<tr>
<td>12. Water supplies</td>
<td>654</td>
<td>1.99</td>
</tr>
<tr>
<td>13. DFCK</td>
<td>450</td>
<td>1.37</td>
</tr>
<tr>
<td>14. Tourism accommodation</td>
<td>381</td>
<td>1.10</td>
</tr>
<tr>
<td>15. Armed Forces</td>
<td>388</td>
<td>1.03</td>
</tr>
<tr>
<td>16. Police</td>
<td>279</td>
<td>.85</td>
</tr>
<tr>
<td>17. Prisons</td>
<td>252</td>
<td>.76</td>
</tr>
<tr>
<td>18. Airports</td>
<td>243</td>
<td>.74</td>
</tr>
<tr>
<td>23. Local Authorities</td>
<td>100</td>
<td>.30</td>
</tr>
</tbody>
</table>

Out of 37 programs & K£32,778,000

*Abstracted from Table 2.29, pp. 52-53, Republic of Kenya, Development Plan 1970/1974*
A look at the actual as opposed to planned expenditures for 1968/1969 reinforces my skepticism (see Table 2). In actual expenditures, water ranks 12th accounting for less than two percent of the budget. Government buildings is 11th, health is 7th, post and telecommunications 6th, housing 5th with six percent of the budget, rail and harbours 4th with almost nine percent, education 3rd with 10 percent and agriculture and roads are the giants of the budget, with a whopping 21 and 23 percent respectively -- over ten times the expenditure on water.

How relatively significant is water ranking in twelfth place with less than two percent of the budget? It would seem much more important by Carruthers's logic to ascertain the economic benefits of roads, education, housing, the postal communications and health systems than water supplies. If research priorities were to be rationalized on this basis, actually we scientists have no business dabbling in water until the economic decision rules for some of these other programs are established -- such as roads for instance. At least it would seem to a non-economist that an economist could take this point confidently simply on the basis of the hypothetical cost/benefits of research activities to the Kenyan Government.

One final look at the projected development expenditures for the year 1973-74 does little to enhance the relative significance of water expenditures. Here we are dealing with projected allocations in the neighbourhood of £2 million, a significant increase over £1,135,000 in 1968/1969, but the Kenyan Government is now talking about a total development expenditure of £52,579,000 as opposed to £28,078,000 in 1968/69. So water's increase is virtually zero relative to the increase in expenditures as a whole. It is still in ninth place accounting for 4.47 percent of a projected budget which has almost doubled in the meantime. Parenthetically, I might add that roads still rank No.1.

The second bias I have indirectly discussed in the context of the over-emphasis on water impact, but it is a sufficiently serious bias to merit re-emphasis in a separate discussion. That is the use of

economic cost/benefit criteria to develop decision rules for the implementation of policies which are the consequences of welfare norms and social demands. This raises the issue of whether expenditure for rural water supplies is to be regarded as a production input or a welfare input. Clearly Kenya policy rationale regards it as both.

There are very compelling reasons why policy statements emphasize the production benefits of a given program. Even though a given policy may be in response to demands altogether at variance with the aim of increasing national productivity and even though the effective system of action may be to increase the welfare of people, it is frequently mandatory and always good to throw in a set of hypothetical justifications having to do with increasing national income. But an unassailable justification for policy easily becomes the conventional proposition for research, implementation and evaluation, making data requirements and analytical designs as inevitable and predictable as the climax of an American cowboy movie.

This bias must be challenged. I take the position that the consumption functions of Kenya's rural water expenditures are criterial, not their production functions. I am not substituting welfare fundamentalism for production fundamentalism or a sociological bias for an economic one. It depends upon the program. Regardless of the rationale for Kenya's rural water program, given the limited expenditures relative to other programs, the policy of maximizing the number of schemes relative to these expenditures, their low per capita capacities, their geographical dispersion, coupled with the social demand for piped water in excess of program commitments -- all, lead me to the working premise that it is the immediate welfare of rural people which is at stake not agricultural production. All of this would be academic except for the amount of money being spent for research to support development. Any serious effort to make production benefits an operational hypothesis for water research makes research activities an exceedingly expensive pretension leading to the absurdity of expensive research scientists with annual costs in excess of the capital costs of an entire water scheme doing time and motion studies of overworked and underemployed people before and after...
pipe brings water a few miles closer to their doors. This may itself be one of the consumption functions of water development, but I think there are more efficient ways of allocating this welfare benefit.

Looking for large productive responses from small per capita capacity water schemes leads logically to certain other fallacious preconceptions, one of these is the concept of "released time". This raises the issue of the "benefits" of labor substitution.

3. "Released time" is a meliorative term for labor replacement. It is frequently a euphemism for unemployment. It is not only naive, it is singularly misleading because premises or a priori assumptions about the opportunity costs of labor as well as the cultural values and socio-economic situation of the worker are inherent in the concept. Actually it is an hypothesis on the benefits of labor substitution being used as a ready-made proposition for exploring the "impacts" of labor substitution.

In regard to piped water, the implicit premise is that the people hauling water are doing so because water is a sheer necessity beyond price and there is no relationship between this man, woman or child's availability or willingness to carry water and the theoretical value of his labor. On the contrary, there is a direct relationship between the availability of the person carrying water and the value of his labor. If he had more productive things to do he would be doing them. The fact that it is water he is carrying instead of scraps of wood, empty wine bottles or rags in no way alters the economic implications of the activity.

The released time hypothesis requires us to accept a proposition that there is a compelling non-economic form of activity depriving a valuable man of his time much the same as asthma deprives a doctor or an attorney of his time. If he is cured of his asthma then think of how many more clients he can handle and the increase in fees he can realize. Economic theory accounts for behaviour in this model only at the point that the asthma is cured or the captivity of his labor -- i.e. the necessity to have water -- is broken. At this point the victim or beneficiary is transformed from non-economic man to economic man putting his gift of free time to good use by engaging in activities his captivity
denied him and the lack of performance which had been costing him and his nation either in the form of low yields on his labor-constrained shamba or wage opportunities forgone on a hot labor market. The released time proposition is as misleading here as it is in hypothesizing the "benefits" of electric kitchens to uneducated American housewives, or the snow plow to the Eskimo, or the cotton picking machine to the Mississippi sharecropper -- or for that matter, to the U.S. economy.

The sociology and micro economics of the tasks being displaced are fundamental to predictions about what those performing them will do when "released" from their "drudgery". Basically it boils down to the issue of whether water hauling is an economic activity or a disease. Of course if it is an economic activity, we must understand the existing system of distribution of the benefits of the existing water supply. The role or economic significance of hauling cannot be understood until its place in this system is known. We know there will be differentials in the benefits from water in an area, a community and even a household. The same will hold true of the benefits of the labor of hauling. It is the familiar question of who gets what and how much. It is axiomatic that the new water technology will have differential impacts on people in some relationship to their roles or status positions in the old system.

I contend that whatever water hauling is -- i.e. if it is captive labor -- this is not a function of the existing water technology but rather a function of the prevailing micro economic system. This means that the key constraint is not the existing technology but the socio-economic position of the hauler. Substituting a pipe gravity system for a labor intensive hauling system would not benefit him except by increasing his leisure or idleness in which case we can say he is better off but no richer -- that is assuming he gets his share of the water. But one of the implications of water hauling as an economic activity is that there are others besides the hauler who benefit from his activity. Therefore piped water would not benefit haulers and non haulers equally because it brings the one who hired the hauler 10 gallons per day as well as saving him the cost of wages -- whereas the hauler gets 10 gallons, no wages and leisure or open non employment. This
would hold even where hauler and non-hauler consumption were equal. But the chances are that the differentials in the distribution of the benefits of the old water system will prevail or even widen in the distribution of benefits of the new system. This brings me to the discussion of a fourth bias which prevades much of the literature on water research and water impact studies in East Africa.

4. The concept of "areas" and the implicit assumption of area uniformity -- i.e. the area in question lacks an internal socio-economic system and the articulation of its population with the larger socio-economic system is uniform. This poses the issue of the differential capacities within a development area to capture the benefits of a given input.

The concept of area produces a blind spot to the dynamics of impact. Typologies for development decision-making purposes should be by community, economic activity, or by socio-economic class, not by area. The integrity of any unit for purposes of generalizing about probable social and economic impacts is not an administrative boundary, as convenient as this may be. It is a function of socio-economic class. Also ethnicity or language and culture plays a part, but this is a higher or more general criterion.

There are not "poor" areas and "rich" areas or "low potential" and "high potential". In both there will be micro strata of inequality -- poorest, poor, less poor and less less poor -- and benefits will be utilized accordingly. This is implicit in the definition of strata. Moreover the benefits of a given input will be captured unequally, many times increasing differentials in income which already exist. Thus a given beneficiary may be better off relative to his income before the input, but worse off in terms of his relative socio-economic position in the local system. Any given area has its own exchange system for goods and services reflecting income differentials and other micro inequalities. Opportunities are perceived and rationally exploited not by an area acting in concert, but in terms of the smallest economic decision making unit -- the household. This is the micro firm. Just as firms compete, households and farms compete for benefits. The chances are the households and the individuals in the households who haul the water occupy the lower strata. If this
is so then any strategy to improve the welfare or increase the output of these people specifically must be more than a glib general area approach. Otherwise it may turn out to be an irony, meaning that water piped ostensibly to help the poor haulers held captive by a primitive technology will benefit the haulers' employers and the 5 - 10 acre farmer more than the poor haulers, who if they farm at all, probably have the smallest acreages and poorest lands. This again implies that water development is postulated as a social good or a welfare input.

A lot of issues hinge on the key issue of whether a given water scheme is a strategy for increasing the welfare of beneficiaries or increasing their production. I think an unequivocal answer to this issue is basic to an effective strategy. The attitude of some researchers and planners may be, "Why not both?"

My feeling is that the national policy encompassing many peoples, communities, economies and regions can have both objectives. But at the point of specific scheme planning, I contend the strategy must be consistently one or the other because the strategies are mutually contradictory. Regardless of the rationale, the procedures developed spell out the operational policy.

For instance, the Kenyan strategy for rural water development is rationalized basically as a production input but then designed in such a way as to preclude any real production gains because it is spread too thin i.e. to maximize the numbers of people served. So a production strategy is operationalised as a social good. Then planners revert once again to production criteria by using potential for utilising water as a key selection criterion and insisting upon payment of fees because of projected increases in beneficiaries incomes. But then the welfare decision rule prevails again because there exists an effective practice of ignoring non payment of fees.

The effective strategy which emerges from these procedures can be illustrated by a hypothetical case -- the case of the "Mountain Ridge" scheme. The area was selected partly because of its high agricultural production which means it has a relatively wealthy stratum of farmers. This should have alerted planners to expect that this group would be the largest users of water and
would have the greatest capacity for increased use. Moreover one would also suspect that they were paying for their water hauling and had the greatest capability to pay for piped water. But then the scheme was designed for low per capita capacity — a social good criterion and fee collection is not enforced — another social good decision rule. Individual connections are provided with no meters or any technical feature for regulating consumption which in effect provides the technical capability to capture benefits in excess of the design.

The people in Mountain Ridge being human — i.e. economic man, the result is predictable. A subsystem of water economics develops involving water shortages "pipe drouths" a black market distribution system and a black market pipe repair system. An enormous differential capacity to capture benefits results favouring of course the highest socio-economic stratum. The welfare aspects of the scheme have been subverted by the production aspects and the repayment prospects of the production aspects subverted by the welfare aspects. The poor haulers now have more leisure or obvious unemployment and must still frequently go to the river for their water. Larger farmers who originally had the agricultural capacity to utilise water in large amounts are doing so while at the same time saving wages previously paid haulers. What we have in effect is a welfare system the benefits of which are distributed in inverse proportion to the beneficiaries' needs and in direct proportion to capacity to pay.

Let me hasten to emphasize I am not saying this situation exists anywhere in Kenya, simply that it is hypothetically possible for it to exist given the present operational practices which, to me, seem to be the results of efforts to interject the value of production fundamentalism into what is essentially a social demand situation.

THE ROLE OF SOCIAL SCIENCE AT THIS STAGE OF RURAL WATER DEVELOPMENT IN KENYA -- A SUMMARY.

Policy rationale and policy are two different things. The fact that scientists are now the chief architects of rationale makes no difference. Although this gives policy the formidable appearance of being a scientific process, it is in fact still a natural social
action system including deciding which experts to hire to rationalize policy. These are biases which I see resulting from the confusion of micro economic rationale with the social, and political realities underlying Kenya's water policy. 1) an over emphasis on the singular importance of water development expenditures, 2) ignoring the sociology and micro economics of beneficiary populations, 3) an emphasis on production as the prime objective of water development, 4) and implicit reliance on cost/benefit criteria as the only operational index of performance.

Ironically there is a real cost/benefit issue -- the strategy of putting water expenditures into fewer, large production oriented projects as opposed to mounting many small projects with high beneficiary densities and minimal per capita capacities. But all of the indicators I see infer that this is a closed issue socially and politically. Regardless of its rationale, water development policy is an expression of peoples' felt need. The program will continue regardless of the lack of empirical proof of net income gains. This plus the low per capita inputs of the schemes and the level of over-all water expenditures relative to expenditures for roads, harbours, hospitals, schools, television and other programs where cost/benefit criteria have yet to be developed, make cost/benefit studies for water a trivial but expensive exercise.

Does this mean there is no need for social science? I would say there is a need for a broad interdisciplinary social science. Since we are talking about a program which envisages touching literally every human being in Kenya by the year 2000, I would say we are talking about a human impact program. Modification of human systems and human behaviour is involved prima facie. As with schools, hospitals and roads, the government should get the most effectiveness from its expenditures. There are bound to be production impacts, but the primary effects are the consequences in terms of human welfare. This is cost relevant. All behaviour is cost relevant. But the behaviour cannot be hypothesized without first knowing the sociology and micro economics of prevailing water systems.

What we have now in the rural areas of Kenya are human or labor intensive technologies for water procurement and distribution.
What the Water Development Division is charged with doing is substituting capital intensive technologies in place of labor intensive. This will have social and economic effects -- presumably beneficial. But in order to maximize the benefits we must do more than define impacts in terms of whole populations and areas. We must know differential impacts upon various institutions and socio-economic classes and various economic activities and exchange systems. I am not talking about baseline surveys, I am talking about knowing existing water systems and interconnectedness of these systems with the social and economic structure of the area or population in question. This does not mean intensive social and microeconomic studies of every administrative location. It would mean studying water systems in sociological and microeconomic context in contrasting cultural and ecological settings. Then valid survey instruments and procedures could be designed for use in any area which would provide criterial information quickly and cheaply.

These are some of the things I would like to know: the distribution system in terms of roles -- e.g., haulers for self and other, haulers for self, and employers of haulers -- techniques, equipment and units and amounts of exchange. The existing water consumption patterns in terms of quality, quantity and purpose. Then the comparison of roles in the distribution system with levels of consumption and the comparison of both of these schemes for classifying people with other status systems -- age, sex, kinship, ceremonial position, political position, economic position, occupation, size of farm, type of farm etc.

It seems to me the theory underlying the significance of this information is consistent with economic theory. Given the card game the individual is in, and given the cards he has been dealt, he behaves rationally. Planners must know the rules of the game and the various hands players can be dealt before they can predict or intelligently modify their behaviour. For instance in heavy rainfall areas like Central Province, where production possibilities exist for water, it seems likely these possibilities have long since been utilized, albeit via labor-intensive technolo-
gies. Water is not an absolute constraint as in arid lands. It is an economic constraint. That means a relative constraint -- relative in terms of what each consumer is willing to pay or give in exchange for it and relative in the sense that some households or farms lack it more than others. In the context of all the other production constraints that exist for small scale agriculture in heavy rainfall area, I would hypothesize there is no shortage of water, there is no shortage of labor, but there is shortage of money. Therefore what does piped water save that is crucial? It saves money, but only for those who were paying for their water. For those who hauled their own water it saves his labor, already in over supply. For the professional hauler it gives him water in exchange for the little money he was getting, and for the water purchaser it is a direct cash savings. Hence free piped water to everyone in the scheme -- large consumer and small consumer -- i.e. rich and poor alike, will, in addition to bringing more leisure, increase existing income differentials, unless of course inversion measures were built into it such as a fee scale that charges higher rates in direct proportion to the quantity of water consumed. This of course would require meters.

This brings me to a final pressing issue for planning -- the issue of selection criteria. In the sense of area selection this strikes me as an inappropriate concept. In the sense of selection of a scheme design it seems meaningful. What is needed are schemes designed to be class specific or behaviour specific, not area specific. Thus it may be theoretically valid to have the same basic human organization design in ecologically, culturally and economically diverse areas. For instance correction of inequality in water benefit may be a goal. On the other hand certain schemes may be designed purely on the basis of economic demand with repayment of capital and operating costs as a prime goal.

A repayment scheme might be something on the order of:
- Water Development Division contracts to put in main lines designed for high per capita capacity e.g. 50 - 100 gals. per family per day.
- All connections must be paid for by private consumers -- this includes pipe, outlet system and meter according to standard specifications.
- All consumers pay on basis of repayment and operating costs according to metered consumption.

A rural welfare scheme might have the following features:
- Low per capita capacity.
- Communal points.
- No fee structure except nominal -- e.g. 7/- per year or 50 cents per month.
- Some form of subsidy tax on local product -- milk, coffee, tea, etc -- to repay costs.
- Or no repayment by beneficiaries at all.
- Perhaps most important in this kind of design would be a maximum per capita limit on consumption. (I think this would be easier to organize than fee collection).

The problem of the priority by which administrative areas receive piped water is not a scientific question but a politico-administrative question. The kinds of data which would seem appropriate to feed into the decision making process are basic hydrological, demographic and cost data. Admittedly these data may be lacking in which case it would seem to be a matter of choosing tentative areas, then WDD (Water Development Division) developing more data from survey research for final selection. Data would be generated to substantiate three sets of criteria -- need, social stability and cost.

1) Need criteria:
   - population size, nos. served per unit of expenditure.
   - existing water system and where it fits in a typology of water systems.
     - natural hydrology of area: sources, quantity and quality of water.
     - water technologies: distances, gathering and distribution, approximate consumption per household.

2) Social stability criteria -- felt need for water in relation to means for water:
   - enumeration and description of activities to promote improved water systems.
   - expectations or aspirations for water obtained by means of a standardized semantic differential.

3) Cost criteria -- estimates of costs of different types of schemes for the area.
All criterial data for the areas WDD has to choose among would be cross compared for final selection. Criterial data for appropriate scheme selection could be gathered at the same time.

Whether this research is performed by WDD or IDS (Institute for Development Studies) is not really important. What is important from my point of view is for research designs to assign central significance to the welfare effects of rural water development and recognize the sociology and micro economics of existing water systems as opposed to measuring, or worse still, hypothesizing differences in aggregate income effects of this or that scheme.
DISCUSSION.

CHAIRMAN: I would like to open up the discussion on the two water papers by raising a fundamental issue. The issue is, are the results you are getting in Zaina really representative? This is a very high-income area where most of the people can afford to pay for their water. I do not think the women were spending a lot of time in getting the water. They sat and waited for the water to come to them.

ASCROFT: The findings are representative only of a high-density, high-rainfall area. We recommend in a conclusion that this kind of study should be done in other kinds of areas and in as many culturally different areas as you can find. One would expect more economic benefits in a low-potential area than in a high-potential area. Subsistence farmers, moving from one level of subsistence to another and not crossing the boundary to cash production do not benefit the national economy as they are still at subsistence level.

SMITH: It depends on whether you measure subsistence production in the national accounts. You can say it does not appear as a cash item in the national accounts, but it should be included as an item under "Non-monetary production."

ASCROFT: It is very difficult to measure subsistence because you can only get a general estimate which applies to all subsistences equally. Moving from one level of subsistence to another does not alter the general estimate which remains the same in so far as the national economy is concerned.

SMITH: That is a fault of the national accounting system. Just because these economic benefits are difficult to measure does not mean that they do not exist.

NEYER: It is difficult to work these things out. There may be one thing in one place but it may be much larger in another and the time saved in the first place may be better but the economic improvement might be better in the other place. I think one of the questions here was the criteria we used for these studies. Have you decided on criteria? Has the Government given down any different criteria from these?

ASCROFT: I do not know what they are going to do about this but our recommendation has been that if you want to get economic benefits from a scheme like this, then the government will have to employ special agents whose jobs it is to ensure that recipients are making full economic use of their water.

CHAIRMAN: Would the Ministry people like to comment?

KLASSE-BOS: I think if we read the Development Plan we will see that the impact of water supplies is not only considered in economic terms. I think the Government is committed to bringing rural water supplies to rural areas over a long period even if the economic impact is shown to be not very great. There are some other facts such as social welfare and health benefits which are considered to be important results from water supply development. The danger is there is too much talk about the economic benefits. There is room for the type of multi-purpose research, which will take into account the objectives of providing these social benefits as well as the
economic impact of a water supply both in high and in low potential areas. I have not read your paper carefully but I am surprised to see that there is so much stress on economics where I thought you would concentrate on changes in behavior. An important thing to be stressed is the health impact, on which we have not seen very much done up to now in Kenya nor in Tanzania. To summarise I would say that the Government policy is to provide water to rural areas with the main objective to improve the social and economic conditions of living in the rural areas.

BALIGA: Water can be a carrier of disease and the main purpose of a water supply is to control water-borne diseases. This has not been said at all. The time released is only incidental and I think the emphasis and significance has been misplaced.

ASCROFT: We have noted here, for instance, that the incidence of water-borne diseases in the water scheme areas is less.

BALIGA: I would also like to ask what your definition of welfare is. This is a rural welfare workshop and I do not think anyone has give a definition of welfare. There are some things you cannot measure in terms of money, for example, the health aspects. I think when you talk of the welfare of the people their health is bound to be the most important thing. Health is defined by the W.H.O. as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." There is ample evidence in literature regarding phenomenal reduction in the water-borne diseases as a result of providing safe water supplies. On the other hand, the estimated economic losses due to diseases amount to staggering figures.

ASCROFT: We had nobody competent on our team to measure the health aspects. We were told that that kind of thing was being done in the Machakos water scheme. That is why we did not pay any specific attention to health aspects.

HOPCRAFT: It is really quite hard, short of a very expensive research programme, to find any useful indices of changes in health that might be associated with a water programme. Mortality statistics for instance, are completely unusable without a detailed knowledge of the causes of death. Morbidity statistics are presumably more usable but are really quite expensive to come by. One is therefore left with rather untestable but nevertheless usable assumptions about health results of decreasing the incidence of infectious agents in the water supply.

PADFIELD: One of the issues is how much money we are going to spend on research. The practical basis of the health benefit does not lie with expensive operational examinations of a population; it lies in the simple fact of looking at the water before you purify it and afterwards. We look at the water under a microscope; we do not have to examine the people. Purified water is going to increase the health of the people. I wonder whether the researchers and those from the Ministry have been able to find out whether there is any difference in local participation between the intended water projects and the un-intended water projects?
CHAIRMAN: I think it is true that in Machakos they are going to put in 18 water projects in the next seven years. The people who need water most are those in the dry areas, even if there is no economic argument for it. How do you deal with this problem of siting?

? :In Nyanza two water projects were sited in the chief's area and the local people refused to participate. There were some started as Harambee projects and they were finished within a year. What is the difference between local projects and those that are organised?

GACHUHI: Are you talking about the politics of water? It is possible that these facts are overlooked. Once you have a public water scheme where you have a tap and where everybody can come and draw water, in the long run you find health is actually attached to the water. When you take it into houses this is even more true. It is those people who are already economically well off who actually get the benefit. Those who do not have so much money still have to walk to the water.

HARPER: When assessing projects of this sort in the commercial field it is usual to take the economic benefits and to calculate whether they are viable or not on this basis regardless of the social benefits which may be regarded as an unquantifiable bonus. I think too little has been said about milk. Nothing has been said about the running costs of the scheme. It looks to me as if the capita cost is very small. If we could look at this scheme on its own in relation to the improved production of milk, we might find that the other benefits are free.

KLASSE-BOS: I want to add something on the health side. I have something to say on what Dr. Padfield said just now about the way we can deal with the health aspect under a microscope. The question on which no answer has been given is: Up to what standard should a water supply be treated—whether a high level or some intermediate level. Could we not, for the rural areas, lower the standards, taking into account that the rural people have built up a sort of resistance? In doing so we shall save money which could be used for alternative water development purposes. Secondly, it has far reaching consequences for the Water Development Division, the agency which is responsible for the maintenance of the schemes. If we introduce treatment of water we shall need highly qualified staff. This is the problem on which we need research. We really need an objective and careful evaluation of what are the differences in the health benefits of fully treated water, untreated water and all the intermediate levels of treatment. That will enable the Government to develop standards for water quality in rural water schemes, possibly different from the WHO standards as laid down for urban water schemes.
ASCROFT: No single discipline is able to do justice to a thorough study of the effects of water without involving inputs from other disciplines. We have tried our best to make our research on the Zaina scheme as multi-disciplinary as possible. On the question of the 1965 survey: I studied it very carefully before embarking on the Tetu one. The 1965 survey had no known method of systematic random sampling. It was based on a very few purposive observations made by the surveyors so that it is difficult to make a comparison between the 1965 survey and the present one.

KARUGA: The date of this study is not given. I would like to know the time the field work was carried out and whether this was during the time of the drought. Water could have been at a high premium. If the tanks were dry it could have been because of the drought.

ASCROFT: It was done during the short rains and in our case the area is endowed with all year streams.

HOPCRAFT: At the moment there are thousands of fairly small water schemes coming up for decision, and one cannot possibly do the necessary research on each one. What one therefore needs is a set of criteria for selecting schemes. It seems to me that, without being too arbitrary, one can identify the range of benefits for a given area and put figures on them. One must then bring in costs, which will vary enormously. We develop a system that makes the benefits explicit, otherwise we are shooting in the dark.

ASCROFT: There are two sets of criteria that can be developed to select sites for future water development:

1) Purposive Selection which requires a great deal of reliable information regarding the economics, sociology, psychology, ecology of water development. The information must be reliable and abundant and beyond reproach for this method to work. You can only achieve it by using research such as the type we have reported to-day.

2) Random Selection which is used in the absence of reliable information. By selecting schemes completely at random, one is able to allocate scarce resources without being made to appear unduly biased in favour of one section of the country versus another. Naturally one always aims to move from the realm of random selection where we do not have much control, to the realm of purposive selection where we do.

HOPCRAFT: You do not need full information. Information frequently has a substantial price tag to it. Sometimes a piece of information is really needed, and sometimes a pretty good assumption will do; at least the assumption can be explicit.
ASCROFT: The question comes down to who is going to do the selection. If an economist is there he is going to base his selection on economics. An engineer will have his own set of qualifications. Having partial or insufficient information may be worse than having none at all. I personally do not see this tremendous need to move precipitously toward developing criteria for selection of future sites when we have not been doing too badly with our present rather random method.

? : Related to the selection of sites for water projects I think you have to base it on the experts' view. I know of one scheme in Western Province which was started for philanthropic reasons. After the scheme you tell them they have to pay Shs.60/- per year, and people are surprised. A lot of money is owed by these particular residents and some of them say "You can take away your water if you want." I think researches of this nature should also find out the suitable approaches to these people so that the beneficiaries are told exactly the nature of the scheme and that they are going to be required to pay so much and so on before the scheme is started. That will probably encourage participation.

SMITH: I wonder if the solution to this would be to get as much water development as possible on a self-help basis. The Government's role would be to explain the benefits, plan an efficient scheme, perhaps order the materials and do the complicated work leaving it to the local people to find the money for the capital, to carry out the simple work, and to arrange for its upkeep and continuous financing.

CHAIRMAN: This brings me to the summary. What this discussion has not touched is the important fact that there are a lot of water schemes which are self-help. There are many of these projects in an area like Nyeri where everyone is poor but they all contribute something like Shs.2/- . It is really the mothers without husbands and the old ladies who are involved in this. These other schemes rule out the local people. I think what comes out of the exchange is that we need more scientific studies of water than we have been able to have up to now and we want to collect data of where water projects are.
SESSION 8:  June 3rd  10.00 a.m. - 11.00 a.m.

THEME:  "Models for Planning"

CHAIRMAN:  G. Mutiso

Background Papers:
THE ROLE OF CHOICE IN THE RURAL DEVELOPMENT PLANNING PROCESS

J. Heyer
Department of Economics
University of Nairobi

"To plan is to choose" - Tanzania Development Plan 1969 - 74

INTRODUCTION

A planning process can provide us with the opportunity to improve the choices we make (a) by making the choices explicit so that we are fully aware of the alternatives available to us; (b) by making the criteria for selecting between alternatives explicit; and (c) by providing for the systematic application of these criteria in the selection process. Much of the planning that takes place in East Africa is weak in these respects. With the shortage of personnel to do the planning, the element of choice tends to get neglected. It is difficult to get enough viable projects to implement, let alone alternatives from which to choose. In many fields, any good idea that meets minimal criteria is accepted; any project that is worked up goes ahead. Choices that are made, are made by individuals involved in developing the projects. The criteria for choice may be roughly in line with national or local goals, but they may equally well be random or arbitrary. The individuals who make the critical choices in practice are not expected to make their criteria explicit, and often they may not recognise the significance of the choices they are making. Credit is attached to producing a project rather than to drawing attention to critical decisions at the different stages of its development.

A planning process should be able to widen the range of alternatives from which we choose. There is little to be gained from a careful selection process if the range of alternatives among which we select is narrow. It is at the initial stages that it is most important for the planning process to provide for a broadening of the list of possible alternatives, particularly emphasising new ideas. If new ideas are not put forward at the beginning, they
are unlikely to be introduced later on. In East Africa, many potentially valuable ideas are missed, either because they are never considered at all, or because they are rejected overhastily at early stages of the planning process.

These weaknesses in planning in East Africa contribute to a conservatism in rural development plans which we particularly need to avoid. The failure to produce a wide range of alternatives in the first place, the easy dismissal of potentially valuable ideas that are untried or new, and the failure to see the whole planning process as a process of choice, are, in my view, at the root of the conservatism found in many plans in the SRDP. Rural development planning could be considerably improved if we deliberately recognised the element of choice and made it a central feature of the planning process. Catch-phrases such as: "There are always alternatives to choose from"; "There are always alternative ways of doing things"; and "To plan is to choose"; could appear and re-appear in instructions and planning discussions. At the initial stages of planning specific programmes there could be a heavy emphasis on canvassing all possible sources of new ideas, encouraging people to come forward with their wildest suggestions however impossible, new, or unfamiliar they seem. Nothing should be excluded; the initial list should contain as many suggestions as possible. Once a comprehensive list of all possible ideas had been prepared, it would be relatively easy to cut it down to a feasible short-list. It would be important to get the short-listing done by a suitable group of people with clear criteria in mind, and with a bias towards, not against, new ideas. The short-listing process should not get us back to the stage of accepting only old, familiar, well-tried ideas. The short-list should contain all ideas worth serious consideration, still leaving open a large element of choice. It should be the result of a consideration of everything remotely possible, and the rejection of only those ideas definitely not worth pursuing. In the short-listing process, the reasons for rejections should be clearly recorded and available for scrutiny at any time. One might want to reconsider some of these rejections later on.

1. The Special Rural Development Programme started by the Kenya Government in 1970 on an experimental basis to try new approaches to rural development in selected areas.
The short-listed ideas would need investigating more fully, finding out as much as possible about the alternatives on the list, considering roughly costs and benefits, assembling the information required to make a more careful choice. The assembly and presentation of information relevant in coming to a final choice would be substantially different from the normal budgetting required once the choice had been made. This point is expanded below, after a discussion of criteria, objectives and constraints that guide the planning decisions.

THE BASIC STRATEGY AND OBJECTIVES FOR AN AREA

The choices we make throughout the planning process must be guided by criteria based on objectives and basic strategy decisions. The general goals for rural development might be stated, for the sake of argument, as follows:  

(i) To raise incomes;  
(ii) To raise employment;  
(iii) To raise the level of education and training;  
(iv) To improve the developmental capacity of the Government machinery;  
(v) To increase the capacity of local communities to plan and run things for themselves;  
(vi) To improve the quality of rural life;  

etc. etc. 

These are not specific enough for planning. Whose incomes? Money incomes or some other measures of standards of living? What type of employment? What type of education and training? For what and for whom? The goals will vary from area to area, and their precise specification even more so. The specification of goals will have a marked influence on the type of development plan that is produced. If the goal is simply to raise the total income of the area, it may best be achieved by concentrating on the better farmers. If the concern is with the standard of living of the majority, it may best be achieved by concentrating on food production and nutrition rather than higher valued exports. If the goal is to provide additional employment for young people, it may be

These are not necessarily the rural development objectives accepted by the Government in Kenya. They are listed by way of example.
necessary to introduce non-agricultural activities like small-scale industries, or crafts which do not benefit the farming population very much. To provide additional employment for older adults, the best solution might be agricultural instead. The programmes that are chosen, and the basic strategy for the area, will be very different depending on the detailed goals. If these are made explicit, we can design programmes with a view to making the maximum possible contribution to our set of goals. If the goals are left vague, we are likely to do this much less successfully.

The detailed goals for any particular area are related to its problems, and probably the easiest way of formulating the goals is through a consideration of fundamental problems. Using South Kwale as an example, in asking what the fundamental problems are, we might get responses such as: "People are lazy", "People are backward", "People lack incentives, they are not motivated". "The climate, health and nutritional levels reduce people's ability and inclination to work", "There are serious social constraints", "Land tenure problems", "Insufficient water", "Poor communications and infrastructure", "Overstocking in the hinterland", and so on. From these sorts of statements and from further discussions at the local level, we might conclude that the fundamental problems in South Kwale are (1) Health and nutrition; (2) Motivation and incentives; and possibly (3) Social and institutional problems. Problems that do not arise in Kwale to the same extent as elsewhere are employment, and powerful demands for social and educational facilities.

The specific objectives of a rural development programme are as critical subjects for choice as any other. The choice should be made by means of political processes at the local level. These objectives might be decided on as follows:

(i) To raise the standard of living, not just money income, of the majority;
(ii) To raise the general level of education and training of the farming population;
(iii) To improve the capacity of local people to run things for themselves;
(iv) To improve the developmental capacity of the Government machinery
(v) To improve the quality of rural life.
The employment objective in the national list might be ignored because employment is not a serious problem in South Kwale, and it is unlikely that Kwale would have any special advantages in providing employment for people from other areas.

We might formulate a basic strategy for South Kwale, in very general terms, as: to provide a production programme that is viable and attractive to producers, and that benefits the majority in terms of standards of living; at the same time to take active measures to increase incentives; to increase health and nutritional levels; to raise the level of farmers' education and training; to improve the quality of rural life; and to investigate social and institutional problems further to see if tackling these might be possible and worth while. Throughout the planning of the programme, it would be necessary to consider the objective of improving the capacity of local communities to run things for themselves, and the national objective of improving the developmental capacity of the Government machinery. These considerations would have more influence over the way in which particular programmes were implemented than over the programmes chosen in the first place.

COSTS AND CONSTRAINTS

Planning choices must also be guided by costs and constraints at the local and at the national level. At the national level, the two most critical constraints that need to be considered are probably personnel and funds. At the local level, the resource situation needs to be considered to see where particular strengths or weaknesses lie. In South Kwale, one might emphasise the following (although this is by no means an exhaustive list).

underutilised land
poor communications and infrastructure
Mombasa market
backward, poorly nourished, unhealthy population
weak farming skills
weak organisational skills
few special skills or crafts
sugar factory
? other local industries

From this, one might conclude that the programme should be designed not to be too demanding on outside personnel, local infrastructure,
local effort, or local skills. But it should make liberal use of underutilised land resources, the Mombasa market, and the sugar factory.

DEVISING A PRODUCTION PROGRAMME

All specific programmes should be formulated in the light of the objectives, basic strategy and constraints. In the rest of the paper the discussion is confined to the production programme formulation, concentrating in examples on its livestock components. But the general argument applies equally strongly to the formulation of health, education and training, social and other programmes in the rural development plan. It would be necessary to start with the exhaustive list of possibilities already stressed. A national check-list might be an asset here, although if too long it could discourage careful short-listing of appropriate alternatives; if too short it might exclude good possibilities; and it could easily get out of date. A national check-list could be used in conjunction with the canvassing of all possible valuable ideas.

A short-list of appropriate alternatives for the particular area should be prepared using technical, economic and other criteria for rejection, and biasing decisions in favour of ideas that are new. Many ideas would immediately be ruled out on technical grounds. The crop had been tried and it would not grow because the moisture conditions were unsuitable. The breed had been introduced but it was found to be very susceptible to a local disease. Care would have to be taken to ensure that the technical reasons given really were proven and sound, and that the problems could not be overcome. Economic grounds for rejection might include no market; no possible comparative advantage; too costly in terms of supervisory personnel; too costly in terms of local skills, infrastructure, organisation; and so on. Some of the initial suggestions might be rejected on the grounds that they could not contribute substantially to the programme goals, or fit in with the basic strategy. A proposal that would benefit the richest 10% of the population, at considerable cost, would not fit in with the goals and strategy for South Kwaile discussed above. Similarly, a proposal that had serious adverse implications for
nutrition would be rejected for South Kwaile unless the nutritional
advantages could be countered.

In the short-listing process, it would be important to ensure
as far as possible that technical, economic or other grounds were
not being used as excuses for rejecting ideas that were unfamiliar
or untried. Any uncertainties about the grounds for rejection
should result in the suggestions being left in the short list and
further discussed before any final decisions were made.

We now look more closely at the kind of information that
is necessary for the final choices between alternatives in the
short-list, continuing with South Kwaile as an example, and using
the objectives, basic strategy and constraints for South Kwaile
given above. On the benefit side we need to know (a) which groups
of farmers would benefit; (b) whether substantial changes in the
farming systems would be involved; (c) how much farmers would
benefit in terms of standards of living; (d) whether there would
be any health or nutritional advantages; (e) what positive
linkages with other programmes might be built up; and (f) what
linkages with other areas might be involved. On the cost side,
we need to know what the resource demands would be, paying special
attention to the local and national resource constraints listed
above as important: personnel and funds at the national level;
effort, skills, communications and infrastructure at the local level.

(a) Which farmers would benefit: the questions to ask here include
the following: is the proposal limited to particular ecological zones;
or particular geographical area; is the size of holding important,
are skills and know-how critical; is capital equipment or other
investment important; are the risks substantial; is there competition
within the farm system for labour or other resources, etc. etc? Do
any of these factors limit the proposed development to a particular
group of farms? Some proposals are likely to be more suitable for
large farms, farms with substantial resources, farms with access
to considerable skills and know-how, farms on which risk is accep-
table. Other proposals are likely to be more suitable for small
farms, low skill requirements, etc. This is one of the dimensions
that should have an important influence on the final choice of
programme, and the relative weight that is given to different
programmes.
(b) Incentives and motivations: it is important to ask how much additional effort is required on the farms, what changes in the systems of farming might be involved, what additional risks might arise, and whether the gain is substantial enough to offset these. Some development proposals will involve relatively minor changes on the farms, and relatively little additional effort. Others will make substantial demands on the farm resources and may lead to radical changes in the farming systems. The changes likely to be required on the farms need to be considered together with the estimated gains to see if incentives are likely to be sufficient, particularly in South Kwale.

(c) How much would farmers benefit in terms of standards of living? Benefits from agricultural and livestock production programmes would be in cash and in kind. The concern with "standard of living, not just money income" listed in the (assumed) objectives for South Kwale (p 482) needs to be clarified. One might assume that the distinction between money income and standards of living was made primarily because money income does not include subsistence consumption, and because it was felt that the nutritional value of subsistence consumption could not be adequately reflected in a money measure of total income. It might be argued that any money values imputed to subsistence consumption would reflect inadequately the relative importance of different foods from the nutritional point of view. Further concerns might include the retention rather than sale of foods that are valuable nutritionally; the distribution of gains within the family, between men and women, between adults and children; and the distribution of gains between investment and consumption. Different proposals might have very different implications in these respects. Given the goals chosen for South Kwale, the nutritional gains would certainly need to be considered separately from the income gains, and most of the questions raised here would be important in specifying the gains in a relevant way.

(d) Health and nutrition: apart from the health and nutritional considerations on individual farms, there might be implications from the community's point of view. A proposal to develop water
supplies as part of a livestock production programme might also benefit the general standard of health, for example. A proposal to increase meat production might make meat available at lower prices in the community as a whole, and thus benefit the general level of nutrition. If health and nutrition are singled out, as in South Kwaile, as central development problems, these sorts of considerations ought to weight strongly in the choice of production programmes.

(e) Positive linkages with other programmes: most production programmes provide opportunities for integration with other programmes in the area. Education and training, local housing, communications and infrastructure, health and nutrition, and other programmes should all be linked with the production programme. In deciding between production programmes, what is important is any special linkage that arises from one programme and not from another. For instance, many livestock production programmes could lead to hides and skins and possibly leatherwork development. Special linkages that provide opportunities to develop other programmes should be noted at the stage when decisions are to be made about the balance and content of the production programme.

(f) Linkages with other areas: benefits might arise in viewing the proposals in their context in the country's economy. Increased food production might benefit neighbouring areas in terms of lower food prices and more reliable food supplies. Livestock production programmes might be complementary with programmes in other areas, in providing livestock for fattening, for example. The linkages with other parts of the economy should feature in the initial decision as to whether or not to go ahead with a particular production programme.

Costs: on the cost side, the questions that are important relate to the resources that have been defined as scarce. What is difficult is to decide on the degree of precision with respect to costs that is required in making the production programme decisions.
HYPOTHETICAL DISCUSSION OF PRODUCTION ALTERNATIVES

Suppose one is considering a short-listed proposal to develop beef production, and an alternative proposal to develop mixed beef/milk animals, in South Kwale. What follows is an attempt to illustrate the sort of discussion relevant to the decision as to which of these short-listed alternatives should be supported. It should be emphasised that the discussion is hypothetical. The facts and figures are unrealistic at many points. This illustration raises several difficulties and further questions which will be taken up below.

(A) Beef and (B) Milk/Beef: the proposal is to introduce exotic bulls and cross-breeds to develop cross bred beef or milk/beef animals suitable for South Kwale; to improve disease control, management, marketing and water supplies; with expected increases in returns through better prices and shorter maturity dates in the case of (A), and increased milk yields as well in the case of (B), reduced losses through disease, and improved oxen for cultivation purposes.

(a) The proposals are confined to the marginal agricultural zone, about 40,000 hectares, 13,000 people, over 2,000 families which represent 40% of the planning area and 25% of its population. Potential benefits are available throughout the zone, although in the case of the milk/beef proposal some of the more isolated farmers would not benefit as much as they would find it more difficult to market their surplus milk. About one third of the farmers might not find it worth marketing a surplus, due to communications problems.

Small farmers would find the beef proposal less attractive than large farmers because with small numbers of cattle the returns are lumpy. The problem would be less serious with the second proposal, proposal (B), as milk returns would be fairly regular. There would be no special difficulties with beef which would otherwise limit its feasibility to particular groups of farms. The skill requirements, other investments, and risks involved are all relatively low. The
combination of milk and beef would be slightly more demanding, particularly in skills.

(b) The changes required of farmers would include bush clearing, disease control, and in the case of (B) additional effort in milking and milk-marketing. Radical changes in the farming system would be unlikely, unless farmers found it worth while to transfer labour from current production tasks. Bush clearing can be done at slack periods, and the additional labour demands of disease control and milk marketing are unlikely to be sufficient to interfere with other work, but there is an additional effort required. Attention would have to be paid to the incentive problem in disease control, and bush clearing could only be expected if there were substantial gains that could be demonstrated to farmers convincingly.

(c) The benefits to individual farmers from (A) would be additional cash income and improved oxen, but nothing in kind. The benefits from (B) would also include milk, sold and unsold. What is needed here is some idea of orders of magnitude over time, and some indication of how different groups of farmers would fare. Unfortunately, this is difficult to estimate, but it is here that the critical difference between (A) and (B) is likely to come.

(d) Health and nutrition would improve through water development and through an increase in milk available in the area under (B). Whether there would be any benefit from increased consumption of meat depends mainly on whether the price would go up or down. If the meat were for export, and export channels were developed, the local price of meat might go up and meat might be less available than before.

(e) Linkages within the planning area would include hides and skins only if additional output was slaughtered locally. The more important gains would be from improved oxen, increasing the value of an ox-development programme for cultivation.
(f) As far as the rest of the economy is concerned, an increase in the export of beef from South Kwale would fit in with national development priorities and anticipated shortages of beef in Kenya in the future. With the milk/beef alternative there are unlikely to be any substantial exports of milk. Additional milk production is more likely to be absorbed locally. There might be a reduction in imports of milk from other areas.

Costs: neither of the proposals is particularly demanding of local skills or organisation, nor are there likely to be exhorbitant personnel demands at the national level. The programmes would be costly in terms of infrastructure development: water, dips, stock routes and breeding stations. Milk marketing would be a problem in proposal (B).

This skeleton discussion is far from complete. If done more thoroughly in consultation with people who know more about the area and the technical facts, the kind of discussion set out above could illuminate the major issues and provide a basis for a rational choice in line with the objectives of the South Kwale programme. The discussion does, however, illustrate some important points.

(1) If the objectives are several, and cannot be reduced to a single criterion, as is the case with all SRDP programmes, the discussion leading to final choices between alternatives needs to be broad. It would be useful to have a detailed cost-benefit calculation in money terms, but this should not be given undue emphasis at the expense of the other considerations. It is equally important to avoid giving technical considerations undue weight. What is needed is a broad framework of discussion which really does take account of the broad range of objectives implicit in a rural development programme.

(2) Once the general arguments have been put forward, it will often be found that the choice does hinge on some degree of precision in cost-benefit terms after all. In our example, the choice between the two alternatives comes down to the fact
that (B) is likely to be more beneficial to small farmers, and that (B) has nutritional advantages, but the crucial question is the cost-benefit calculation. How does (A) compare with (B) in terms of returns and outlays? A cost-benefit calculation, however rough, seems unavoidable here.

(3) The discussion above does not bring out all the relevant choices that have to be made in relation to the two proposals. It is not just a question of choosing between beef and milk/beef cattle. There are many more choices involved. Should the cross-breeding programme use AI or bulls? Should there be communal or individual disease control? Should the improved breeds be introduced slowly to selected farmers with careful extension advice, or more broadly and quickly? Should disease control be enforced by the Government or should it be organised and enforced by the local community? Should the programme be large or small in terms of outlays initially? Should it start in a small geographical area? And so on. There are endless choices involved in proposals of the kind considered. Many of them are important and merit careful discussion. The planning process needs to bring out all of these choices, rather than leaving them implicit.

The amount of information and analysis that could be brought into the devising of a production programme is limitless. One has to decide how much is worthwhile. Minimally, it seems clear that more personnel and expertise need to be put into the rural development planning process if it is to produce plans that represent radical departures from the past. New approaches will only come through paying careful attention to the existence of choices, and through careful consideration of alternatives, particularly those that are unfamiliar and untried. This cannot be done at zero cost. It involves more time, more expertise, and more personnel. What a serious rural development programme cannot afford to do is to work to a deadline that leaves no room for anything but a single set of ideas worked into projects acceptable to a Treasury or Ministry of
Finance. This can only produce conservative plans which will not
give adequate answers to the rural development problems we face.
Once it is accepted that extra effort and personnel are required,
one must ensure that these are used to emphasise the role of
choice in the planning process, drawing people's attention to
choices that exist, and providing the basis for rational choices
between them. It would be only too easy to get additional
personnel diverted into working out more detailed budgets.

There is an urgent need for further research to
determine more precisely the kind of information required for
local planning decisions, and to work out methods of data
collection and presentation most suitable as a basis for
rational choice in local planning. In the course of writing
this paper it has become clear to me that we need to do more
work on this before we can say how much and what kind of
analysis is possible and worth while for local planning.
Several reports on the nature of rural development have presented a basic characteristic of rural change in an East African context. They have shown that rural development is built up from a number of basic components which are reflected in the special empirical relationships between agricultural and other rural institutions and existing linkage systems on the one hand and farm activity, community participation, rural trade and other non-farm activities on the other. It is implied in these reports that an over emphasis in the search for durable technical innovations and accompanying investment for extending to farmers without due note being given to the fact that the nature and sequence of acceptable technical advance is closely related to stages in total social development, is understating the case and often wasteful.

The concept of total social development is not new in applied social science. The basic assumption in the social sciences, that behaviour is patterned and systematic leads one to reject any claim that development activity, a basic human enterprise, is characterised by erratic shifts, discontinuities and inconsistencies. In our study in Eastern Kenya, for example, (Moitni 1969) we constructed cumulative scales of increases in farm level complexity. We found high degree of intercorrelations between scales of Farm Mechanization, crop husbandry practices, household level of living, social participation and formal contacts. In fact these scales...
also intercorrelated highly with specific farm level indices such as adoption scores, farm level income, feed crop ratio, farm acreage and cash constraints etc.

The concept of total social development also leads us to believe that there would be considerable group or structural effects on farm performance. Indeed the Kenya-Buganda study (Mbithi 1971) showed that farm performance was also a function of locality social attributes i.e. village reference groups' influences on the farmer and his family; village infringement on farm resource allocation through demands for participation in communal labour, funerals, and other community functions; kinship and friendship ties etc. These structural aspects which also relate the farm to the available technical services and linkage systems pose a serious challenge to the assumptions underlying the theory of the firm, a basic economic paradigm often used as a frame of reference in the analysis of peasant farm levels decision making processes. (Wills 1968).

In this paper therefore two alternative approaches to rural development are compared to test the extent to which they incorporate the implications behind the concept of total social development for applied work and research.

THE MESSAGE MODEL

Consider the following statement: An agricultural assistant sees a poor cotton field, diagnoses the problem as one of nitrogen deficiency, prescribes a fertilizer application schedule, and subsequent cotton yields increase. This statement could be transformed to the institutional level, so that it reads: A representative of a change agency notices a whole agricultural region with poor technology and proceeds to research, obtain and introduce a packet of superior technical innovations after which there is the expected boost in productivity. That basic form may be diagnosed as follows:

<table>
<thead>
<tr>
<th>Representative of advanced system or institution</th>
<th>Diagnoses of problem</th>
<th>Prescription given which brings about adjustment of a change in the client-receiving system</th>
</tr>
</thead>
</table>
This diagram brings out the salient features of what may be called the "message model" in applied science. An advanced institution has representatives who make contacts with clients or other problem areas. They diagnose a problem and propose a solution to it, and it is assumed that the diagnosis and solution derive from the body of theory and practice pursued in the representatives' field of specialization.

This model has several basic assumptions:

(a) The treatment is assumed to change the adaptive capabilities of the recipient system for the better.

(b) The link between the specialized and receiving systems is the message. In all cases the expert conveys a specialized message.

(c) The message flows from an advanced structure to a less sophisticated one.

This model seems to pervade thinking about the applications of modern science. Thus we set up vast "extension" systems, use mass media, organize mobile clinics, mount up campaigns etc. The model defines the role of the applied worker as that of an Interventionist. Although his work takes many forms, ranging from total take over as in most tenant schemes to the most subtle redirection, the general intent is to change the direction of activity of the peasant farmer, his family and his community.

Although the main features of this model and the role of the practitioner seem clear enough, it will serve the purposes of this paper to analyze the additional underlying assumptions further.

(1) It is assumed first that the two systems are fundamentally distinct entities, linked only by the message of the applied worker. Although the applied worker may often get very close to the recipient system, it is assumed that his intellectual starting point is with the specialized systems. However, any agricultural officer who has had to chase his J.A.As from market places, "Pombe parties", aimless cycling all over the country side etc. would share our skepticism on the tenability of this assumption.
(2) But the more challengeable assumption is that of treating all rural social units - the farm household, the community as stereotyped homogenous recipient systems. Thus, in diagnosing what went wrong with our flow of technical innovations, we never look at some very salient intervening variables such as the characteristics of the recipient systems. In this context, the potential to adopt - in terms of resource availability, economic feasibility etc. become auxiliary as the emphasis shifts to such dimensions as the systems structure, its adaptive capacity or potential to differentiate.

(3) The third assumption is that there is some kind of irreversible transfer of knowledge and technology, and moreover, that there is a favourable or healthy direction of change towards which the clients activities can be re-directed. This assumed direction is not always so simple as the difference between sickness and health, but it can usually be defined as a sort of optimum. Thus an agricultural officer is satisfied if his farmers take up hybrid or synthetic maize even though they never balance their diets, and similarly an economist may be satisfied with the elimination of farmers in the marginal farming regions even if he does not solve the problem of income disparities, malnutrition etc. between high potential and low potential regions.

To suggest that this "helping" model is wrong or in any way deficient is almost like saying that all one ever learnt about participation of professionals in effecting change is wrong. It obviously works. Or in a more skeptical tone, something obviously works.

Those who defend this approach admit that there are problems, of course, such as lack of knowledge in certain areas, especially as it needs to be adopted for special problems in localized cases. Also they concede that the distribution of specialized knowledge is never as satisfactory as it might be. Then too, there are many stubborn resistances among the people who should be making use of such modern knowledge. They have little readiness for change or innovation and in some cases they have been known to reject these gifts out of hand. But these problems, they claim, are merely temporary, and do not undermine the basic worth of the model.
Criticism of such a widely accepted scheme is virtually impossible unless it is contrasted with another strong interpretation in an attempt to make the criticism more evident. However, a number of criticisms may be made apart from the comparative interpretation. In the first place, the message model tends to ignore the fact that the contributing and receiving systems must always have a special relationship. Although it is often tried, a specialist cannot simply work with any type of problem case. Some groups simply do not understand the message and others tend to ignore it. Results are achieved only when there is a complex social relationship between the specialist and receiver. For example, modern agricultural technology requires "educated farmers" who can follow and appreciate technical arguments. Thus the diffusion of technical innovation is normally biased toward the more well-to-do farmers - with accompanying problems of income disparities and social stratification. The message model has no inbuilt checks to minimize this bias.

A corollary to the above is that the message or particular technological contribution is never an isolated event, if it is effective. When a specialist has lived close to a given client population and has studied the characteristics of it all his life and if his specialized group has contributed indirectly to the general education, then the one additional message he may offer as he makes his prescription is merely another unit in a long and complex flow of information. Hybrid maize does not succeed just because it has been bought and planted. It required an accompanying set of practices and its introduction is simply a part of a complex of advice. The message is merely an enlargement of a total information environment. Thus the message model loses its simplicity when one takes into account the broader context into which the message is put if it is to succeed. Such an environment is always larger than the capacities of the particular specialist as our experience in East Africa shows.
Similarly the message model ignores the fact that the specialist is the representative of the larger system. While common sense tends to see the individual specialist as the "cause" of any change, it is just reasonable to think of the whole specialized institution and its containing community as the cause or instigator of the message. Again the model tends to blur, and if we enlarge our picture still further and understand that in these places where messages have effect the specialized institution, its representatives, and the client population are components of one social system and it is impossible to speak of one component without the other, then the whole conception of two autonomous systems linked by a message vanishes completely. This in essence amounts to a rejection of the center-periphery dichotomy in its rigid interpretation.

DEVELOPMENT NEEDS

The current S.R.D.P. programmes in Kenya and development orientation in East Africa in general strive to achieve several policy aspects:

(a) A choice of development strategies which in addition to rural welfare in terms of providing needy social services and raising rural household level of living must also have inbuilt mechanism to enhance equitable distribution of income which accrue from developmental efforts.

(b) Optimum participation of all rural people in the widest possible assortment of tasks which are legitimized not only in terms of economic feasibility but also by the current local social definition of the development situation. The implication is that at times economic prerogatives may give way to current social sentiment.

(c) Total participation of all rural people as a political goal since this would reflect increased national solidarity, which in turn has implications on patterns of social mobility and political stability in the long run. As one upper class land owning Chilean told me, "the only way to avoid peasant uprisings is not to divide the land but to give them an apparent chance to become land owners themselves." This short sighted
materialistic interpretation strangely enough
also points the issue of participations
and social mobility as being central to long
term political stability.

As will be obvious from the above discussion, the message
model does not satisfy the above three policy areas adequately. It
is nevertheless possible for us to suggest a complimentary but not
necessarily an alternative paradigm. This paradigm may be labeled
the "system model". One possible interpretation of this model is
derived from the dramaturgical framework of Goffman (1959, 1961 and
1963) and Burke (1957 and 1965) and that of the symbolic interactionists
such as Cooley, Mead, W.I. Thomas etc.

This frame of reference emphasizes that all institutionalized
behaviour is the result of collective definition of the situation,
that all reality is meaning and the artifacts, material structures,
symbols that man builds are processed information which conveys
meaning. This highly abstract theoretical orientation has been also
expounded by other sociologists such as Smelser (1963:8), Wallace
(1956:265) and Bittner (1963:932) whose major emphasis was on how
cognitions and meaning are patterned to give collective action. They
analyse social action in terms of concepts such as "the construction
of unified, internally consistent interpretation of the world,"
"construction of a more satisfying ideology", "dramatization" and
"ritualism" as basic concomitants of mobilization.

In this framework, the peasant farmer, for example, is
carved as living in a dynamic and fluid environment, one that is
full of complex cognitions, values, beliefs, artifacts and one that
is changing. He is not apathetic, childlike, at the beck and call
of every change agent "officer", but a creative actor, attempting to
cope with his teeming world through the best means which he is able
to devise. The peasant farmer must not therefore be seen as a part
of undifferentiated "rural masses" but as a member of complex social
groups with complex often conflicting demands on him. Such groups as
kinship-lineage groups and assemblies, age-sex groups with their
variable taboos, religious and ritual groups, when mixed with
membership in cooperatives, political parties, adult classes at F.T.C.s etc. make strange bedfellows. Yet although these different groups publicly discriminate diverse meaning areas, all these meaning areas must be institutionalized into the rural systems, explicated and correlated to other areas of meaning in a complex matrix of cognitions, values, beliefs, aspirations, obligations and commitments which truly denote the farmer as a product of his culture and subsequent socialization processes.

In action terms, the farmer, as an economic man must see his farm not in disconnected segments but also as a cultural artifact, the absolute personalization of his and his family's life. Thus one is not surprised to see a farmer tying a magic charm to the frame of his tractor plough to reduce the frequency with which the shears hit stones or stumps. After all, how many of us do not feel that the farmer is rationalizing some very basic processes when asked why he did not do this or that and he argues he did not have money, his wife ran away or was sick, the soil is poor anyway etc. My immediate feeling is that he simply wishes to satisfy me by giving me the arguments that I would like to hear. If he were really to unburden himself, how would I understand that grandmother fears a horrible curse on the household if he puts fertilizer over his great-grandfather's grave in field B? How would I understand that his rights to field C, which is planned for Macadamia nuts, are not absolute because grandfather's third wife's hut stood right in the middle of it and his uncles (working in the city) reserve the rights of disposal or reversion and his rights of use are temporary? How could he begin to tell you all this short of making you one of the tribe and clan?

An immediate implication which can be derived from the above discussion is that every rural social unit - the household, the locality etc is screening all incoming technical information in terms of its highest level of complexity of meaning structures. This suggests that the specialist working within such a system is not only limited by it but he is presented with the possibility of working up to such a level. What we are in effect saying is rural social systems do not exist in a vacuum; not even a technological vacuum. In our research (Mbithi 1969) we found that farmers had strong alternative traditional agricultural practices to the use of fertilizers, dusts, spacing etc.
A clear sighted and perhaps humble acceptance of the change agent's role as an explicator therefore would be to make it possible to exploit the considerable potential for change within the limits of the level of complexity of the system. For example, if complexity is indicated by a wide gamut of ideas, then it is very likely that many communities, many households etc., such as those guided by a strong religious orientation that is more sophisticated than the traditional view, may be ready targets for the applied message. Similarly many poor families may be able to process much more information than their income levels would suggest and therefore may become clients with considerable potential. This suggests, for example, that our system of identifying potential entrepreneurs through the use of purely economic and materialistic criteria may serve to alienate and scare away other kinds of entrepreneurs.

**A MAJOR IMPLICATION OF THE SYSTEM MODEL**

Development, viewed as an increase in complexity of farm and community operations, artifacts, institutions, symbols etc., cannot be monitored by the use of single less inclusive variables such as income levels, number of crops adopted, number of practices adopted, etc., as this taps only a limited dimension. A rural Welfare approach would emphasize total change which would incorporate traditional mechanisms, artifacts etc. No attempts should be made to establish cutting points for reality, such as, traditional - modern, as this denies the need for consistency and cummulation in change.

**CURRENT APPLICATION OF THE SYSTEM MODEL : IN KENYA**

The notion that rural development is a collective activity involving all rural people and not that of a few field officers extending exciting ideas, had been tried in Kenya and Tanzania. The Tanzanian Ujamaa Village approach to rural development with its strong emphasis on village self reliance is a relevant example. (See Eilman 1970; Raid 1970). Another example which applied to Kenya is the clan based Harambee Self Help Movement (HSHM). Both movements emphasize the creation of fully internalized collective (village, neighbourhood) definition of developmental needs, resource potential and limitations, which in turn leads to local programmes of farm and community development action.
The approach used in Kenya which exploits traditional
kinship organizational and communal work patterns and hence
maximizes social control, group discipline and individual
participation is a significant improvement over past approaches.
The most well known past approach to rural change for the period
1946-1960 for Eastern Kenya for example was in the form of
successive campaigns (Mbithi 1970). Of the approximately ten
campaigns recorded for this period, none had any lasting measure
of success. Such campaigns as forced communal dam making, pit
latrine digging, communal terrace making, compulsory road
construction, soil conservation and pasture quarantines,
destocking, compost manure making etc. tended to alienate the
participating parties - the change agents and the recipient rural
system.

On the other hand, the HSHM approach minimizes governmental
change agency patronage and financial commitments (an important
point with the Treasury) and maximizes individual participation on
exactly the same projects which had been costly to the colonial
governments and had failed to achieve lasting benefits due to non-
participation and take over by the rural people. The current self
help projects in Eastern Kenya for example include road making, dam
construction, building school houses, community halls and maternity
wards. This effort is not channelled into farm projects such as
weeding, ploughing, bush clearing, irrigation, farm house construction,
terrace making, field manuring and harvesting as often as one would wish.
In 1967, Eastern Kenya had 3565 projects under way and 2185 had been
completed.
The total valuation approximated £312,500. At Karaba, one of the
villages studied by the author, the construction of four dams, two local
roads, a secondary school, a nursery school and the clearing of bush
for cotton blocks were under way during the study period (1967). The
chief and the locational - treasurer estimated that over 60,000/-
shillings worth of money and donations in kind, excluding labour, the
largest contribution, had been collected. For a sublocation of
1500 households, this amounts to about 40/- per household head.

3. See Department of Community Development and Statistics Division of
Ministry of Economic Planning Joint Report - "The Output of Self Help
Schemes" Nairobi 1967 (Mimeo).
The dynamics of a self help project cannot be presented in this paper. But past studies show that the critical elements in its success are (a) the traditional organizational base (b) the autonomy of participating units and resistance to government direction and control, (c) government support (d) the acute hostility towards individualism (e) dramatization of behaviour leading to a focused definition of membership, participation and leadership; e.g. the use of uniforms for clan members, clan flags with totemic signs, the "Mercedez Benz Weddings" of presidents (f) the elaborate verbal praise given to donors no matter how small the donation, (g) the process of political co-optation into political elite systems etc.

Given below is a Guttman Scale showing the cumulative sequence of increasing clan solidarity in a self help action situation. This demonstrates an increased patterning and focusing of meaning in terms of the current rural developmental situation in this area. A local group with a traditional base begins to define its membership, its objectives and continues to grow as an action group. This is only possible if it has a focus (scale step 4) a structure (scale step 5), linkage (scale step 6), flexibility, mobility and capacity to grow (scale step 7) and has a modern legitimizing and aspiratory base (scale step 8).

The government Report on Self Help states:
"— -- -- -- The statistical facts presented in this narrative summary cannot convey the excitement and enthusiasm of the people themselves. The story of working together, of detailed planning of hours and hours of manual work, given freely and joyfully, of collection of thousands of shillings from persons to whom each shilling represents a real sacrifice -- -- statistics cannot give the true picture!" (Department of Community Development Report Nairobi 1967).

4. See the authors Conference Paper on Self Help Interpreted as a Solidarity Movement for a full discussion on the allocation of tasks, role differentiation and traditional aspects involved (Mbithi 1970).
A GUTTMAN SCALE OF CLAN SOLIDARITY IN SELF HELP KIMUTWA SUBLOCATION

<table>
<thead>
<tr>
<th>Scale Step</th>
<th>Item</th>
<th>Errors</th>
<th>% Sample Discriminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clan has a name and well defined membership.</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Clan is competitive in project activity</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Clan has uniforms, badge, flag or conspicuously displayed totem or mark</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Clan activity is basically female activity supported by clan males and clan norms</td>
<td>1</td>
<td>60</td>
</tr>
<tr>
<td>5</td>
<td>Clan has definite area of activity within a self help project.</td>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>6</td>
<td>Clan has definite division of responsibilities e.g. Song leader, vice president, clan father, marshalls etc.</td>
<td>0</td>
<td>47</td>
</tr>
<tr>
<td>7</td>
<td>Clan has ambassadors</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>8</td>
<td>Clan has expanded membership by absorbing one or more smaller clans or lineages for self help activity only</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Has won trophy or symbol or recognition from President or his representative</td>
<td>1</td>
<td>13</td>
</tr>
</tbody>
</table>

Total Cases 15 clans.
Coefficient of Scalability = 0.85.

Compared to earlier approaches where change agents often despaired because people were "conservative," "uncooperative," "lazy" and "apathetic," the transformation is quite startling. The organization problems of (HSHM) are in fact quite the opposite and refreshing; such as problems of overparticipation leading to a disregard of official programmes in favour of own programmes, a steadily increasing drain on farm resources to finance capital structural projects of dubious utility; an inverse relationship between government patronage and self help activity etc.

The Harambee Self Help Movement may be an extreme example but it makes the point that any government-sponsored change programme must be built into the community structure if long term commitment is to be achieved. Moreover, if some traditional group (such as the Harambee Self Help Movement) actively takes on community development projects, this objective might be achieved.
GENERAL CONCLUSIONS

(1) The message model as operationalized in the field through the extension services does not on its own stand as an adequate and sufficient strategy for change. It has no inbuilt mechanisms for generating self-reliance even in non-technical operations. It normally leads to the perpetuation of a class of privileged farmers as the nature of the "message" and emphasis on dramatic results leads change agents to patronize certain farmers, either deliberately for demonstration effect or by sheer inertia. Effecting rural change is not like selecting the best students in a class for further scholarship (credit, advice, subsidies) since the yardstick for potential to change has never been devised and is a subject of active controversy between Social Psychologists, Sociologists and Economists.

(2) However, the applied message model still remains the best vehicle for transmitting technical information, such as research findings. Thus the teacher-role of the change agent has no easy substitute.

(3) Nevertheless a community approach to planning and implementation of local programmes is essential and must not be dismissed as wishful thinking simply because we know very little about community action so far. Those in Education are excitedly experimenting with the educative potential of small T group arrangements. Those in policy making strata are worried about apathy and lack of leadership among rural people. They are further worried about active polarization between centre and periphery leading to the often frustrating failures of otherwise very attractive programmes. Just as the message model has no easy substitute, so is the explicator model.

Recommendations:

(1) Rural Welfare research, and thus rural development research has to be mounted on a multidisciplinary basis. While this recommendation does not deny the need for single discipline exploratory research, we are all aware that single focused research projects often leave loose ends or often tie them up loosely under the cover of weak, untenable analytical assumptions. In rural development research, the more likely it is for the applied socialist to suffer from trained incapacity a sort of academic myopia.
(2) Adaptive research, which seeks to identify the attributes of indigenous rural institutions, very much in the line of the current medical probe into the nature of traditional medicine is long overdue. The uncritical emphasis on rural transformation, an approach which finds loud support from economists sadly lacks a wider view on the nature of society, its structure, its dynamics; especially a post colonial society, with so much to copy and such few unbiased evaluative criteria. We are not advocating a new wave of anthropologitical studies although such studies for the Kenya of 1971-72 and not 1932 would be welcome. We are rather, advocating community emergent structure studies; such as leadership studies, rural elite studies, rural groups studies and how they fit into community decision making, planning and implementation of programmes. At the farm level one does not know the nature of resource control patterns, role-task allocation, especially for a typology of farm types, agricultural regions and farming systems.

(3) In applied work, the following recommendations are possible:

(a) The message model need not necessarily aim at the single farmer. A group approach to extension such as method demonstration sessions, a more critical use of mass media, group visits, FTO training which emphasises group learning rather than class teaching would, according to our analysis increase the effectiveness of the message.

(b) The exploitation of traditional mechanisms for social control through the adoption of traditional methods in self help and cooperatives activities; the extension of the 4k concept or even the principle of scouting to age-sex group of teenage school
drop-outs in an effort to mobilize more rural people for a multiplicity of development projects, all show promise in terms of our analysis.

(c) The promotion of village planning and development committees for a legitimated focussed assessment of community needs, resource availability mobilization techniques and linkage patterns with field services is also recommended. Some of Kenya's elites are often skeptical of the planning powers of local committees. They often quote the inability of such committees to even go through a single item of business or even understand planning jargon. But our position is that the need for involving rural people in planning and programme implementation far outweighs our distaste for their techniques and "efficiency". In any case long term training and exposure to our techniques in action situations might eliminate these problems.


Heyer, J. et al. (1969) Rural development in Kenya, a survey of fourteen districts. Institute for Development Studies, University of Nairobi (Mimeo)


Wills, Jane (1968) "Peasant farming and the theory of the firm" R.D.R. paper No.68, Kampala, Makerere University College (Mimeo).
DISCUSSION.

CHAIRMAN: It is increasingly becoming obvious that people are participating in decision making. This is the nature of Harambee and what that entails is the organization of the rural areas. There are going to be some very interesting materials coming out of that kind of research. I would like us to address ourselves to the particular issue of participation. We all say we would like to see participation but the very things we create deny participation or choice. We should increase participation at the local level.

PADFIELD: This is something we all have to agree with and yet because it is so obvious I wonder why it is not being done. I have thought a great deal about it during the 12 months I have been here. What is the role of the culturally isolated expert? There is an assigned role in this society for the isolated expert. I think this is really the overall Government mentality in Kenya and I do not think that the culturally isolated expert is so much to blame for the lack of participation by the local people. I think the real blame lies with the mentality of the Kenya Government. What role does he have in the political system of this country?

CHAIRMAN: Perhaps the Government representatives would like to comment.

GERHART: I think the most encouraging point that has been made in this conference is that a lot of people have said that rural development is too important to be left to expatriates. Having worked on this pilot rural development programme since 1968 this is the first time so many people have really cared enough to want to be involved. The programme has been strongly supported by donors. The prospect of getting £3 million (that has been raised so far) has helped the Government to consider this question in the intensified pilot context which means getting as much research involved as possible and as many individuals as possible. Some people are even beginning to say there is too much attention given to rural development. The Government is still overwhelmingly concerned with formal education, industrialisation, and urban development. Rural development and rural people do not have the power to make their interests the primary concern. The high levels of the Civil Service are very committed to rural development, but the general political commitment still is not strong enough.

CHAIRMAN: I do not want us to discuss this at that level. There is a serious issue being raised that there is much more going on in the rural areas than meets the eye. This is strictly in terms of a national process. We are talking about rural change. There are some changes going on but how are they related. This is the fundamental question of expatriates but in terms of doing and in terms of getting where we want to go.

ROLLING: You implied, I think, that the change agent has the ability to impress a solution on the representatives. Therefore, you say you think it is time the representatives had a say. I do not think anybody who is not under a police force or something like that can be forced. You cannot enforce a prescription on an independent decision-maker. I think most small-scale farmers are independent decision-makers. Therefore, I believe that one can only change independent decision maker,
if you are able to make them see that your 'prescription' offers a solution to their own problem. Progressive Farmers, who tend to see their problems clearly, therefore have to benefit more from extension.

**MBITHI:** If you read some of the examples I gave in my paper you will see there are about 20 campaigns cited. The agricultural officers used to go around with the chiefs and force the farmers to do things. There is a lot of use of force in extension. If a farmer behaves and follows the extension officers advice he gets credit and more visits, etc. All these things, in fact, are an indirect use of force. In fact, the change agent has too much power, if we analyse it as the ability to force compliance against one's inclinations. He can withhold loans from a farm, pursue loan default mercilessly and, with aid of the chief, confiscate stock etc. We still have conservation laws, stock quarantines etc. All this goes to counter your argument that change agents cannot force issues. Our immediate problem is, when do we have to force issues and when do we have to use persuasion and salesmanship.

**SMITH:** This all suggests that there is a consensus in this room; that it is vital that we give people in rural areas more choice to do things they want to do themselves. Dr. Gachuhi has discussed the problem of convincing people at various levels in the political process that this is so. Why do we have to convince these people before we take actions ourselves? People are writing divisional plans for new SRDF areas. Are the civil servants responsible for this in a position, without getting authority from somebody else, to try to turn these over to the local people and give them expert information on the choice they might make? Do you need permission from somebody before you try it? The same with people in charge of the extension services; do you need to have orders from somebody else before you start changing the nature of the extension service? Are you constantly having to ask somebody about changing the process of planning and services to the rural sector?

**GERHART:** The whole idea of the SRDF was to get something started. Getting something started means all this discussion that has come up. At the moment people in our Ministry feel, quite rightly, that we cannot do more decent plans without more Kenyan officers. This is one reason why we wanted the IDS to help train planning officers. To take on a whole new set of divisional plans I think would be a mistake until more has been done about the best way to do it.

**BALIGA:** This touches a field I have been interested in for about 10 years: the community development approach. I think what needs to be done in order to bring about rural development, or welfare if you will, is really not an analysis from experts as they are going to pick up these new discoveries etc., with the greatest of ease. To my mind in order to bring about rural development and until experience has shown that all our efforts are followed, the new approach should be some kind of campaign or propaganda - of the kind which is happening in Tanzania today and this is called political education. I would like to endorse Mr. Hopkin's remarks that really in order to bring about rural development efforts ought to be preceded by development education in the form of a campaign. People should be educated thoroughly before the experts tell them the things they could do in their respective areas.

I would also like to remark on Mrs. Heyer's point of
choice, or rather of planning, and that is tradition has shown that plans have always emanated from the top and as far as I have observed this has not been very successful up to now and so it has been suggested that a change should take place and the plans should emanate from the bottom. They could start from the grass root level and I think there would be very many benefits, as many of you people have suggested this morning. However, when we involve people in their plans we have a number of other considerations. I was rather disappointed yesterday on the paper about the human factor because I thought this factor of rural development would have concentrated on the considerations such as people because people are important and people can manage their own affairs. However, unfortunately, it concentrated more on the international aspects and so on. I would like to say that to improve rural welfare I think we have to revolutionise the traditional approach to this.

HOPCRAFT: I think that it is important not to confuse local decision-making with abandoning people to their own devices in the rural areas, telling them that it is all up to them, and absolving ourselves of responsibility. It is going to take a good deal of accumulated knowledge over the next few years to know what successful rural planning entails. Between us we have some ideas but we don’t yet know how to go about it. If rural planning is going to work out, what data is necessary and how is it best gathered? Clearly one must have personnel who are trained and conscious of the various issues that need to be raised, trained to perceive and evaluate the choices available. Without the necessary personnel, and without some minimum data base, one can hardly talk of participation in planning at the local level.

CHAIRMAN: In one of the papers it says that the people should get the data. One specifically mentions the University in this role. Obviously this is a major, fundamental decision. A lot of departments need personnel, so what do we do? What kind of data are we looking for?

HOPCRAFT: By economic data, one first of all means information on what is technically feasible, technical and biological data. Beyond that, one presumably needs a pretty good idea of costs and returns for the feasible possibilities. What are production costs? What is the transport situation? What is the market like? This kind of thing. In general, it does seem to me that if this University is going to be involved in something like rural development and rural planning, then we need to develop some expertise and knowledge on the subject, and we need to be involved in some way in training the people who are going to be doing the job. The development of a rational decision-making capability in the area of rural programmes and projects would seem to me to have the highest priority. And to my mind it is within our grasp. The necessary expertise is available and there is a good argument for the University being involved in it.

GACHUHI: One thing we have not raised - and it is unfortunate - is that we need an education paper. We, as University-based people, have not answered the question of the role of our national university; the whole question of helping the process of development in this nation. I cannot help thinking we will sit here
and come up with results and so on and when it comes to something which is complex and at the same time simple - that is implementation - we, the critics, are very people who, in fact, refuse to go out there into the bush. There are of us who are armchair philosophers and who just sit here and write it down in books. After we have talked and come up with resolutions are we, get going to pursue them by actually getting ourselves involved, or are saying "these are the problems, you other chaps take the steps."

HI: This is the question of at what levels the experts get involved and the local people get involved. It has been argued that the rural people cannot go through one item of business; they do not know how to plan and what you are asking of them. But in planning you cannot be rational all the time. Emotion comes into it a lot. The question is how do we modify and the local people the incentive to get involved with the local schemes. Identification of needs comes from the belly upwards, local people need to emotionally involved in rationalizing their needs and only after that can a trained planner transform these needs into planning language.

MRN: Planning for what? If you assume planning, people are going to tell people what to plan for. Once you know what alternatives there are, a expert, and once you know somebody along the way has to make a decision which alternative to follow, it is easy. It seems to me that that is a very serious issue and that one aspect of local participation comes up. You are used to be doing these things as pilot studies. This is where you are used to come out with the idea of how Government is going to do it in the run.

HI: I think local participation, as far as SRDP is concerned, is going to emerge, it depends on the people who are given the responsibility to work through and the approach they take. I think we are finding in local participation and decision-making and you can see this if you at the plans. They are almost re-writing the plans. It is a very slowish and a very difficult process when somebody's education is so limited, if in the community somebody is willing to go in there, not as a boss, but somebody trying to work with them then you will get tremendous results. If people have insight and they know what is going on there much better than we do. In the long run it is the picture we open for these people if we tell them what to do or we go and show them what to do. As long as go there as a bunch of experts the local people will not do anything. They will just let us plan things.

IRT: The first requirement in development is to clearly list the alternative cases of action to enable people to make decisions. Academics are well used to produce such lists and to take them down to lower levels of government where they do not have the facilities for listing alternatives. We take down and teach them how to follow the alternatives, but in the final analysis the selection of alternatives has to be done there. Now they get three quick alternatives and there is no planning. They make up statements about it and things like that all based on two or three hurriedly put together alternatives. We have to slow down a bit, to take more time in listing a more comprehensive list of alternatives.

HI: This is not true. I think one of the things about decision is that it is a communal decision. We have some very powerful systems when they are allowed to make decisions.
? : I think you used the right phase when you said to go down to these people. If you did I am afraid most of the experts in this room would be disappointed. I have taken part in some actions which have been planned over the heads of some people for a long time and the students have started to do something where they involve the local people in different areas and it seems, for me at least, that it has not been possible for the educated people simply to understand what the people are talking about, and they are not willing to do it. As far as I can see the only results have been projects where students have done a little and ingratiated themselves with the people they are aiming at. I am afraid that a lot of the participants in this seminar would be really disappointed if they had to go down to that level. It will take a longer time than we believe. People in this country are not used to making decisions.

MBITHI: You can go round in a Landrover and not see people in action. The history about Kenya is the usual thing where people are told what to do by Landover riders. The assumption is that they are not allowed to make their own decisions in their own areas of competence.

SCHILLER: It is very interesting to hear this talk about popular participation and planning. I think it is most important because I think there is a lot of expertise living out in the villages. One thing I would like to say is that you mentioned that there are quite a lot of people who really know about the situation when they go out. Have you invited any of these people to this conference? If they are the experts why are they not here. Even if they cannot present papers they do not know the local language. There were people who put forward a lot of things to me, but there again it was a problem of language.

GACHUHI: I think your problem is well taken. We did have some people and we wanted their viewpoints so we invited them but unfortunately some of them could not come. There is a problem of the language. It does not mean that these people who are experts, because they are not here today, that they do not participate in seminars of this kind. We are having them all the time at the local level with the district officers and so on.

PADFIELD: It seems to me that it is our job not only to educate the people at the bottom but to educate the Government, the expatriates as well as the Kenyans.

CHAIRMAN: We are talking about Kenyan academics. I think if you read the papers some of us have written it is quite clear we think of different things. We can go out into the country and do the research whether the Government utilizes it is really a decision which they ultimately have to take. Our role is to provide the information and alternatives.
ASCROFT: There is the problem of the expatriate's culture impinging upon the culture of the host country. These are two different cultures and two different frames of thinking in these two different groups of people. I have noticed very frequently an absolute loss of words on the part of one of these to reach other.

ROLING: This is a very fundamental issue. On the one hand the expert who is able to make a list of alternatives and on the other hand the local man who has to have the authority and responsibility to carry out the plan. I think it is a tremendous problem to merge the two. I have had a workshop in Holland with some students and have not been able to give them any knowledge. The students completely took it over. On the other hand, if I gave a lecture it would not have helped either. I think we have a fundamental problem first to develop a list of alternatives and then have the local people recommend some alternatives as if they were their one. I think one of the problems with experts is not that they are going round like experts but that they do not know how to solve this problem.

?: The problem is also extension officers trying to do their thing and administration officers trying to do their thing on their different lines and you find very little creative thinking among these experts. Some of them hesitate to get ideas because others do not participate. I think there is a lack of uniformity in the development of our rural situation. I wonder whether research could be done as to how best information or ideas could be spread in the rural areas.

TEMU: One point is that we talk a lot about alternatives and this is very important in our jobs. We are trained to be able to see clearly the alternatives and put them before the farmers and so on and let them participate. I would like to go further and say perhaps one reason why we do not get as much response and general participation from the grass root level is may be we are not offering genuine alternatives and we have not decided on the goals and objectives that the people themselves want. The person to whom you are talking may not be at all interested in your political goals and he is not given the opportunity to decide for himself that this is really the goal that he wants. It is no use expecting him to be responsive. In this way we should go behind this and see whether the farmer has enough motivation and understanding and so on and he has chosen this particular goal himself. Without this it is probably a waste of a lot of time.
SESSION 9: June 3rd 11.30 a.m. - 1 p.m.

THEME: "Industrialisation, Commerce and Rural Welfare"

CHAIRMAN: G. Mutiso.

Background Papers:


3. The Role of Electrification in Rural Development: S.A. Arungu-Olende.
This paper sets out to describe what is possibly a rather unusual approach to the problem of developing employment opportunities in the rural areas of Kenya. It must be emphasised that this approach is only tentative one, which I have applied for a very short period in one District. It is not in any way a substitute for existing forms of assistance, but rather a possible supplement, and one cannot at this stage quantify the costs or the benefits even approximately. Nor is it yet possible to recommend a specific programme of further efforts in the same direction. It is to be hoped, nonetheless, that the approach which is described will generate ideas which may be helpful to others who are engaged in rural development work.

I have confined myself entirely to commercial and industrial enterprises, not because there is a legitimate and fundamental distinction between these and agricultural enterprises, but because of my own ignorance of agriculture and the limitations of time, and because the traditional Ministerial division of responsibilities provides a convenient grouping which can be handled by one person within a District.

It is reasonable to question the need for any non-agricultural enterprises in rural areas, or at any rate the need for specific assistance for them; would it not be more useful to devote any resources which are available to developing employment opportunities on the land itself, which is clearly most closely related to the existing skills and location of the potential employees? There are in fact various arguments in favour of
assisting the development of commercial and industrial enter-
prises along with agricultural ones. Firstly, they are often
closely related, either as suppliers of equipment, seeds
and fertilizers or as buyers and processors of the agricultural
products. Secondly, many agricultural products are subject to
the vagaries of weather, disease and international markets, so
that any enterprise which broadens the base of rural employment
is well worth encouragement and assistance. Thirdly, any job
which can be created anywhere is valuable, and if such a job is
in a rural area and not in a city, it is probably socially and
economically more valuable to the country.

Before describing the approach which I am attempting
to develop, it may be worth while to consider what forms of
assistance are currently available to rural businessmen, from
whatever source. This list may well be incomplete, and I must
apologise to any organization which has been omitted. Such
omission is more than likely, if only because of the diversity
and frequent duplication which exists among the various forms
of assistance for rural businessmen. The sources of assistance
are described mainly with reference to what they do not do
rather than to what they achieve.

(1) Loans from Trade Development Joint Boards, or from I.C.D.C.

Inevitably and rightly the demand for loans of this sort
far exceeds the supply, and District Trade Development Officers
have to make recommendations based on their assessment of the
ability of the applicant, the likely success of his venture
and the security he can offer. This does not necessarily act
in the interest of new entrepreneurs or imaginative ventures,
and it has been found that in some areas businessmen evaluate
one another's success by whether or not they have been able to
obtain such a loan. It is sometimes regarded more as a reward
for past efforts than as a means of financing new ventures, and
how it is used is of less interest to the local business
community than the fact that it has been granted at all. Like
any financial institution the lenders are interested mainly in
repayments, and advice is usually only offered when repayments are seriously in arrears. Accounting services are available from the I.C.D.C., but most of the rural borrowers are not in a position to take advantage of them.

(2) Private and Public Technical Schools

There are many of these institutions, of varying sizes and quality. Students, whether full or part time, learn skills which are applicable to rural industry, but they do not learn them on the job. They learn how to use the tools of carpentry, metal working and so on, but they do not learn what to make, or still less how to manage the manufacturing enterprises where such skills can be applied.

(3) The Management Training and Advisory Centre

This centre has given a large number of management courses to small scale rural businessmen. These courses combine classroom instruction with consultant visits to the student at his work, so that the theory can be immediately related to his particular circumstances. The courses generally last about five weeks in all, and the businessman is then on his own. He cannot usually avail himself of the "business Doctor" service of the Centre unless he can come to Nairobi, or unless he is able to commission a specific consultancy assignment for his business.

(4) Local Courses

A number of organizations offer courses for rural businessmen in local centres. The Institute for Adult Studies of the University and the District Trade Officers organize them fairly regularly, and Chambers of Commerce, Rotary Club and others are involved in this form of assistance from time to time. These courses naturally vary in content and duration but they can rarely exceed two weeks because owners of small businesses cannot afford to
be away for any longer. The courses often include simple systematic training in book-keeping as well as valuable but unrelated talks about insurance, banking, K.N.T.C., financial institutions and similar matters of interest to rural businessmen who are very remote from many of the institutions which exist to help them. Although such courses, and what individual follow-up the Trade Officers can manage, often lead to the first attempts at bookkeeping in many businesses, all too often the only change that results from attendance is the appearance of the framed certificate on the wall.

(5) Assistance from Suppliers

In many rural markets certain shops stand out not only because of their visual resemblance to cigarette cartons or packets of tea, but because of their good management. Manufacturers of staple goods who enjoy virtual monopoly, at least in rural areas, devote a great deal of time and money to improving the operations of their retail outlets, and of their wholesale distributors, because this is one of the most effective ways in which they can increase their sales. They run courses for their stockists, they sometimes provide finance, and their sales representatives make regular visits which are useful occasions for giving advice on everything from the cleanliness of the shop to pricing and stocking policy. This advice is all the more valuable for being regular and continuous, so that the retailer and the representative can establish a working relationship and the representative has the opportunity to develop the distributor's business skill stage by stage. Because of the monopoly position of the suppliers the advice does not suffer unduly from bias. Unfortunately however, the distribution of goods of this type is not usually a labour intensive operation, and the businesses which are helped in this way are naturally those which happen to be distributors of the particular commodities.
All the above sources of assistance are effective, but it would appear that the type of service which is offered by suppliers of staple goods is in some ways the most effective, since it is continuous, and is specifically related to one man and his problems and opportunities. What may be required, particularly for labour intensive enterprises with potential for growth, is continuous individual advice which will enable the rural businessman to make the best use of all the other financial, educational and technical help which is available.

In order to test the value of this kind of service, I obtained permission from the Ministry of Commerce and Industry to carry out a one year experiment in Machakos District. I proposed to spend about three days a month in the District, identifying new projects which would increase the number of jobs available and then working with local businessmen to plan the details and implement the projects. The idea obviously has a great deal in common with some aspects of the proposed Rural Industrial Development Centres (R.I.D.C.) and it was felt that advice or consultancy of this sort might quite effectively be dovetailed into the R.I.D.C. which is to be started in Machakos District next year.

I have spent about six days in Machakos up to now, and there has certainly not been any major improvement in the employment situation in the District as a result. It is possible however, even at this early stage, to make a very tentative preliminary assessment of the value of this type of advice. Between 50 and 1000 new jobs will probably be created as a result of the implementation of definite projects whose management, location and markets are already known. Some of these projects were already envisaged by the businessmen concerned but had been regarded as impossible or at best very long term because of real and imagined difficulties. Such projects usually involve the expansion of existing successful
enterprises rather than totally new ventures. They include a new clothing factory, the doubling of the output of a bakery, the re-equipment of a posho mill and the accelerated growth of a confectionary factory. The difficulties include shortage of capital, the difficulty of selling and transporting goods outside the town, and the selection of a source of supply for certain machinery. In addition, projects involving far larger numbers of jobs have been identified but are not yet beyond the state of preliminary investigation. These longer term, large scale projects include mining ventures and the processing of agricultural produce. Even if a particular project has not been suggested by an interested business-man from the area, it may be possible to find potential managers and investors, on a private or a cooperative basis, who will take up the project and implement it as their own.

The consulting sessions resemble to some extent a seminar on a business case study, with the important difference that the conclusions which are reached are then tested by genuine application and evaluated according to the results a few weeks later. The Trade Officer, the businessmen and others who are often drawn into the conversation presumably benefit in some way from participation in the decision making process. While it is sometimes necessary to contact representatives of suppliers or customers in Nairobi, most of the decisions are made on a "self help" basis, and the businessman will presumably be better equipped to make decisions on his own in the future. I find myself becoming almost a part of the organization yet in some cases my own role is already becoming less important as the businessmen pick up certain simple methods of analysis or evaluation.

It is usually preferable to build on success by working with the more aggressive and successful businessmen since they are likely to have the best ideas and to be the most capable of managing future ventures. Their most frequent problem is lack of finance, and they have usually already tapped the most obvious sources. Once we have got together a simple and very approximate balance sheet however, the businessman can often see for himself that substantial sums are already available, unprofitably locked
away in stocks or debtors, but capable of being released. Apart from releasing funds for expansion, and exercise of this sort is the best possible way of teaching the owner that it is worth his while to keep accounts, since he has seen for himself how they can be used to his advantage. In the same way, analysis of stocks, or of customers, can be shown to be worth doing because it produces information which can be used.

This paper is based on very brief experience both of East African conditions and of the actual advisory work. It is certainly not possible at this stage to propose that similar techniques be applied elsewhere in the country. The approach does however seem to have some potential, if only because it helps the rural businessman to make better use of the many sources of assistance which are already available to him.
This paper is a preliminary attempt to consider the role of the Ministry of Commerce and Industry in the strategy of rural development in Kenya.

The Ministry of Commerce and Industry has established the Rural Industrial Development Programme (R.I.D.P.) whose main objective would be the establishment of Kenyans in small industries in rural areas.

The role of rural Industry and Commerce is to:

(i) employ skilled people in rural areas and so to diversify employment opportunities;

(ii) raise incomes through a multiplier relationship, that is expenditure and employment in non-agriculture raises incomes which are spent on food and other agricultural produce;

(iii) create rural industry to provide cheap necessities not supplied by urban areas whose products are expensive;

(iv) market the agricultural produce of rural areas. For this the transport and wholesale sectors are necessary to open wider markets for agricultural produce.

The Rural Industrial Development Programme is expected to cover 13 townships all over the country; viz. Nyeri, Kakamega, Machakos, Homa Bay, Kisii, Kericho, Embu, Meru, Garissa, Voi, Malindi, Kwale and Muranga. When the implementation is fully operational, more and more areas will be covered. Ultimately the programme will cover as many rural areas in Kenya as possible.
The Kenya Industrial Estates programme provides well-planned developed factory premises mainly for new industrialists, whereas, the rural industrial programme in addition aims at:-

(i) promoting already existing units by providing them with additional machines and equipment and thus improving on their technology; and

(ii) encouraging new industrial units for products which have sufficient localized market or which have low cost advantage owing to the availability of local raw materials and/or other factors.

The areas so far studied show that in most cases the products to be produced in various areas were identical. They were mainly sheet metal goods, tubular steel furniture, wooden products, tanning and leather goods, vegetables and/or fruit canning and other agricultural based industries. The programme may also incorporate other cottage industries such as basketry, pottery, silk screen printing and sisal products. The preliminary surveys revealed that the rural areas required certain services which may have to be encouraged. These included bakeries, laundries, printing presses and motor garages. One industry which may need special promotional measures is tanning. Special industrial projects whose viability will have to be studied at the national level include tomato puree for Machakos, honey processing for Meru, starch from maize for the maize zone and vacuum dried table salt for Malindi.

Under RIDP, it is proposed to establish Rural Industrial Development Centres in all the townships mentioned above. Initially, these pilot centres are to be set up at Nyeri, Kakamega and Machakos. These centres will:-

(i) demonstrate better and more efficient methods of production;
(ii) hire out equipment to local industrialists;
(iii) provide repair shops and other common facilities;
(iv) recommend applicants for loans;
(v) carry out on the spot feasibility studies to be submitted to the K.I.E. Board of Directors.
Initial approaches to the local authorities concerned have met with overwhelming enthusiasm and in the three pilot centres locations for both the administration-cum-workshop block and staff housing have been chosen and the Ministry of Works has already produced construction plans.

The Kenya Industrial Estates Limited being already engaged in similar industrial development programmes and having some of the essential staff, was recommended by the Ministries concerned and the K.I.E. Board has accepted the responsibility of implementing the new programme. With them as the implementing authority, certain expenses such as administrative, technical services and the cost of feasibility studies will be shared between the two programmes thus making them cheaper than having to begin afresh.

In addition to the RIDP the Ministry of Commerce and Industry is assisting where it can the Special Rural Development Programme. The Special Rural Development Programme's broad objective is the testing of various mixes of input factors in selected pilot areas to determine the best methods for achieving a fully integrated, functioning rural development programme. The objective of this programme is to learn useful lessons in each of the problem areas applicable to the development of similar areas on a local and national scale.

The only RIDC to be built in an SRDP, as part of the integrated programme is Embu (Mbere), though both in Kakamega (Vihiga SRDP) and Nyeri (N. Tetu SRDP), there are close connections. In all these places we expect some incentive to develop rural industry and trade to result from the integrated approach. We also hope that the special area studies in SRDP divisions of natural and agricultural resources will reveal additional rural industry possibilities.

The Rural Industrial Development Centres (R.I.D.C.'s) and Village Polytechnic Programme (V.P.P's) are two of a number of
Initiatives in the area of rural development in Kenya.

In the minority of cases where RIDC's and Village Polytechnics co-exist we can say that the Village Polytechnics aim at producing artisans and the RIDC's to turn them (and others) into successful entrepreneurs. Village Polytechnics deal mostly with primary school leavers and others (such as secondary school drop-outs) who want training in basic skills and who are entering employment for the first time. RIDC's will deal mostly with those who are already in employment, who are perhaps running existing businesses or experienced artisans who have the initiative to start a business of their own. We know from surveys of current Village Polytechnic leavers that most enter employment in contract labour hire, services, self-employment and wage employment sectors which employ less people, require less organization and less risk or loan capital than the mainly manufacturing small businesses that the the RIDC's will promote. A Village Polytechnic in a District where there is no RIDC will probably have to concentrate on training for opportunities in these service, labour hire, and self-employment (in existing firms) sectors. On the other hand, where a Village Polytechnic is in a District where there is an RIDC, there may be scope for setting up some of the Village Polytechnic leavers (especially the more experienced ones) in projects designed and promoted by the RIDC.

If a Village Polytechnic leaver is helped with a typical RIDC, he will be dealing with a bigger enterprise than if he was on his own or with a small group of his fellow leavers in a typical Village Polytechnic employment project. The RIDC project will probably make a product requiring buildings, machinery, working capital and some prior marketing study. The RIDC will therefore expand, we hope considerably, both the range of training advisable for Village Polytechnics to give their students and also the employment opportunities for leavers having the required skills.
The development of the major towns cannot meet the fundamental problem of the provision of sufficient employment opportunities for a fast growing population. Though most of the employment in rural areas will need to come from agriculture, the resources devoted to creating non-agricultural opportunities will increase rural welfare. It is indicative that the seminar has taken the title rural welfare and not rural development. The greater the emphasis on increasing welfare and consumption of goods and services in the market economy (which is such a major portion of human welfare), the greater must be the importance attached to rural industry and trade.

QUESTIONS:

We would like the Seminar to consider:

(a) The value of rural industry employment in relation to other employment creation initiatives.

(b) Organizational problems of marketing.

(c) Is it likely that there are diminishing returns or increasing returns to further efforts in rural industry employment creation? In other words, is there a pool of project opportunities which is quickly exhausted?

(d) Whether there is a need for new rural credit institutions (loans, equity participation or hire-purchase).

(e) How to deal with competition between assisted projects producing the same goods or services.

(f) Is there a need for a number of educational institutions training for entrepreneurship?
THE ROLE OF ELECTRIFICATION IN RURAL DEVELOPMENT

S.A. Arungu - Olende
Institute for Development Studies, Nairobi

The object of this paper is to show the need for rural electrification as part of a national development plan, and also the various points which have to be considered before embarking on such a project. The technical aspects of the differing means of electrifying rural areas together with their pros and cons are the subject of other papers by the same author.

DEVELOPING CRITERIA

For the purposes of this paper a rural area has been taken as one of agricultural and country areas as distinct from urban and semi-urban areas. Studies have, in the past, been made of rural electrification in the U.K. and other European countries, but in the main the parameters encountered are vastly different from those envisaged when considering a developing country. This does not, however, preclude the use of information and experience gained in these studies, but rather an adaption and an extension of them.

Let us look for a moment at the reasons for rural development in its wider sense and then consider how these objectives can be most easily, quickly and economically achieved. Firstly, why should one consider rural development?

In most developing countries it soon becomes apparent that the largest physical portion of that country is rural and also that the majority of the population dwells in that region.

Because of the vast numbers and lack of industry most of the inhabitants are existing only at mere subsistence level without much hope of bettering themselves, consequently, with the idea in mind that 'The Other Side Is Always Greener' many move to the industrialised urban areas. This population movement causes a great many problems which will not be discussed now, but let it be said that the flow needs to be stemmed. The object of rural development should be the social and economic transformation of the peoples with its subsequent increased industrialisation. This cannot be done unless the area and the peoples are utilised and developed fully. However, if it is achieved the country as a whole raises its standard of living and economic stability. It is not hard to understand
1. RADIAL BASIS: Gradually including the areas around the main centres into the already existing development. This would mean ensuring that facilities available are either adequate for, or capable of, being extended to cater for the increased load.

DIAGRAM 1.
2. **LINK BASIS:** This is the development of the areas immediately along the main link road connecting the main centres of administration.

**DIAGRAM 2.**
3. ISOLATED AREAS: The development of specific areas even though they may be completely isolated and far from any existing township. This may be required if a particular industry was to rise up in that location e.g. gold mines, oil finds etc.
the need for development, but one has then to consider how this is best implemented, and here the problems begin. What should come first: roads, education, communication, electrification, safe water supplies, better housing etc.

Each authority concerned could, if the capital was available, argue as to why they should be first. Conversely, if capital is not available, and this is usually the case, they can argue very strongly why they should not be first. It is the author's opinion that rural development should be treated as a whole, combining all the various aspects rather than each authority concerning itself solely with its own economic and technical problems. With joint planning of all authorities and Government Departments, it is possible to achieve savings and also to develop a sound system which lends itself to further expansion as and when the time arises.

In considering the approach to rural development one must take account not only of the situation as it now stands and the scheme as it is envisaged, but also the quality and quantity of local resources, both men and materials, as these can have considerable impact on the foreign exchange. This particular point will be discussed more fully later in the paper. The plan developed must be one of long term (20 yrs+) as generally neither individuals nor communities can adapt themselves overnight to a new type of existence, and will, therefore, require time to learn to appreciate and use fully the facilities which become available. As these benefits become known it is possible that the programme may have to be speeded up or modified to meet the changes.

Factors which determine the approach to rural development will obviously vary from country to country, but the following are some of the aspects to be considered. In every country there is already an urban area, with its own industry, communication network etc., and usually a spine of reasonable roads between which can be utilised in the development plan. The question is, are these always in the best location, or would it be preferable to build a new town around which the expansion can take place. Development can take place in the following three ways:

1. On a radial basis
2. On a link basis
3. Isolated area development
Each of the above has its merits, but the decision as to which to adopt will be entirely dependant on the local environment, though normally one of the first two will be adopted and each will pose its own particular problems. So bearing in mind the points just mentioned, we will consider now one aspect only of rural development.

RURAL ELECTRIFICATION:

Electricity uses are split broadly into three categories:

a) Domestic
b) Commercial
c) Industrial

The rural population of most countries contributes or can contribute very substantially to the national economy. For instance, in Kenya, Uganda and Tanzania etc agriculture in the form of tea and coffee exports, has a big impact on the nation as a whole with respect to foreign currency and employment.

If we can, therefore, raise the production per capita without excessive increases in costs the nation benefits as it also does if the total areas available for fruitful production are increased. Electrification should, therefore, be introduced as an aid to meet this need, but to achieve its maximum impact it should go hand in hand with a training programme which shows the advantages of this new wonder and also how to use it.

While engaged in a rural electrification programme in the U.K. the author was surprised at the number of times he encountered an inborn fear of telephones and electricity among members, particularly elderly, of the rural community. This is a country which is civilised and developed. It is not hard to appreciate that in the less developed countries this fear, although unwarranted will be more widely apparent. This is obviously not a new phenomenon as with each new stride forward in technology a new fear has to be overcome. When motor cars were first invented it was only the adventurous who dared to ride, but now they are widely accepted as a necessity to living. The same occurred with aeroplanes, trains, T.V., radio etc., all of which have been accepted by those of us who have either grown up with them or been taught to use and accept them. Both prior to, and during the introduction of electricity, training should be undertaken. This may well be done by:-

a) use of mobile demonstration plants going into the locations and villages.
b) by teaching and training children at school so that to them it is easy to handle.

c) by means of various local organisations, Women's Guild, Co-op Movements, Church groups etc. or:

d) by setting up pilot schemes to show first hand the use and benefit of electricity to the smallholders etc.

It has already been stated that electrification should be considered as a part of an overall development, and it is this overall plan which will determine to a large degree the way in which it is undertaken and also the means by which the most economic supply can be given.

Considering the three ways of developing mentioned already we see that they each have their effect on the method of electrification.

1. RADIAL BASIS: This generally means extending the existing systems outwards from the available source. The distance here would not be as great as those in the Link Basis, and consequently, transport costs could be reduced, but the efficiency of staff would decrease due to constant movement (shorter extensions) and as the length of the radial feeders are extended reinforcement of the existing system may be required.

**EXAMPLE**

Nairobi - Kiambu, Nairobi - Limuru
Nairobi - Machakos, Nairobi - Ngong
Mombasa - Kwale
Kisumu - Maseno

2. LINK BASIS: If two centres exist the development could take place from each, but as the distance covered could be 160 Km. or more the question of voltage regulation and new injection points becomes far more acute and an overall plan is a must.

**EXAMPLE**

Nairobi - Ruiru
Ruiru - Thika
Mombasa - Kilifi

**ISOLATED AREAS**: In this instance it may be far more economical to install separate sources of supply with their own limited distribution work. The type of energy source could vary depending on load required
and fuels available. It may be that a small hydro plant is beneficial or diesel plant or natural fuel source plants, (wood, wind, solar, gas, oil, geothermal). For instance investigation is at present taking place into the feasibility of producing electricity from a Geothermal Station in the Rift Valley Province i.e. using the steam believed to be already available in underground reservoirs. If this should prove possible (in addition to the possible cheaper energy available for injection into the general network) then an electrification programme in the local vicinity might become practicable.

**EXAMPLES**

Meru - Homa Bay - Nanyuki - Kitale

As in most things these days, economics plays a vital role in rural electrification, and it is two sided. The prospective consumers question is CAN I AFFORD IT? The supply authority asks CAN I AFFORD TO SUPPLY IT? So it is worth looking at some of the factors which affect the answers to these questions.

Firstly, the prospective consumer. We have already mentioned that the majority of rural inhabitants are probably living at a mere subsistence level and cannot afford to pay for a luxury such as electricity. However, without some additional outside help such as electrical or mechanical power they are unlikely to be able to increase their income. Electricity must, therefore, be made to pay for itself and quickly or be treated purely as a luxury. Training programmes will help to show how this can best be achieved. In talking with people in Kenya concerned with agriculture, the question was put "What things hinder you from having electricity?"

Surprisingly, the reply most often heard was, "If electricity is installed and a breakdown occurs on the consumers installation, then there may well be a long delay before repairs are effected with its consequent loss of production profit and convenience. It would appear that the number of electricians in Kenya who are able to give an adequate service after installation is very much below the requirements."

The other reason is that the firms who can undertake such work are more concerned with the work in, and immediately around, the main towns. The training of electricians for work in these rural areas must, therefore, be considered along with electrification. Even so the initial capital has to be found for both the mains installation, the consumer's installation and the early running costs. It may we-
be that subsidies or easier initial re-payments can be arranged to help over this introductory period, but this again should be considered in the overall plan.

An alternative to electricity being supplied by the power company is the use of private generation either on an individual basis or on a community basis. This idea of private generation is often given insufficient thought as in many instances it is distinctly more advantageous. Generally in a rural area the only use to which electricity is put is for the light bulb during the evening hours before one settles for the night. A small diesel driven alternator may well supply this need at less cost than connections to the mains. If a small community clubbed together it might prove beneficial to install a small plant and a small distribution network. This could be run and paid for by local participation and if built to national standards the network could be taken over by the power company when the main supply reached the location.

Now what about the Supply Authority who has to produce and distribute electricity as an economic proposition? Can they afford to construct the additional equipment knowing that the return will be small with no chance of breaking even for quite a few years?

To develop rural areas may well mean additional expenditure, expensive skilled staff either to run the isolated stations and networks or to construct and maintain the new distributors. Operation costs will obviously increase, and efficiency decrease as distances get longer. What utilization is made of the facility will also affect the Company's attitude and the economic viability of the project.

These two views are so closely dependant on one another that it is difficult to separate them for:-

a) If the consumer can afford to pay the authority can supply.

b) If the supply is available cheaply enough the consumer will buy, but if costs of supply are to be kept down, maximum utilisation must be made of all plant, and this means consumers using electricity to the maximum. So where do we start?

At first sight it would appear that in the developing countries more persons would be connected per mile of line, but one must remember that the family sizes are also larger and the number
of buildings generally of a standard which would permit any sizeable installation are very few, thus in the immediate future the available density may well be below 100/sq. mi. In developing countries it is also true that initially the consumption rate will be very low, probably one light only, which adds to the objections for electrification.

Bearing in mind the foregoing, how can electrification best be done? It is well known that the most economical way of operating most plant is to run continuously at, or as near as possible, to the rated full load of the equipment or its optimum load and this is equally true of electrical equipment. We must, therefore, aim at reaching this stage as quickly as possible. One way to do this is to encourage industry to invest in the rural areas, and this can best be achieved by a concerted effort of governments and local public utilities. It may require subsidies or even directives to achieve this. The benefit of this would be a base electrical load upon which the rest can build. With the new industry comes employment for more people which in turn means more money is available for improvement of living and leisure standard. It would possibly mean that a small community would be built up around the industry making it a better proposition for electrification. Another way of achieving these same ends is to show the application of electricity as a means of increasing both quality and quantity of agriculture.

For instance, the recent drought has brought havoc to Kenya's agriculture. Cattle have died or become so thin that milk and beef has been almost unobtainable. Coffee plantations have suffered from lack of rain and fires, and tea quantity and quality has dropped.

Tea, I understand, requires an annual rainfall of about 58" so that the moisture content of the leaf can be maintained at about 80%. During the drought this level was reduced by as much as 10%. Irrigation during this spell at a tea plantation near Limuru meant that while the quantity of other plantations was falling, theirs was remaining near the normal production level. Electricity plays an important part in tea processing and the tariff level obviously affects the final costs so the siting of factories, which must be near plantations, can also be influenced by electricity availability and.

With coffee the yield is definitely related to the amount of irrigation and fertilisers etc. Prior to the war the coffee yield per acre was about 3 cwt., in 1960 it rose to about 7 cwt., in 1970 the
the figure was about 14 cwt., and in some cases was as high as 1 ton. This increase was obviously not all profit or dependent entirely upon irrigation. However, the crop is more regular and safer and, therefore, a better proposition. Coffee irrigation could be a good base load on which to build if the tariff is right, as the ideal method of irrigation is a gentle spray over 24 hours so that the maximum absorption takes place. If 'Off Peak' is applied the irrigation installation must be larger and the heavier spray then hardens the soil and loses its effect or, alternatively, header tanks must be erected to store the water for use during the dead periods.

On the cattle ranch, green lush grass is required for the cattle to graze on. If this is constantly available, then one is able to rear more head per acre, and increase the milk or beef yield. Irrigation is again able to aid this pasture land availability.

Irrigation is very important to a country like Kenya and electricity can be used to drive the pumps for this. Of course, irrigation has its own problems because if the water is not readily available when required (during drought periods), dams and canals must be built. Electrification and Irrigation development could go hand in hand. Water availability for irrigation and hydro power generation needs to be carefully checked and well controlled.

In addition to irrigation, electricity can be used for the processing of produce at source, cold storage and preservation of food, fruits and vegetables to enable a constant supply to be available throughout the year. However, the holding back from electrification on the part of farm and small holders may be because they themselves are not aware of the benefits, and while advocating electricity we should perhaps show by positive means how electricity helps. In addition to the training ideas already mentioned, it may be that some of the larger farm managers might be persuaded to run a pilot scheme and allow others to visit so that they can see and learn the advantages first hand, and in their own environment. If this is not possible then either the governments or electricity undertakings might make a similar gesture.

In encouraging the use of electricity in agriculture and movement of industry to rural areas, consideration of the tariff structure must be made. This may well be made in conjunction with
government directives, otherwise if a true initial price basis is adopted, we will price out the very ideas we are supposed to encourage. One must now consider the cost, how this can be kept to a minimum, and how this can best be financed. Once again so many factors affect costs.

a) Type of scheme (radial, link or isolated)

b) Type of construction (3 phase standard 1 phase S.W.E.R.)

c) Local small generating plants, or EHV transmission from a larger Power Station with a local distribution at a lower voltage.

This second alternative might have a possibility if a scheme using a Nuclear Power Station for both electricity generation and desalination became a serious contender price wise to large hydro or thermal stations or fresh water became of prime importance.

d) Rate of electrification. Here we mean the number of villages or consumers to be connected in a given period. It is often true that by doubling the rate of progress, savings are made particularly at specialist level as time is fully utilised. It can also be true that if the supervision is not tight doubling output can increase costs.

e) Rate of future development. Is a new town to be built, will the benefit of electricity and irrigation produce larger and better crops requiring more and better processing units? Are more schools, hospitals and administration centres to be built?

Each of these will be considered together with other information, such as geographical location, type of climate, type, quantity and quality of local resources, number and experience of trained personnel, relevant to the country concerned. One thing which requires particular attention is the choice between a fairly sophisticated automatic system with low maintenance costs, or the more common European type arrangements with higher maintenance costs and longer outage periods. To a large degree this will be dependant on the type of scheme, the industrial/agricultural requirements and the extent of the general communications network. Generally, it seems that less sophisticated arrangements are adopted as the amount of capital required, together with the associated interest, is considerably lower than in other cases. This initial capital is one of the biggest stumbling blocks, and every effort should be made to keep this to a minimum. Capital costs are split into three categories:

1. Heavy plant (generating plant and transformers etc)
2. Distribution equipment
3. Construction
The first item will be imported, but it is quite possible that many of the distribution items could be of local manufacture and the construction costs should be almost entirely local. The more items locally manufactured which can economically compete with imported items under free term conditions the better the savings on foreign exchange. Thought should be given to developing these industries if they do not already exist as part of the overall development programme as this also starts to stimulate local participation and industry. Items which could be of a local nature include poles, cross arms, tie straps etc. A further aid to keeping down initial costs is standardisation of equipment, methods and practices. In manufacturing it is more economical to produce a high quantity of one item rather than a reduced quantity of differing items, so that if the construction design can be standardised around a small number of simple items, the material cost should decrease. This standardisation of design has the further benefit that construction staff soon become familiar with them and are able to increase their productivity and also it considerably eases the training situation if fewer designs are encountered. If only a small number of designs are used it should be possible for the complete unit to be parcelled together at the place of manufacture, thus saving time on site. For instance, one unit could consist of a single pole substation, or an angle pole, and all the items, pole, crossarm, tie straps, insulators, bolts etc., put together before transporting to site and this would ease the supervisors work as he would merely call for one sub-station unit.

Further consideration of design standards may well show that a reduction in the various safety factors can be made without a great reduction of general safety being the outcome. For instance, the present factors for pole strengths include a F.O.S. of 2.5-3.5 depending on the type of wood. For crossarms F.O.S. is 3.0 wood, 2.5 steel, ground clearance of 17 ft. across open land and 20' above roads are also standard. By reducing the foregoing slightly it may be possible to increase pole diameters, increase span lengths and hence number of poles required. Each will reduce the cost per mile of initial installation. A further saving on pole lengths is also made if a horizontal installation is adopted rather than the vertical or triangular which are used. A rural scheme calls for a large number of small size transformers, and the reduction of costs on these could also produce
a large saving. If the cost of these were sufficiently reduced it will probably become more economical in the event of a fault developing to replace rather than repair these units.

Transportation and hence construction costs could be reduced if materials are available adjacent to the proposed development. It often proves that mechanical aids to construction (polecat for hole digging and pole erection) considerably lower the cost, and speed up a construction programme, but this is often fought against on the grounds that a machine is doing what three or four additional men could do. Against this, however, is the fact that more people obtain supply more quickly giving a quicker return of capital and also the initial borrowing is reduced.

The type of construction adopted has considerable bearing on capital outlay. S.W.E.R. can be as much as 25% to 30% cheaper than standard construction methods, but this must be part of an overall plan and easily uprated (either voltage level of number of phases), otherwise, in a later stage of the development it may be required to almost rebuild the initial stage. If the money for this is not borrowed but financed from the local supply authority and classified under a budget heading of reinforcement or maintenance, it can well be argued that this is the better policy. This comparison of types of construction and their relative technical merits and costs is covered in another paper by the same author.

As already mentioned the biggest drawback to rural development in its various forms is the amount of capital required to undertake such programmes, knowing that the immediate returns are going to be very limited. It is for this reason that the author believes a concerted and co-ordinated effort by all interested parties should be made. By this means, a realistic plan can be developed allowing perhaps one overall body to co-ordinate the work so that similar works can be undertaken by one team. For instance, telephone lines and electric lines require that poles be erected, this could be the work of one specialist team. If the lines (Power & Cons.) are in the near locality or if local regulations permit, built on the same poles, common transport, stores, facilities, site offices etc., might well be possible leading to a reduced initial cost. Again large irrigation schemes and electrification often run together and could be co-ordinated, at least at consultant level to mutual benefit. However, despite all the
possibilities that exist for reducing the capital cost, who will provide it?

FINANCE

Here again alternatives do exist and also opinions as to which method is best vary. If one considers electrification on its own, the immediate thing which springs to mind is the Electricity Undertaking. Unfortunately, this company is probably also seeking capital for its urban development and future power sources, which are always more glamorous from the publicity angle, so would either have to borrow still further and take from its profits or subsidies from increased urban tariffs. Each has its merits and drawbacks.

Secondly, there is the Government of the country. Here again most developing countries are unable to afford the initial capital themselves, but should be able to maintain the system once in operation. This then leads us to find sources of capital outside the country, and here again, one has various choices e.g. United Nations, International Bank for Reconstruction and Development, Foreign Governments.

Each of these offer forms of aid to developing countries at differing interest rates, differing repayment periods and differing conditions. Foreign Governments often offer aid with low interest, but with the proviso that a certain percentage of the equipment is of their country's manufacture. The World Bank, however, although offering at a higher interest rate may well prove more beneficial as the world tender may produce a lower manufacture and installation price.

If considering a joint development project an independant consultant with a strong local affiliation may, and should be able to arrange a realistic and economical project, and also the finances for the scheme by using either one or a combination of the organisations mentioned.
DISCUSSION.

JONES: You have said there is no organising training in small business management. I have trained 400 or 500 people in the last five years.

STEELE: You are, the only one. Yours is an individual activity and no single person, however industrious could possibly cover the needs of a nation in this area.

CHAIRMAN: Are we faced with a basic problem? Is it a good idea to encourage individually owned industry rather than other types given the wider assumptions about Kenya? On the other hand, I think the economists have raised the basic issue about mix of agricultural and non-agricultural industries in rural areas. Perhaps you could react to this.

GERHART: In many cases rural industries are service industries vital to agriculture itself. Surveys show there is no tractor repair facility in the whole of Western Province except for a Peace Corps Volunteer. In South Nyanza there is no decent agricultural store. This is true district by district, particularly of mechanical repair shops, and the supply of agricultural goods. Small stockists don't have the capital to carry large inventories and won't order until farmers have actually gone and asked for things. There is a systematic process of inputs being ordered too late and being applied too late. Late planting is a major problem with hybrid maize. This type of service is essential to agricultural growth and should be encouraged.

HOPCRAFT: Some kinds of industries should clearly be located in the rural areas and some should not. The sorts of considerations that are necessary are the location of the demand for an industry's products or services, the location of supply of its raw materials, transport costs, economies of scale, etc. Efforts are occasionally made to develop and foster an industry that should not be developed, which cannot compete. The result is that they either fail or become the recipient of some kind of subsidy. In general, I am chary of a government gravy-train type of approach when entrepreneurship is necessary. To my mind, a gravy-train is counter-productive of entrepreneurs. If you put someone through a training programme, set up a project for him, give him credit, give him more credit, and protect him from the chilly breezes of competition, you're likely to create a government dependent, not an entrepreneur. Most of these programmes may be good in themselves, but self-reliant, calculating activities are likely to create successful industries. Recipients of continuous government protection and subsidy are more likely to become a drain on the economy.

STEELE: I agree that some industries should be in urban and some in rural areas. It is a question of identifying the markets. It is difficult to go into a district which is producing agricultural goods and say what the industries that are badly needed. You might be able to identify...
It is difficult to identify the fact that you could increase a particular crop by using simpler machinery designed by FAO, or change the crop production pattern of an area by putting in a processing factory or exporting outside the area or the country. It is even more difficult to identify if there is a major market for wooden or simple metal kitchen utensils. Skilled advice is required. Finding the man who could produce them is quite easy (an existing entrepreneur may have gone to limit of his resources and simply requires some further advice and some technical assistance on machinery cost and markets to make a big push forward). There is no question of 'gravy train'.

GACHUHI: I would like to suggest that the identification of projects could be organized on a more communal scale. On the siting of industries - there is an assumption that the rural area factory should always be small. This is fallacious. It should be comparable to industrial areas. I feel there is a need to gear investment policy to reflect a bias to the rural areas.

ROLLING: Do we need an entrepreneur to develop local industry? Many of the entrepreneur's functions may be taken over by government assistance, such as taking risks, development of markets etc. Emphasis on helping those who are doing fine already has the short-term goal of increasing employment. In the meantime you are promoting a pattern for the future which implies a capitalist, individualist-owned economy. Are we sufficiently aware of the implications of this?

HARPER: I accept this. Let somebody else give us another.

? : How do you intend to identify the entrepreneur? Are you going to select people ad lib? If you concentrate on the entrepreneurs you can get employment opportunities developed. If you just take anybody and put them on the Government gravy train, you may have 50 per cent success.

STEELE: One identifies those Africans who want to undertake new businesses who look as if they know what they are up to, or those who are already in activities who look as if they can expand. These are usually easily identifiable in a district. We must not place so much emphasis on the fact there may be only one or two in a particular district at this point in time. There may be many more who have an easily identifiable potential for development. Don't only look for those who have already developed but look for potential and this is one of the major purposes of new educational machinery, to help sift through the candidates who demonstrate potential.

CHAIRMAN: Do you think it is realistic to expect merchants who have been in trade for a long time to become industrialists?

REVER: I know the kind of men you are referring to - wealthy by any standards. They have lots of business experience in the field of commerce. They could invest in other things but won't because they stick in their commercial ways. They are traders not industrialists. Some buy buses and shops and they buy more buses and more shops. The younger men, relatively recently successful, having made it since Independence. These are the men who are taking risks.
STEELE: We must not lose sight of the main objectives. The emphasis is on helping into employment and into new projects young people who are coming out of the rural areas because of massive population growth and primary education development. They can be one man taking the leap, on a partnership basis, a cooperative - our Ministry has no ideological bias whatsoever. They can form into whatever mode of business they like. Assistance will be given to help them in that mode. Our aim is just to get projects off the ground as fast as possible.

HOPKINS: This discussion is revolving around the political situation and policy of the country as a whole. As a conference we have no right to take political decisions. We can operate only within the general context of Sessional Paper No. 10. This postulates a mixed form of economy - some socialist, some capitalist and some co-operative enterprise.

Surely we should not think of imposing political conditions or criteria as regards industrial assistance, when we have been accepting all the time that all types of farmers are entitled to all sorts of help. The minute we shift to rural industries the atmosphere seems to change and political criteria and terms like "gravy train" are introduced. This industrial assistance could be a vital contribution to rural welfare by providing new jobs in the countryside.

CHAIRMAN: If you are servicing farmers you are servicing a great part of the people. Are you doing the same when you serve industrialists? In terms of farming and in terms of entrepreneurs you never reach the same quantity of people.

HOPKINS: If the scheme results in credit to small industries, thus providing jobs in the rural areas, then it offers a possible part-solution to the unemployed school-leavers and the regeneration of the countryside. At present, plenty of public help is going to big businesses in Nairobi and Mombasa: this may shift the balance back just a little in favour of rural areas.
CONCLUSIONS.

As was stated at the beginning of this Workshop, the Co-ordinating Committee felt that it was necessary to have a complete rethink of our attitudes to rural welfare.

So far, research and policies related to rural welfare have concentrated mainly on the monetary and 'output' variables associated with the welfare of people, with emphasis on cash crop innovations, pricing policies, etc. Many of the institutions established in rural areas, for example co-operatives, have been primarily designed as a method of increasing cash incomes.

The result is that there has been a tendency to neglect other important aspects of human welfare such as nutrition, public health, the family setting, etc. Even an evaluation of education as it relates to preparing young people for rural life has received little attention to date. Thus, this Workshop was set up on an interdisciplinary basis with participation from the University, the Government and other agencies concerned with rural welfare so that many of the various facets constituting rural welfare might be discussed on a common platform. Participants were also invited from Tanzania and Uganda so that we might share their experiences in this field also, and we are very grateful for the active part they have played in this workshop both in presenting papers and in the discussions. The original objectives we set ourselves were:

1. To construct an agenda for future research.
2. If possible to prepare a proposal for a new multi-disciplinary research project which would be replicable on an international basis.
3. To make suggestions relating to existing policies and how these might be altered to meet the needs of Kenya in the fields of rural and human welfare.
4. To register areas of academic disagreement.

It was discussed during the workshop period that it will take all of
It is our general impression that people at the local level have tended to be given only those alternatives that the experts have decided were good for them. This has led not only to an alienation between the people at the local level and the agencies responsible for changing rural welfare, but it has also reduced the effectiveness of efforts to improve rural welfare. We therefore feel that there is an urgent need to redefine the overall strategy to rural welfare, and we feel that this can be achieved if we adopt the following approach:

a) To investigate the phenomena of both formal and informal local leadership, and to assess the role which these people might play in improving rural welfare.

b) To reorientate the planning process so that local people play a greater role in selecting alternatives, with people at the centre concentrating on providing information about available alternatives to people at the local level, and also interpreting the likely outcomes of these alternatives.
for the local people. We realise that this may take
time to achieve but the sooner a start is made the better.

c) To restructure the organizations, redefine the role and
retrain all those people in the extension services, e.g.,
Agriculture, Community Development, Health etc.,
so that the limited resources available for these purposes are
used to the maximum effect.

d) To examine which groups currently derive most benefit
from these extension services with a view to ensuring
a more equitable distribution of these services.

e) To ensure that all disciplines and organizations
co-operate in this process as it is increasingly
apparent that no single discipline or organization can by
itself supply the answers to the problem of improving
rural welfare. We feel that this Workshop has made an
excellent start to ensuring future co-operation in this field.

Having made a general statement of this nature, we must specify in more
detail some of the possible operations to meet these ends which have
been discussed during the course of this Workshop.

1. That serious thought should be given to changing the National
   Family Planning Policy from one of child-spacing to one of reducing
   the rate of population growth. If this is accepted then population studies
   should be incorporated in school curricula so that young people are
   exposed to the whole concept of family planning and their responsibility
   in this matter.

2. That as part of the process of decentralising the developmental
   activity, the Ndegwa Commission recommendations on this topic should
   be seriously considered. As an immediate step in support of this
   Principle, the District Development Committees, and the District
   Development Advisory Committees, should be merged.

   That given the scarcity of land in many high potential areas,
   effects of various types of land tax, especially a progressive
tax on the potential output of land, should be investigated.
   It might be used as an alternative to GPT or income tax in the farming
   community.
4. That the apparent tendency noted in some recent research, that the smallest farmers are selling their land, should be further investigated and the consequences of this evaluated.

5. That positive steps are taken to redress the balance of advantages in availability of services, inputs, marketing channels, so that small farms, even those with less than five acres, have an equal opportunity in farming.

6. That the links between the rural and urban sectors and the sociological, political, and economic nature of urbanisation are all areas for intensive research, so that a clearer understanding of the effects of urbanization on human welfare can be achieved.

7. Since education and training of the rural farmers is vital if the farmers are going actively to participate in rural development, it is important that a fresh re-appraisal and research be carried out on how best this can be done. Closer co-ordination of rural education is imperative, e.g., agricultural extension, co-operative members, women's organizations, etc. Education is not necessarily adult literacy but all aspects of socio-economic and political development. Education at the local level should involve all the rural people both young and old.

8. That the development of a technology and an expertise for locally based rural planning, including investigation of the data and the personnel, and training requirements for effective rural planning are needed.

9. That it is important that a better understanding of rural employment is achieved, so that a realistic rural employment policy can be created.

10. There is a need to achieve a better integration of health and social services research.

11. The role of nutrition in rural welfare is a relatively
neglected subject. There is evidence that the effect of moving towards cash crops and marketed produce leads to a reduction in nutritional standards. The value of local foods should be re-emphasized. It might be useful to start a food research institute for this purpose.

12. The scope for industrial projects in rural areas should be investigated. To this end it is suggested that a rural industrial investment policy should be clearly enunciated, particularly in regard to raising rural employment and in the design and improvement of technology and services to the small farmer. The concept of industrial estates, as pronounced by the Ministry of Commerce, needs examining in this context.

13. Research is also needed into the agricultural technologies which are appropriate for small farmers. This would include development of cultivation techniques as well as development of animal-draft equipment and other implements suitable for small-scale agriculture.

14. The whole role of expatriates, their function in training and advisory roles needs re-evaluation. This is particularly so in relation to their role in rural transformation.
Mr. Vice-Chancellor, ladies and gentlemen,

I think that my job is a very simple one. I was requested to come and perform the closing ceremony. Since we have had a whole week's discussion and we have, it appears arrived at tentative conclusions, it would be quite wrong for me to re-open matters which might have been debated at great length and on which some conclusion has been reached. But I think, in view of your conclusions, that I might mention a few things that might be borne in mind by those who are going to pursue research on these subjects.

In your summary, you make the valid point that in Kenya, planning for rural development places great emphasis on cash crops as a means of bringing a cash income to farmers. This emphasis dates back to the colonial days when it was thought that Africans had a very high preference for leisure, and an incentive was needed to make them work. The introduction of a Head Tax forced a man with three or four wives to work harder in order to pay the tax. I know that we, in the Ministry of Planning, keep emphasising this. Only last week we were saying that what the Turkana need as an incentive to change their nomadic way of life, is the development of the fishing industry on Lake Rudolf so that they have cash in their pockets. Similarly, in land consolidation, which is proceeding rapidly, the emphasis is on quick cash returns to the farmer - should he grow vegetables
rather than keep a cow? Which of the two would give a quicker return? All this is related to the theory that if you bring the peasant farmer quickly into the cash economy, he will be more receptive to innovation and his horizons will be widened. We use a lot of phrases, all of them aimed at convincing ourselves and the farmer that once he is in the money economy, all other things shall be added unto him. If you think that we overemphasise this, we are interested to know. During 1971/72 we are reviewing the current Development Plan, and these are areas in which we need new ideas.

There is now enough evidence to show that a farmer who moves from the subsistence to the cash economy, pays more attention to yields per acre. You may say that to have 100/- in your pocket where before you only had 10/- is not what welfare should mean, because it depends what you do with your money, and this raises the problem of the true meaning of welfare. I, personally have visited areas in this country where 3 years ago, people had a very limited amount of cash. Now, they have a cash crop and this gives a new impetus to their thinking. There is no doubt in my mind that the introduction of cash crops leads to new ideas. For example, in an area where I opened a tea factory last week, the people have begun to think of bigger things, including transporting their own goods because the increased cash flow means that everybody can contribute something and together they can buy their own lorry. Similarly a lot of other things now appear possible where previously they were desirable but could not be achieved by the farmer. This is quite noticeable in many areas today.

I think we should still consider the idea of finding one source of cash income and pushing it as hard as possible in a given backward area as an approach to breaking the traditional system of thinking and the traditional way of looking at what a man lived to achieve.

The point which has struck me in this summary is the emphasis that the choice should be made by the people and that the role of the government or any other agency should be that of informing the people - make them aware of the alternatives available to them and for them to have, through local leadership, a bigger say in how the programmes
should be handled. This point is a very valid one. In fact it is one of those problems which is always at the back of our minds because it is one of those things which always presents a conflict between the politicians and the Ministers. Indeed when the politician becomes a Minister and has to carry out some project he wants to feel that the project has been adopted by the people and that they are going to support it wholeheartedly. But then two major issues arise. The first is to try and economise on time because in our system if you are going to initiate any significant programme the time it takes you to secure agreement from everyone, and the time it takes you to get the majority of the people committed to a programme is sometimes much longer than is available before implementation begins. Time is always against you. You have to raise the money; do you organize your budgeting before the people have said yes or do you wait until they have said yes and then organize your expenditure and allocate the monies? If you do wait you run the risk that by the time you have organized your other inputs, one of which is qualified manpower and one of which is money, the people have thought again about new ideas. This happens to us time and time again. There is a conflict in these two objectives of getting the people well committed on the one hand and being able to plan on the other because you must have a programme of action for these resources which have to be found by some central organization. If the inputs were all going to be made available by the local people themselves, then you can let them take their times. However since the inputs are found for these rural areas from outside there is the conflict between planning time and number of choices.

The second issue is more fundamental. Many people now believe that the way to introduce rapid rural development is to have a centralized plan which takes into account the whole region and tries to specialise in the geographical sense. There is an argument which is not entirely without merit that in that way you will get a more rapid transformation of the rural economy than in the way which is implied by the summary of your proposals. I am only suggesting that other alternatives should not be written off without being properly examined. There are five or six projects in this country where there has been real discipline, and which have been very successful judged on the purely economic criteria of total production. I am not saying they have been very successful
in any criteria which you might have worked out about what is the content of welfare. In that narrower criteria of production, projects which have had a lot of discipline have tended to be much more successful. This is something that should be kept in mind when we are checking these other proposals which you have put forward.

There is a point made that the use of the extension service which is itself a limited resource in the country, should be equitable in its distribution etc. One of our big problems is that where we have very successful extension officers we are regularly faced with the problem as to whether or not we use them for new projects or let them complete old projects that they have started. This is an important practical problem, which may be related to the role of expatriates, but it refers to the role of all qualified people. For instance we might get a very good man working in the Mwea rice scheme, he knows all the problems and has been there three or four years and the project is going well. Do we let that chap continue to specialise or are we going to use him in further pioneering work say at Athoro in a new project? This is a problem right now in the country, and it is important. Recently the family planning people had the same problem- you get a person who has learnt how to carry this information to the rural population in a given district, he learns their customs, he knows who is likely to object, and then having been successful do you really want to move him on? This whole question of utilization of extension services in the rural areas is a crucial one remembering that we have limited numbers of people. There are people now arguing that we could get better results in the end if we took small sections, say half a district, concentrated our extension service people there, let them transform that area and let everybody else look and see for themselves what has been done, and to see the necessity for rural development. Of course these people point to a few examples. They point out that you can attain change by concentrating on a small area. They tend to underestimate the visitors and say that they are too conservative. But the criteria for choosing such areas will be very difficult in the political context.
On family planning I think you are right but we have encountered a major problem. We have found that attempts to expand the family planning programme to rural areas are constrained by the limitation of the health facilities because in the past these two programmes were not thought of as being integrated and inseparable. So today you have the family planning programme and the extension of the health services with separate personnel. There was an effort to bring them together by allowing the family planning personnel to use the Government clinics, but then there are not enough clinics and not enough hospitals and we have found that the people who were the first to come for family planning advice were always those with health and medical problems. Then the next category that come for advice are those who have already produced all the children they want and they are looking for advice on ways of stopping production. So the statistics which suggest that the numbers of people coming for consultation are increasing are in fact of people in these categories. Therefore, you are right that the emphasis should now change from spacing of children to a plan for population limitation. The first thing is to provide information on how it can be done. You must first teach the average Kenyan that family planning can be done; and that it is not anti-God.

We have already made a decision to combine the District Development Committees. Instead of having an Advisory and a District Development Committee, we shall have only one committee in a district. There are two issues being discussed which have been touched on by the Ndegwa Commission. The first is who should be in charge of these Committees? This is quite a serious problem because everybody can see that these will become important institutions. It should be looked at as an effort to co-ordinate the activities of self-help groups and those of the various Ministries that are involved and co-ordinate them at the level that really matters. The proposal at the moment is for the District Commissioner to be the Chairman and all other officers in the District to be on the Committee and a few politicians, etc. A body like that will be a very good organization but there is the question of what level of decision you expect them to make and the amount of information you expect them to have. If you want it to be a representative body incorporating the local leadership and you want them...
...be sufficiently informed to be able to make decisions that can fit into your national development programmes, there is quite a problem to solve. There is a suggestion that one way out is to provide a qualified person to be, say, secretary. This would work to some extent, but there will be always the problem that you cannot expect a committee made up of the kind of people I have just mentioned to be very well informed on detail, therefore it will tend to become a political organization and it comes back to the point that I raised earlier as to how much time you are going to allow them to make up their minds. If they are going to hold five or six meetings to decide one point it is no good, you must have a time limit.

Well, we note the proposal about land tax. This has been proposed continuously in this country over a long period of time. One context in which it was just about to be adopted and then was withdrawn was that a land tax based on the un-improved value of the land might lead people to utilise the land more. It might do this, but even if it didn’t at least it would be looked at as a source of income for the local authorities and local communities. The way I myself look at it is that anyone who owns land, good land, ought either to make good use of it or pay something for the privilege of retaining it. I am not sure that you will find a tax that will be a substitute for any other tax. Taxes are always added on to other taxes since you can never raise enough money for the things you want to do.

On the small farmers, the arguments you raised on marketing are probably the most important. In fact the one sector that is most in need of some definite research work is the marketing of the produce of the small farmer. In this country I have no doubt in my own mind that if we could improve quickly the marketing of what is produced by the small farmer this would be the quickest way of inducing real change in the production system of this country. When we open a good road to any part of the country you suddenly see that area operating new activities which farmers themselves organize. Certain things which looked impossible before become possible when the roads are there. You can buy vegetables in Nairobi from the Taita Hills, for example, because of the new good road. The old problems...
transportation have been overcome. This is a field in which we could do with proposals. The change in Kenya on the marketing of milk was another example. A very simple decision was made that the transport costs for milk to the factory would be borne by the whole industry; so a small farmer pays the same transport charges for his milk as the farmer next door to the factory. This has meant that it has suddenly become possible for all the factories to work at full capacity all the time.

Your point about co-ordinating education is very important. We waste a lot of time and resources in this country through duplication in this one field of educating the farmer. There is the Education Department, the voluntary organizations, the village polytechnic scheme and the rural development centres and there are the Farmers Training Institutes. We have far too many agencies trying to do the same thing and we are wasting scarce manpower. If in this one field we had a measure of co-ordination we would not only save a lot of money but we would easily do three times the job that we are now doing. I am sure this is an important field for proposals, it is an obvious problem.

On the rural employment question, I hope that you discussed one of the problems we have discovered. In the first place we used to argue that if we improve rural welfare then the migration to towns would be reduced, and you have some people who are still arguing this old, old theory. But it is only a theory, and you are going to have to deal with the twin problems of mass-migration to the urban centres and also the need to improve rural welfare. Improvement of rural welfare will not in itself reduce the numbers going to the towns. The population of this country is growing very rapidly. The rate at which you improve rural welfare is not going to catch up with this growth in numbers, and what is more important, the improvement in the productivity of the land which must be the base to other things you want to do, will come when the productivity from that sector has been stepped up. If you start from that kind of base it is quite clear that the rate of improvement will not be such as to
reduce the numbers going into the towns unless you were by some good chance able to limit the increase in population in a very sudden and dramatic manner which is unlikely to happen. One must look at rural welfare as an objective in itself and not raise the false hopes that it will be solving the terrible problem of rapid urbanization. So I plead, do not raise that particular hope in our minds.

Nutrition is a very important field and the women's organizations ought to be associated in this. Again there is an overlap on this.

Finally, there is this very exciting field of what technology we want for the peasant farmer. I do not know what conclusion you have come to but there is a split within the Government between those who are convinced that we are trying to bring very advanced technology to the farmer and the others who say that the type of technology that has to be brought to the farmer is the technology that those who are going to teach it know something about. There is an argument as to whether the State should subsidise the importation or manufacture of agricultural implements and if so what implements? This is still unsolved, it is an issue which is still being debated. There is an argument that it is cheaper for this country to import ready made agricultural implements from people who can produce them more cheaply than saddling this economy with the local high cost production of these implements. There is even an argument that we are quite wrong to encourage the small scale farmer to use expensive fertilizers. There is no agreed solution to this problem at the moment. I have my own views but I do not think I should mention them today.

Thank you very much for having invited me here today. We want to work closely with the I.D.S. because everybody is well aware now that there are fields where the knowledge of people who are doing research can be very useful to the people in the Government. It is going to be much easier to organize this kind of co-ordination now that the various Ministries such as Agriculture, Education, Health, Works etc., have set up planning units which they did not have before. We want to encourage
a much greater dialogue, in its proper meaning, between
the people who are doing research and the people who are in the
field. In the end it will benefit both sides. We will
be very interested in the conclusions of your seminar.

(Mr. Kibaki then agreed to answer a few questions)

MR. MUTISO: The issue of expatriates was a central issue here.
I wonder if you would agree to make some kind of comment such
as you made on the other issues?

MR. KIBAKI: The role of the expatriate needs review as you say,
not merely in the rural transformation but in the whole structure
of Government activity. Initially at the time of Independence
a new breed of expatriate was brought in to advise in this
country. They had their run for about four years giving all types
advice and the bulk of it was taken. Then everybody developed
a greater sense of self-confidence and you can see it in the
revision of our present plan. The local people have been much
more forthcoming and categorical about what they want. So even
in the structure of government the role of expatriates needs
to be reviewed so that it should become more specialised than
it was before. We should now do without that breed of expatriates
that advise a whole Ministry. On the other hand take our
Ministry, for instance, where we are reviewing the income tax
legislation which was passed in 1958 and has since been amended by
about 15 legislations. We now need somebody who has done
some work in this field in other countries to advise us.
Within Ministries I am sure we could do with that kind of
expatriate with their terms of reference clearly worked out.
Another example is water development where we are very short of
hydrologists and such other specialised skills, so we will need
expatriates in this field.

There is a separate question of the role of expatriates
in training. We will continue to need them in the training
institutions. Again provided we work out what kinds of training
we need and the particular skills in which we do not have local
people we will require expatriates to assist in training.

There is one field which we do not want to curtail and
that is the field of volunteers. I have been very impressed
by volunteers who work with missionary groups and others who
seem to be quite dedicated people in their jobs. This is a field
we do not want to limit; it is a very encouraging one and provides
certain qualities which are sometimes missing. You need that kind
of person for the quality of life he brings apart from the skills
MISS MORAA: I sincerely hope that you are not planning to leave this question of nutrition in the hands of the Maendeleo ya Wanawake?

MR. KIBAKI: In some ways you are right but 90 per cent I do not agree with you. We do need research and qualified people to investigate but there is enough knowledge now in this country about how we should feed the little children though it is being made available on such a limited scale because we insist that we shall teach it only when we have the teachers. This is where we need change. Some of the basic information that the rural women need on feeding children is not made available to them at the moment. These Maendeleo ya Wanawake groups bring that kind of information to the rural women and at a level that they understand. Then they also teach the importance of cleanliness which is a primary need in the rural areas. We have enough knowledge which needs to be spread on a large scale and quickly to the rural areas and it could be done by groups like the Maendeleo ya Wanawake.

?? : In one of the suggestions, this Workshop emphasised that we need more de-centralised planning processes and this is connected with the whole idea of expatriates because the planning is done in Nairobi by expatriates in your Ministry. Would it be possible in the next plan to exclude expatriates and also make the planning process completely de-centralised. Secondly, this Workshop emphasised strongly that ideology is extremely important in rural development. Would the Minister enlighten the Workshop on this, whether there is an ideology guiding the policy makers?

MR. KIBAKI: I do not want you to put blame on the expatriates for everything. The planning is not centralised or de-centralised because of the expatriates. This has to do with the machinery of Government, and it has nothing to do with whether or not a job is done by expatriates or by Kenyans. The fundamental question is whether you want to work out your plan as you suggested from below. How far below? If you are Government and you want to produce a plan you are not going to have a plan which has ideas which are produced from below, it just is not feasible, you would take 20 years to work out a plan and still would not have one. You must have a framework and within that framework you are accepting ideas from above, below and from the sides. Are there institutions for evolving proposals from the village level? You may set up ad hoc consultations at the village level where you listen to what they want and take a note of it. But not every suggestion can be included in a plan. Who proposes these things? Really it is the veterinary officer, the educationalist or some missionary, the chief traders - who in this country are slightly better organized than the farmers - or some of the co-operatives or bodies like that. At the level of the Ministry there was quite a lot of pruning which had to be done. The Ministry of Planning has tried in the plan to co-ordinate what comes from all these separate departments. It has not been planning in the sense of some of the very centralised economies. Above all it has not really had anything to do with their being expatriates. This - not because 90 per cent of what was produced was all from the field.
On ideology everyone has his own view. Some people say that you cannot have a proper organization for development until you have one central ideology. I am not convinced of this. It cannot be true. We have had development in numerous countries. What can be argued by people who insist that you need an ideology is that if you have one central ideology it reduces the field of quarrel. This might be true. But I do not think it can be argued that you will have more rapid development if you have a centralised ideology unless you tag on the decision-making and implementation. So it is an argument about structure not ideology. In the end it comes down to a matter of organization of the institution and the system under the ideology.

MR. KARUGA: This problem of a dialogue between the University and the Government, particularly data and the creation of national research capacities in this country and the development of local experts. One of the problems resulting from lack of manpower is that what expertise we gain is not passed on as knowledge for future administrators. Information gained in the research institutions is not passed on to the Government implementors. I would like your views on the creation of a programme between the Government and the Universities.

MR. KIBAKI: You are quite right, there is not enough dialogue or exchange of information and knowledge between Government bodies and the University institutes. There should be more. One of the proposals put forward is to have a Research Council which we hope will assist in encouraging research in fields that Government also regards as important. We are trying to set up that kind of organization and to review the whole field of financing of research. Until this is resolved we shall continue to have problems. We need to have more regular plain discussion. We should have more informal discussions because it is there that we are going to benefit. There is only a handful of people in the Government who have the time or the inclination to read many of the research papers produced. We should have discussions between people in the Government and people doing research. By Government I mean politicians and Ministers.