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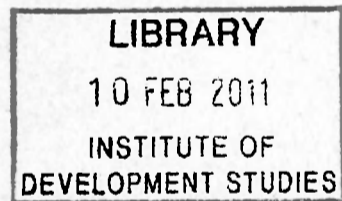
ACCELERATING THE FLOW OF NEW IDEAS TO RURAL
PEOPLE, A PROPOSAL FOR A PILOT EXTENSION
TRAINING PROJECT IN NYERI

By

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A B S T R A C T

The present paper is subdivided in three sections. In the first section, an overview of the development of the Special Rural Development Programme, from its inception at the 1965 Kericho Conference, to the present time, is presented. In the second section, we focus our attention specifically upon the Tetu Division SRDP. We describe our rationale, methods of research design and major findings of the Tetu Extension Pilot Project baseline survey conducted in 1970. The final section is devoted to a proposal outlining an experimental strategy for increasing rural incomes via the acceleration of the flow of income-generating ideas and practices to small scale farmers.

NOTE TO THOSE REQUESTING THE PRESENT REPORT AS A RESULT OF READING THE RECOMMENDATIONS OF THE "REPORT OF THE (WAMALWA) TRAINING REVIEW COMMITTEE, 1971 - 1972"

- Those interested in reading only the proposed programme for training farmers, please turn to page 21, "THE TETU EXTENSION STRATEGY". A "SUMMARY OF THE PROPOSED TRAINING PROGRAMME" can be found on the page following the ABSTRACT.
- Those interested in also reading the results of the baseline diagnostic research which led to the programme for training farmers, please turn to page 14, "THE TETU BASELINE RESEARCH".

~~SUMMARY OF THE PROPOSED TRAINING PROC.~~

(1) Classify each farmer in a given area into one of the following levels or categories:

- (a) progressives (high users of new productivity increasing techniques and practices, such as hybrid maize, fertilizer, grade cattle, etc)
- (b) upper middle
- (c) lower middle
- (d) laggards (non-users of new productivity increasing techniques and practices)

(The diagnostic baseline research allowed the development of a quick and simple method of classifying farmers into the four categories)

(2) Select farmers to be trained in a given FTC course from one of the above levels or categories, so that each group trained is homogeneous in terms of sophistication in farm management.

(3) Train each group of farmers in the FTC according to curricula specially developed for each of the 4 categories or levels, so that each curriculum fits the level of sophistication of the category in question. The training at the FTC will be especially geared to creating awareness and interest in the advantages of using new productivity raising techniques and practices. Step 3 will, therefore, require training FTC teachers in communication and persuasive skills.

(4) Provide farmers with small free samples of fertilizers, seeds, etc., so that they can try out new ideas on their farms on a small scale without much risk.

(5) Charge FTC fees according to a sliding scale based on course level such that the higher the level the higher the fee.

(6) Provide follow-up to farmers who have gone to a FTC training course by directing extension workers (JAA's) to visit the farmers in question on their farm, so as to give them the necessary further advice and motivation. Such follow-up will systematise the distribution of extension services and avoid the present tendency of extension workers to only visit the most accessible or progressive farmers. Step 6 will require training extension workers in communication and persuasive skills.

(7) Select farmers who, by following steps (1) through (6), progressed to a higher level or category, for the course that fits the higher level. Thus farmers will progress from level to level, just like school children progress from standard 1 upwards.

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BACKGROUND TO THE SPECIAL RURAL DEVELOPMENT PROGRAMME

The Kenya Special Rural Development Programme (SRDP) emerged as a consequence of the Kericho Conference held during September, 1966. The earliest aspects of the programme have been succinctly summarized by Nellis* (1970) who states that at the suggestion of Mr. Guy Hunter and the late Sir Andrew Cohen, the Government of Kenya approached the University College, Nairobi in 1965 to hold a conference on the issues of education, employment and rural development. A Planning Committee was appointed in April, 1966 to organize a Preliminary Workshop which subsequently laid out the framework for the Kericho Conference.

Conclusions of the Kericho Conference

About eighty social-scientists, Government planners, leaders and administrators attended the Conference. The main conclusions** stemming from the Conference stressed the need to design action programmes dedicated to developing ideas for generating increased incomes and employment opportunities through increased agricultural productivity, through reorganization of the agricultural extension services and farmer training, and through increased funds and responsibility being assigned to the local level. In summary, the Conference suggested the establishment of "pilot areas" covering a varied and socio-economic cross-section of Kenya in which integrated approaches to rural development, supported by external funding sources, could be tried and tested.

The Conference conclusions suffered a major shortcoming: they were long on ideals but short on ideas with a potential for high pragmatic payoff. This short-coming prompted a University team*** to put forth in 1967 a document treating of pilot projects in rural development embodying the following recommendations:-

- (1) That a National Co-ordinating Committee be established to initiate special development projects, to integrate these with the governments on-going activities, and to co-ordinate rural activity to avoid wastage and duplication.

*The present Background to the SRDP borrows heavily from J.R. Nellis, "The Special Rural Development Programme: September, 1966 - July, 1970," Background Report No. 1, Institute for Development Studies, University of Nairobi, 1970.

**The original conclusions are contained in J. Sheffield, ed., Education, Employment and Rural Development, pp. 3-32, East African Publishing House, Nairobi, 1967.

*** See Cowan L.G., J. Heyer and J. Moris, "Pilot Projects in Rural Development."

- (2) That these special programmes should be essentially replicable elsewhere in Kenya in order that they benefit the country as a whole;
- (3) that pilot areas representing the varying ecology and development prevailing in Kenya be selected as experimental testing grounds for developing special programmes;
- (4) that baseline surveys to determine present conditions in these selected areas be carried out to provide a basis for evaluating the usefulness and suitability for replication of the special programmes developed within them;
- (5) that external aid be sought to support these initial experimental activities;
- (6) that existing extension services and rural training projects and institutions be re-organized to make rural life more attractive.

These recommendations* have since become familiar SRDP tenets. However, they served primarily to sharpen and focus more clearly the original Kericho Conference recommendations, but sidestepped the more knotty problem of offering practical suggestions for specific action projects which gave promise of high payoff in terms of accelerated rural development.

Kericho Follow-up Activity

These shortcomings notwithstanding, fourteen pilot divisions were selected in 1966 as areas in which the notions of SRDP could be operationalized. The Division was selected as the most suitable administrative unit for SRDP purposes. These included:-

- (1) a number of locations in Kwale District;
- (2) Mbere Division in Embu;
- (3) Tetu Division in Nyeri;
- (4) Vihiga Division in Kakamega;
- (5) Migori Division in South Nyanza;
- (6) Kapenguria Division in West Pokot;
- (7) Irianyi Division in Kisii;
- (8) Wundanyi Division in Taita;
- (9) Yatta Division in Machakos;
- (10) South Imenti Division in Meru;
- (11) Kiharu Division in Mur'anga;
- (12) Northern Division in Baringo;
- (13) Northern Division in Mandi; and
- (14) Central Division in Busia.

*These recommendations were substantially reiterated in Guy Hunters 1968 paper, "Kericho Conference - Pilot Projects: Preliminary Notes on Objects and Structure."

The first six Divisions mentioned above were subsequently designated "first phase areas" (one for each province), each representing a different stage in the order of economic advance, so that the initial experiences gained in them could later be replicated in the remaining eight "second phase areas." It was originally intended that these first phase areas be selected on the basis of the results of baseline surveys designed to produce objective and independent inventories of existing and potential development in each of the selected areas. These surveys were carried out in mid-1968 by a University team of two economists (J. Heyer and D. Ireri) and one sociologist (J. Moris). Their 1969 report,* treating of the general conclusions drawn concerning rural development in Kenya and suggesting certain strategies which could be implemented in an intensive rural development programme, was delayed to the point where it did not feature in the selection of the first phase areas. A second report which would have described and analysed in detail the responses of farmers to existing programmes ~~has yet to appear.~~**

The report which was presented dwelt upon such bases for increasing rural incomes and employment as the introduction of new products, improvements in existing farm products, improvements in marketing outlets for existing products, improvements in the effectiveness of the extension services, reliance on research, the cautious extension of credit, the provision of small-scale water schemes, the addition of non-agricultural activities, the expansion of education and training components, the exploitation of the mass media, books, mobile units and existing groups and clubs, and improvements in administrative structure and ~~infrastructure.~~

Creation of a Co-ordinating Body

In 1969, the National Rural Development Council (NRDC), earlier suggested by Cowan *et al*, came into being to press forward the foregoing suggestions, to co-ordinate SRDP efforts, and to negotiate external finance and technical assistance with donor agencies and countries. To date the Swedes and FAO (Migori), the Norwegians (Mbere), the Americans (Vihiga), the Dutch (Kapenguria), the British (Kwale) and the Germans (Irianyi) are in varying degrees already involved in SRDP.

* J. Heyer, D. Ireri, J. Moris, "Rural Development in Kenya," University College of Nairobi, 1969, later published under the same title by the East African Publishing House, Nairobi, 1970.

** Some early findings were presented both in the 1969 report and in J. Heyer and J. Ascroft, "Preliminary Results of a 1968 Survey of Farms across Kenya," Universities of East Africa Social Science Conference Paper, 1970.

A major function of the NRDC was to monitor SRDP projects aided, particularly with respect to research and evaluation, by a specially recruited team of developmental experts located in the Institute for Development Studies, University of Nairobi.

The NRDC charged itself with the duty of bringing forth imminently replicable procedures and techniques for increasing rural incomes and employment via a series of initiatives designed explicitly to work through the normal Government machinery. These initiatives were to be additional to the normal on-going development programme of Government, representing special intensive efforts directed to an experimental programme to test new approaches to certain basic rural development problems within selected pilot areas. These new approaches were to be reflected in separate outline programmes prepared for each SRDP area by the provincial planning staff in consultation with officers of all affected departments. These outlines were to set out strategies for action programmes in the areas concerned. All the first phase areas and a few of the second phase areas now have such a document prepared.

Growing Pains of the SRDP

Alas, these "new approaches" which perhaps set too much of an expectation of startling programmatic breakthroughs both in terms of income- and employment-generating initiatives, and in terms of innovative re-organizations of the extension services and farmer training procedures, were not immediately forthcoming. The programme outlines proposing projects and actions to be carried out within each selected area in the name of SRDP reflected nothing "special" apart from scattered improvements and largely intensifications of already existing programmes. They were, in effect, little more than area-based goal-setting documents which offered scant information about the people-oriented actions designed to attain the goals.

Adding to the problem, the programme outlines themselves were put together by local level government personnel with some assistance from Central Government, few if any of whom were especially well versed in the processes of experimental design. As a result, they failed to incorporate to any appreciable degree normal methods of scientific experimentation involving appropriate treatments carefully introduced and evaluated against comparable control groups.

Each of the programme outlines so far developed for individual SRDP areas constituted a variegated package of diverse projects, programmes and experiments. If the entire package were to be introduced at the same time in any one area, the problem of evaluating the separate effects of its different components becomes so complex to be virtually impossible. Indeed, one would be reduced to determining whether the global package as a whole succeeded or failed. If it succeeded, we will never know whether we have carried forward for replication a number of uneconomical, deadwood projects; if it failed, we would likewise remain in the dark as to whether we have lost a number of innovations which likely would have succeeded if they were introduced in isolation of the rest of the package. The procedure is certainly not parsimonious, leave alone scientifically acceptable.

In a sense, these considerations render in base relief the divergent approaches of government practitioners vis-a-vis academic professionals to problems of rural development. The former's approach, in so far as it is manifested in the conduct of the SRDP from the view point of government, appears to be to do all at once in a co-ordinated integrated way to secure rapidly the desperately needed broad-front, multifactor development within each SRDP area. This approach is impatient of the rigorous, time-consuming seemingly small-scale experimental and evaluation standards of the trained scientist who always seems to end one research project by calling for more research. The scientist, on the other hand, is in turn impatient of this bull-in-the-china-shop approach which seemingly sacrifices rigor and control for quick short-lived, non-replicable results. For him, the main rationale for pouring large sums of money into the development of one small area is less the maximum development of that area and more the opportunity to develop carefully controlled and tested strategies and approaches for replication in greater Kenya. This approach is admittedly by its very nature more tedious and longer range and demanding of expertise not available (or, for that matter, appreciable) in government. It is imperative that some accommodation between these two divergent views be sought in the interests of getting on with the business of rural development. This accommodation must at once reflect the urgency of the practitioners' approach as well as the rigorous testing methods of controlled experimentation which, after all, form the cornerstone of the scientists training.

Further confounding the issues is the fact that SRDP was prematurely publicized in some areas, notably in Vihiga and Tetu. July 1, 1970 was set as the date for the official commencement of the SRDP in the first phase areas. Consequently, barazas were held to mobilize the people of these two areas, firing their hopes in respect of a programme which was far from ready to roll. Funds were not forthcoming, either from the donors or the Government so that the official commencement had to be postponed. Few, if any, people involving programs were ready for launching on the first of July. Thus, the hopes of rural people, which were so precipitously raised, inevitably turned to disappointment and skeptical ridicule which directed itself, in large part, upon the personage least involved in the SRDP machinations; namely the field level government worker. The loss of public support and field worker morale resulting from the tactical error of premature mobilization must presumably be great and immensely difficult to recoup.

Yet withal some programmes have got off the ground at least in part. In Vihiga Division a hybrid maize credit scheme and farm management training project is underway. A cotton block programme, *inter alia*, is being pursued in Mbere. And in Tetu Division, a pilot extension project aimed at accelerating the flow of income-generating ideas to rural people has been proposed. Acceleration of regular programmes such as roads, cattle dips, nurseries, holding grounds, 4K clubs and reticulated water schemes have occurred in some areas.

The SRDP, in principle, remains a rousing and rallying innovation which has taken root and flourishes, albeit somewhat feebly, in spite of its present growing pains. But these pains have taken their toll as well. Already there is talk of abandoning the second phase areas and expanding the first phase areas to District level. The former may be a valid suggestion in as much as it enables the redeployment and concentration of those scarcest of resources, skilled man power, in fewer areas. The latter suggestion, whilst being not without merit, smacks too much of dilatory tactics, if not of a way to phase out gradually the underlying notions of the SRDP.

The clear lesson learnt from the trials and tribulations of the SRDP so far is that it is easy to set lofty goals, but difficult to chart a feasible, inspiring course for their attainment.

Bridging this gap between intentions and deeds, between ideals and ideas is perhaps the single main difficulty bedeviling the Special Rural Development Programme in Kenya. It is the bridgement of this gap to which the balance of the present report is addressed.

THE TETU EXTENSION PILOT PROJECT

Of the six first phase areas designated for S.R.D.P, personnel of the Institute for Development Studies (IDS) have selected Tetu Division in Nyeri District as a primary pilot area in which to explore and experiment with new approaches to accelerating rural development. In addition, one second phase area, Irianyi Division of Kisii District, was selected to serve principally as a replication area for the initiatives developed in Tetu Division. It is particularly interesting to note that Tetu Division alone, among all first phase areas, is still without a declared or potential external donor of S.R.D.P. funds. In a sense, therefore, the IDS has taken upon itself the functions of an external donor and, appropriately, funding for the Tetu Project so far has been provided entirely by the Government of Kenya through the Ministry of Finance and Economic Planning.

The balance of the present report, therefore, focusses upon the progress of the S.R.D.P. in Tetu Division, with particular emphasis upon the proposed pilot extension project.

Outline of Objectives of the Tetu Project

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 broadest 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.

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 provided the broad terms of reference for the IDS effort in Tetu. In addition, we bore in mind the original Kericho Conference conclusions and especially the subsequent further explications of the conclusions provided by Cowan et al. These included the principle of replicability, the conduct of initial baseline studies and subsequent evaluation, the revamping of extension services and farmer training projects, and the development of "new approaches" dovetailed into the existing government machinery and programmes.

We have decided initially to attack the problem of income-generation through increased agricultural output under the assumption that measures to raise the level of production would likely result in increases in the level of employment and rural welfare.

The Tetu Division Outline Programme further includes a number of intermediate objectives calculated to lead to the attainment of the primary objectives. These are stated as follows:-

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.

The programme outline, however, left unspecified what precisely was meant by "an intensive extension effort". It also left undefined the concept of farm management, nor did it indicate which farm management manual, if any, would be used. The intermediate objectives, however, clearly implied an experimental design of field research to determine which of various extension inputs produced the greatest adoption of those behaviours likely to increase productivity of food and other crops. Specifying the extension effort and experimental design, therefore, marks the domain of the Tetu Extension Pilot Project.

Rationale for Replicable Experiments

The SRDP tries to kill two birds with one stone. On the one hand, it aims at accelerating rural development in a limited geographical "SRDP area," and on the other, at developing strategies which can be replicated to accelerate development in other parts of the country. These two aims seem compatible enough: successfully accelerating development in a small area, implies the development of successful strategies for replication in a larger one. In practice, however, the two aims are often incompatible.

Stressing accelerated rural development of a small geographical area often makes it very difficult to carefully test a strategy to accelerate development of a specific aspect of rural life, let alone that there is time or opportunity to test alternative strategies. The everything-at-once approach makes evaluation difficult: one loses the ability to attribute a certain increase in development to specific actions and/or policies. Experimentation with strategies implies the use of a control group on which one does not use the strategy. This becomes difficult when everyone wants to benefit at once from the SRDP effort.

Yet, the rationale for pouring large sums of money into small areas can only be to develop and test strategies which can benefit the rest of the country by replication. The focus on accelerated development in a small geographical area not only detracts from the possibility to

develop and test strategies, it becomes short-sighted if one realizes that, for the short-time benefit of developing a small geographical area, one loses the opportunity to allocate the substantial SRDP resources to the development and testing of strategies which could benefit the whole country.

And it is very important that various efforts are made to develop and test new approaches to rural development, to develop and test new combinations of resources at the disposal of government, be it funds, personnel, power or other resources. "If you don't first try-out a small inexpensive ~~scale, you will end up~~ by trying-out a pilot project on a large expensive scale," and possibly fail on a large scale, as has often happened with new programs such as the ill-fated groundnut scheme in Tanzania.

The pilot extension/training project proposed in the present paper aims at developing and testing a specific strategy, at a reallocation of resources presently available to government -field workers, and the FTC - to achieve a greater impact on rural development. As such, we hope that the proposed pilot projects function as a proto-type which demonstrates the utility of carefully executed "test projects" aimed at increasing the impact of government policy.

It must, however, be borne in mind that the Tetu SRDP calls for two major inputs; (1) idea-intensive inputs, such as the diffusion of high-yielding seed varieties and more productive crop and animal husbandry techniques, the introduction of farm management and planning, improvement of credit and marketing facilities, increasing awareness of nutritional needs, amalgamating co-operatives and similar inputs requiring more creativity and technical know-how than money; and (2) capital-intensive inputs such as the construction or improvement of roads, water schemes, training centres and similar infrastructural facilities, the predominant requirement for which is a substantial input of money. The IDS effort is restricted largely to the development and introduction of idea-intensive inputs.

Focussing on the idea-intensive aspects of rural development necessarily presupposes a focus upon those individuals who will act as the carriers of the new ideas to the intended users. In the context of the Tetu SRDP, the carriers are mainly field level extension agents in

such ministries of government as agriculture, community development and social services, health, education, commerce and industry, and local government, and the intended users are farmers, co-operatives, self-help groups and similar individuals and social organizations in the rural areas.

These carriers, however, represent only the interpersonal forms of communicating new ideas. There are, in addition, the mass media; namely, newspapers, radios, television, handbooks, pamphlets and the like which also serve to spread ideas and which, therefore, are also needful of our attention.

Research Design and Methods

Scientific inquiry proceeds along certain systematic and controlled pathways which are essentially easy to follow. Unfortunately, not many individuals claiming to be scientists, particularly those who habituate the underdeveloping world - for it is underdeveloping, not underdeveloped - have sufficiently grasped and internationalized the methods of scientific inquiry to render their work uncluttered by weasel-worded mumbo-jumbo. Such scientists are given to clouding their work with a spurious mysticism which only raises the hackles of the practitioner and induces him to denigrate the scientific approach. Scientific procedure is, nevertheless, characterized by a number of relatively separable steps which we commend even to the non-scientist because they allow the researcher to solve problems economically and systematically.

To illustrate these steps, let us follow the problem solving process of a generally acknowledged expert, the medical practitioner, pointing out the procedural parallels followed by a relatively little known expert, the behavioral scientist epitomized by the IDS researcher team, while at the same time showing how the behavioral scientist and the government practitioner may co-operate with each other in problem solving to mutual advantage. We have illustrated these various procedures schematically in Figure I.

Problems needing solutions arise when there exists a marked difference between the present undesirable conditions prevailing in a particular situation and the desired conditions which are intended should prevail in that situation. One may, for instance, be feeling unwell due to some physical ailment. One's present condition, therefore, is undesirable and contrasts sharply with one's desired condition which is to be well again. One therefore seeks a solution to remedy the condition by having recourse, if one is wise, to an expert medical practitioner.

Similarly, the Government may perceive ailment in the present condition of the rural economy and may articulate this ailment as stemming from undesirably low incomes and employment opportunities. The desired state may be a means of ensuring ever-increasing rural incomes and employment opportunities to remedy, in a relatively permanent way, the present conditions. If the Government does not have the necessary expertise within its own ranks to search for appropriate solutions, then perhaps it would do well to exploit the expertise available in such institutions as the IDS with its corps of trained behavioral scientists. The trick, of course, is for Government, like the patient, to recognise its own problem solving limitations and the need for expert help.

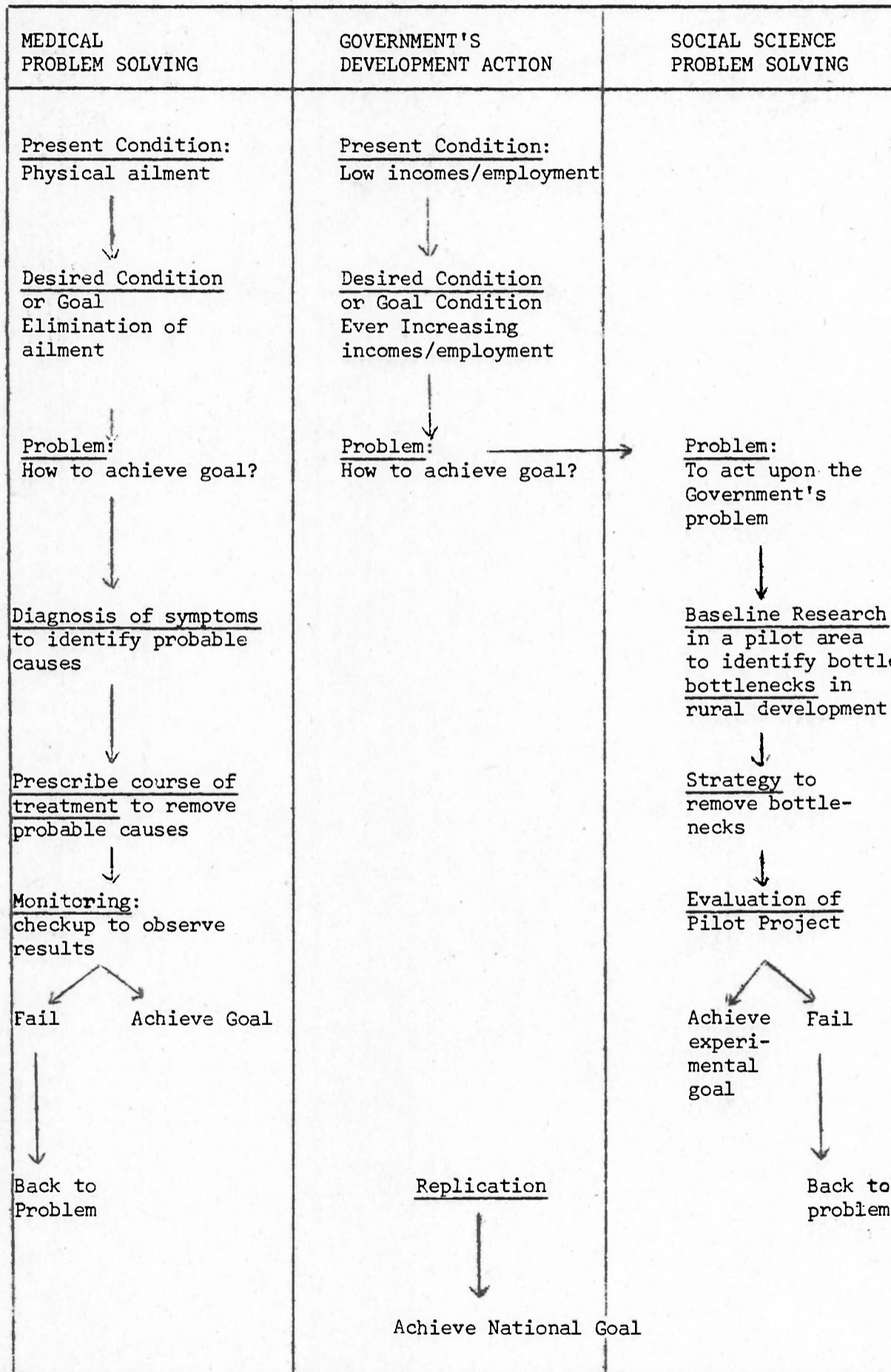


Figure 1: Stages in the Problem Solving Process

The normal procedure followed by the medical doctors confronted by an ailing patient is to set about diagnosing that patient's ailment by systematically observing the patient's present condition in search of symptoms or probable causes of his problem. In the same way, the IDS research team, confronted with the Government's problem of low incomes and employment opportunities, conducts baseline research, corresponding to the doctors' diagnosis, which accumulates information about the present condition of rural people in a particular area, thereby allowing the IDS research team to identify the bottlenecks to rapid rural development.

The doctors' examination terminates, if the patient's malady is indeed curable, in the prescription of a course of treatment designed to eliminate or at least ameliorate the probable causes of the patient's problem. By the same token, the IDS research team also suggests a strategy or course of actions to overcome the bottlenecks to rural development.

Here, however, the analogy between the medical and the IDS researcher team comes somewhat apart. Medical practitioners by and large have a large fund of tried and tested treatments for a wide range of physical ailments. The scientist in rural development is still in the exploratory stage of pioneering new approaches to rural development. Consequently, he is less confident that the strategy he suggests will produce the desired results without also producing other undesired side-effects and unforeseen consequences. Therefore, the developmental scientist must proceed more cautiously, conducting small-scale experiments in a limited pilot area before extending his strategy to the whole country. But then, this procedure is also followed rigorously by the medical practitioner who is careful to test new drugs or birth control methods on a small sample of volunteers before releasing the new technology for general use.

Having prescribed the treatment, the doctor monitors his patients' progress through periodic check-ups, evaluating the results to determine whether the treatment he prescribed is producing the desired results. If it is not, he is back to square one. However, if it is, then the problem is solved. The patients' goal has been achieved. The IDS research's team also carefully monitors the progress of their experimental strategy and subjects its results to careful, controlled evaluation, comparing the results obtained in the pilot area where the strategy was applied with

the results in a control area where the strategy was not applied. If the results indicate a significant improvement in the experimental area but not in the control area, then the strategy is shown to be useful. The IDS researchers may now be moved, armed with the confidence of their experimental success, to recommend to government that their strategy be replicated on a wider scale towards the achievement of the national goal. If they fail, or are partially successful but dogged with unforeseen consequences, back to the drawing-board they go to start all over again, perhaps with an alternative strategy now modified in the light of their newly gained experience.

In the absence of this kind of problem solving expertise, what might government have done? It seems reasonable to assume, based on a reading of the SRDP project outlines so far produced, that their diagnoses and prescriptions would have been limited to repeating previous limited-results remedies, perhaps this time increasing the dosage, or equally likely, resorting to exhortations to harder work. Both ways, the strategy places a heavy reliance upon doing more of the same. This argument is perhaps not so much a criticism of government as it is a criticism of behavioral scientists to organise their activities so that they clearly augment and compliment the government machinery instead of conducting academically elegant research which, in the final analysis, proves to be only of limited, esoteric interest.

A final word on the processes of scientific inquiry might well be directed to mitigating Government's proclivity to expect quick results. Even though medicine is an established and respected science, some maladies, like T.B., often require tedious and lengthy treatments. Few would accuse the medical practitioner of dilatoriness or abandon his services in favour of some quick remedy offered by some non-expert. The IDS social scientist is considerably less favourably situated since his art is still young, his instruments still primitive, and his patient, the social system, still largely a mysterious entity. Bear with him: he is trying hard.

THE TETU BASELINE RESEARCH

The IDS research team having accepted the Government's problem that rural incomes and employment opportunities need to be raised, established Tetu Division as a pilot testing-ground for experimenting with new approaches

to solving this problem. Towards the end of 1970, a fact finding baseline survey was conducted across a representative sample of 354 farmers in Tetu Division with a view to gathering reliable information to allow the identification of the main bottlenecks to rural development.

The research was ~~started~~ to the primary area of speciality of the researchers; namely, communication science with particular emphasis upon extension methods of diffusing innovative income-generating ideas and practices within the ~~small-farmer sector~~. Thus, the resulting strategy for accelerating rural development, which is proposed later in the present paper, is heavily orientated towards finding extension-based remedies. The data are, however, currently being analysed from other perspectives by IDS researchers with other specialities.*

We were guided in our selection of likely income-affecting research variables or factors by the vast work already done in other parts of the world in the area of diffusing innovations. In addition, we selected only those factors such as extension contact and media exposure ~~promising~~ pay-off because they were imminently manipulable. This pragmatism eschewed the selection of such academically interesting, but practically unrewarding factors as ethnic value systems, empathy, traditionalism, need achievement and status inversion so dear to the hearts of social psychologists. Given government co-operation, the methods and structure of the extension services could be easily changed virtually overnight. But how long does it take to invert statuses or change value systems?

In keeping with our earlier paradigm (Figure I), the IDS research team is undertaking a three part study in Tetu Division. The first part which is already completed, is the baseline or fact finding survey to identify possible bottlenecks ~~impeding~~ the achievement of raised and ever-increasing rural incomes. Part two of the research, which is to be proposed in the present paper, is dedicated to trying out, on a small scale in a pilot area, a strategy for removing these bottlenecks. It should be clear at this point that the IDS team seeks to go beyond the point at which most researchers stop. It has every intention of involving

* See, *inter alia*, Milan Bodi, "Improving Rural Welfare; the Case for Farm Management," WSIRW paper, IDS, University of Nairobi, 1971; G.D. Gwyer and G. Ruigu, "Some Preliminary Findings on the Agricultural Employment Situation in Selected Areas," WSIRW Paper, 1971; J. Kariuki "Informal leadership and Rural Development," IDS paper in process; F. Chege, "Packaging and Marketing of Rural Supplies," IDS working paper No. 7, 1971; G. Ruigu, "Land Policy and the Small Scale Farmer," IDS working paper in process.

itself operationally, at least in the experimental stages, in the actual implementation of its recommendations. In the final phase, the effectiveness of the strategy in achieving the desired goals will be evaluated, hopefully by a team of independent researchers to avoid self-fulfilling ~~prophecy dangers~~ ~~prophecy dangers~~.

Baseline Research Findings

The Tetu baseline research ~~results~~^{*} pointed to the lopsided flow of income-generating ideas from government extension personnel mainly to the more progressive farmers as being a major bottleneck in the process of ~~detalating~~ broadly-based rural development. Table I presents a selection of data supporting this conclusion. From the data it may be observed that considerably more of the most progressive farmers than the laggardly farmers have been visited and reciprocated the visits of crop and livestock extension workers; that more of them have attended crop, livestock and farm planning demonstration; that more of them have had demonstration plots on their land or attended Farmer Training Centre courses; that more of them are members and office bearers of Co-operative Societies; that they have greater average farm sizes and paid seasonal labour forces; and that more of them have more than one parcel of land, thus probably accounting for their larger average farm sizes.

We have further data to show that the same pattern obtains for visits to and by community development workers, ~~health~~ visitors, ~~home~~ economics personnel and the administration staff.

Farmer Progressiveness and the Extension Services

The nature of the relationship between the extension services and the most progressive farmers is not clear. It cannot be absolutely determined from the data whether the extension personnel naturally gravitated towards already progressive farmers, or whether such farmers were made initially progressive by the extension personnel and that the romance between them has since crystallized to the point where it is difficult to break off the mutually-reinforcing interdependence. Since

*The full baseline results are contained in J.R. Ascroft et al, "The Tetu Extension Pilot Project: A special Rural Development Project Report," WSLRW paper, IDS, 1971.

Ascroft

Table 1: Progressiveness by Selected Factors of Production.

		PROGRESSIVENESS				TOTAL
		Most Prgsv	Upper Middle	Lower Middle	Lagg ards	
AGENT-INITIATED CONTACT	Crops	100%	96%	85%	41%	84%
	Livestock	93	77	63	22	68
CLIENT-INTTIATED CONTACT	Crops	81	65	56	17	58
	Livestock	88	64	50	14	57
DEMONSTRATIONS ATTENDED	Crops	92	76	76	37	70
	Livestock	91	72	61	32	67
	Farm Planning	30	9	0	0	10
DEMO PLOTS	Owners	13	3	0	0	4
FARMER TRAINING:	FTC Attended	48	26	13	5	24
COOP SOCIETY MEMBERSHIP	Member	91	76	61	35	70
	Office-bearer	9	2	1	0	3
FARM SIZE	Mean Acreage	9.7	6.7	4.2	2.6	6.0
FRAGMENTATION	2-plus Parcels	40%	24%	9%	4%	5%
PAID SEASONAL LABOUR	Mean No Hired	3.7	3.0	1.3	.3	2.2
FARM ENTERPRISES	Grade Cattle	93%	70%	49%	11%	60
	Coffee	72	68	30	0	45
	Hybrid Maize	63	32	22	0	31
	Pigs	57	35	21	0	30
	Local Cattle	22	28	25	22	25
	Macadamia	30	31	16	0	21
	Pyrethrum	22	13	10	0	12
	Tea	22	12	3	0	10
Cert. Potatoes	9	2	1	0	3	
PERCENTAGING BASE:		92	97	102	63	354

it is known that the most progressive farmers were not always progressive, their progressiveness* having been calculated on the basis of innovations introduced during the past 30 years, our best estimate is that the latter of the above alternatives obtains.

Farm Size and the Extension Services

It is similarly not clear why more progressive farmers also have more separate parcels of land. At the completion of farm registration in 1962, a condition of one-man-one-piece of land existed in Tetu Division. Nine years later, refragmentation has apparently occurred. At this time, however, the fragmentation is associated with more rather than less progressive farmers. It may be that the forces producing this tendency to refragmentation is also associated with the relationship existing between more progressive farmers and the field extension staff. Perhaps the laggards, disenchanted with farming as an indirect result of being neglected by the extension staff, are selling out either in part or altogether, to their more fortunate fellow-men. Those who sell out in part are creating a problem of decreasing farm sizes which are growing too small to be economically viable. Those who are selling out altogether are swelling the numbers of the landless who inevitably gravitate toward the urban centres, there to aggravate already existing problems of squatter-settlements, slum development and urban unemployment. These early warning signals of future problems point to a need to increase the attractiveness of farming as a way of life for the less progressive farmers, thereby stemming and controlling the rate of urbanization to keep pace with the rate of urban industrial growth.

Production versus Producer Targets

The propensity for the extension workers to concentrate their efforts mainly upon more progressive farmers in the small farm sector is reinforced by the Governmental practice of setting production quotas as the target for extension efforts. Production targets emphasize the need to increase the output of, say, maize from X to Y number of bags per annum in a given area. The field agent is usually given no guidance as to how this increase is to be achieved. Who can blame him then, for choosing the line - of-least-resistance approach of persuading already converted

* See Appendix I for method by which farmer progressiveness was calculated.

progressive farmers to increase their hybrid maize acreages even to the extent of acquiring more land from others in the neighbourhood? The returns are quicker than if he chooses the more arduous and sometimes ~~thankless~~ route of persuading laggards to start growing hybrid maize.

The upshot, of course, is that the disparity between more and less progressive farmers is increased. Since poverty is a relative condition, the poor only being poor to the extent that others in their social system are rich, this practice of making the rich richer has the curious effect of making the poor feel contrastingly poorer, even though in absolute terms they are no worse off than they were. Even more insidious, raising the incomes of the rural elite produces a perception of increased "average" incomes and, with it, a feeling of ~~complacency~~ in government personnel for a job well done. The ~~cumulative~~ positive effects of extension over-emphasis 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 ever increasing opportunities to break out of the bonds of subsistence farming and move ~~toward~~ a cash economy. The cumulative negative effects of extension under-emphasis 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 towards extension personnel, and to provide them with sufficient motive to sell out and move to psychologically more hospitable areas elsewhere in Kenya.

Normally one would expect diffusion effects from more progressive to less progressive farmers. But these effects tend to be negated when it appears to the less progressive farmers that the progress being made by the more progressive farmers is largely a function of their high contact with extension personnel. By way of example, the practice of locating demonstration plots upon the farms of only the most progressive farmers fosters the feeling in less progressive farmers that whatever is being demonstrated is not really for them. If it were, then some of their numbers would surely have been selected for locating demonstration plots on their farms. These problems arising from setting production targets may be redressed by way of a subtle shift in emphasis regarding ~~Government's target-setting practice~~. Instead

of setting production targets, why not set producer targets? This change in emphasis has the salutary effect of forcing the field extension agent to pay attention to the less progressive farmers. He is told, in effect, to increase the number farmers producing hybrid maize from X number to Y number of producers, thereby reducing his reliance upon more progressive farmers and increasing his responsibility toward the laggards. However, this suggestion comes replete with a hidden pitfall: the average extension agent is lamentably ill-trained in communication skills of persuasion. This needs correction.

This solution may likely be unacceptable to the economist who tends to view the laggard as being too little promising of high economic pay-off. We are told that the country cannot wait for long term projects to mature. But the economists' view does not foresee and take account of the long term problems resulting from neglect of the subsistence farmer with an ever-decreasing land size. Therefore, a policy which redounds to the benefit of most people over time is perhaps preferable to one which admittedly benefits the national economy through benefiting a small elite portion of the farming population at the expense of the majority, but which also incurs great social costs of land resettlement, urban unemployment and slum development.

Inventory of Farm Enterprises

Setting people-targets implies a knowledge of the number of people already engaged in specific enterprises and a methodology for rapidly and reliably assessing increases and decreases in their numbers. The method may be found in the scientific techniques of sample surveying whereby a ~~small~~ representative cross-section of a population is so selected as to provide reliable estimates of the proportion of farmers engaged in various income-producing farm enterprises in the whole population from which the sample is drawn.

Such an inventory of farm enterprises was included in the Tetu survey (see Table I) and its utility is illustrated by the fact that before the survey, local extension personnel were of the belief that virtually all farmers in Tetu Division had adopted hybrid maize. The survey results showed that only 30 per cent of the Tetu farmers had indeed made the adoption.

The list of farm enterprises shown in Table I, namely, grade cattle, coffee, hybrid maize, pigs, macadamia nuts, pyrethrum, tea and certified potatoes, yields information which is of twofold use to us. Firstly, the frequency with each enterprise had been adopted by each level of farmer progressiveness points at problem areas where work can be usefully done, thus allowing us to plan per enterprises courses of action. Secondly, the list itself allows us to produce the progressiveness index for differentiating farmers by level of progressiveness (See Appendix 1). We have treated progressiveness as being synonymous with innovativeness which Rogers (1970, p.20)^{*} defines as "...the degree to which an individual is relatively earlier in adopting new ideas than other members of his social system."

Basically, we determined the number of years that each of the sampled farmers had been farming each of those enterprises he had adopted, summed up those years, and so produced each farmer's progressiveness score. We then divided all the farmers into four more or less homogenous groups such that the farmers in one group had very similar characteristics to each other, but very different characteristics from farmers in any of the other groups. Naturally, therefore, the more progressive the farmer, the more likely he is to have adopted one or more cash producing enterprises.

Main Baseline Conclusions

It may be concluded from the results of the Tetu baseline survey that (1) farm income is not evenly distributed in the Division, some farmers having considerably more cash-producing enterprises than others; (2) land in the division is not equitably distributed, some farmers having considerably less of it, either by accident or design, than others; and (3) the extension services to farmers are lopsidedly distributed so that the more progressive farmers enjoy considerably more extension attention than the others.

Suppose now we had it in our power to alter by legislation any one of these three conditions towards achieving parity of distribution, which of them could we feasibly manipulate without producing a thunderstorm?

* E.M. Rogers, Diffusion of Innovations, The Free Press, New York, 1962.

officials and institutions without apparent necessary increases of staff and financial resources.

Setting up the Farmer Classification Scheme

Given criteria for classifying people according to their level of progressiveness, (see Appendix I) one needs to classify each and every farmer in the selected area to enable the selection of a within-level group of participants for an FTC course based on a curriculum appropriate to the selected level of farmers. Classifying every rural household may appear a formidable task. However, the criteria developed so far take only about ten minutes to apply. In Kisii, two Junior and two Agricultural Assistants (J.A.As, A.As.) took one month to classify 1,881 farmers. This is a conservative estimate. There was no land register to ease finding people, and much time was consumed in establishing the routine. Where there is a land register, as in Nyeri, the process ~~is considerably~~ more rapid.

Once each farmer has been classified, a central registry can be set up. That is, the level of progressiveness of each farmer is recorded in a register which is updated from time to time. Such a central registry allows easy and systematic selection of participants for any given course. Progress of rural households from one level to another is also recorded in the register. Thus, one only needs to classify rural farmers once. After that, district heads will have at their disposal an up to date record of progress of people in their District, allowing them to plan, execute and evaluate development services. In addition, staff performance can be more objectively evaluated by monitoring the progress from level to level of those farmers assigned to a particular field staff member.

For the initial pretest of the proposed system, farmers, classified during the baseline survey in Tetu, will be used. After the pretest, a full scale experiment involving the rural wamachi in Nyeri District will be implemented. For this pilot project every farmer will need to be classified.

Setting up the Selection Procedure

Given a classification registry of all rural households, procedures must be set up for selecting participants for any given course. With a central registry, selection of a certain number of farmers per

outcry? The answer appears to be fairly clear that the least dislocating choice is the redistribution of extension services so that their impact is more equitably felt by the broad mass of rural people.

There is a further good reason for making this choice. In a country of relatively low functional literacy and few other communication alternatives in the rural areas for receiving income-generating ideas, the extension agent stands out as the principal means by which these ideas are introduced to rural farmers. Indeed, remove the extension field worker and the whole process of rural development is likely to come to a grinding halt. Thus, redistributing the extension effort more justly, increasing extension technical skills especially in the area of identifying viable enterprises for very small acreage farms, and training extension personnel to "...communicate to influence - to effect with intent" (Barlo, p.12 1960)* is likely to produce the broad-front raising of incomes so desperately needed in the rural sector. Producing a strategy directed at achieving these ends is the subject of the section which follows.

THE TETU EXTENSION STRATEGY

In the light of the Tetu baseline survey, we offer the following strategies for removing those bottlenecks associated with current extension practice: (1) Farmers are classified into different levels, according to criteria which reflect individual progress on a scale from traditional subsistence farming to modern surplus farming; (2) Participants for courses at the Wambugu Farmers' Training Centre (FTC) are selected from within the same level, so as to ensure homogeneity in knowledge and skills; (3) Participants attending the FTC course are motivated and trained to use new ideas and techniques provided in a curriculum developed specifically to suit each level, so that the material taught aims at the needs and abilities of people at each level. Basically, farmers progress from one level to the next, not unlike school pupils progressing from one standard to the next; (4) Upon completion of the FTC course, the participants, armed with free trial samples of supplies will be visited in their farms by Government field workers, who will follow up on the work done by the FTC, providing additional motivation, information, demonstration and supplies.

Figure 2 gives the strategy that will be tested. The strategy can itself be applied and replicated at the District level by local

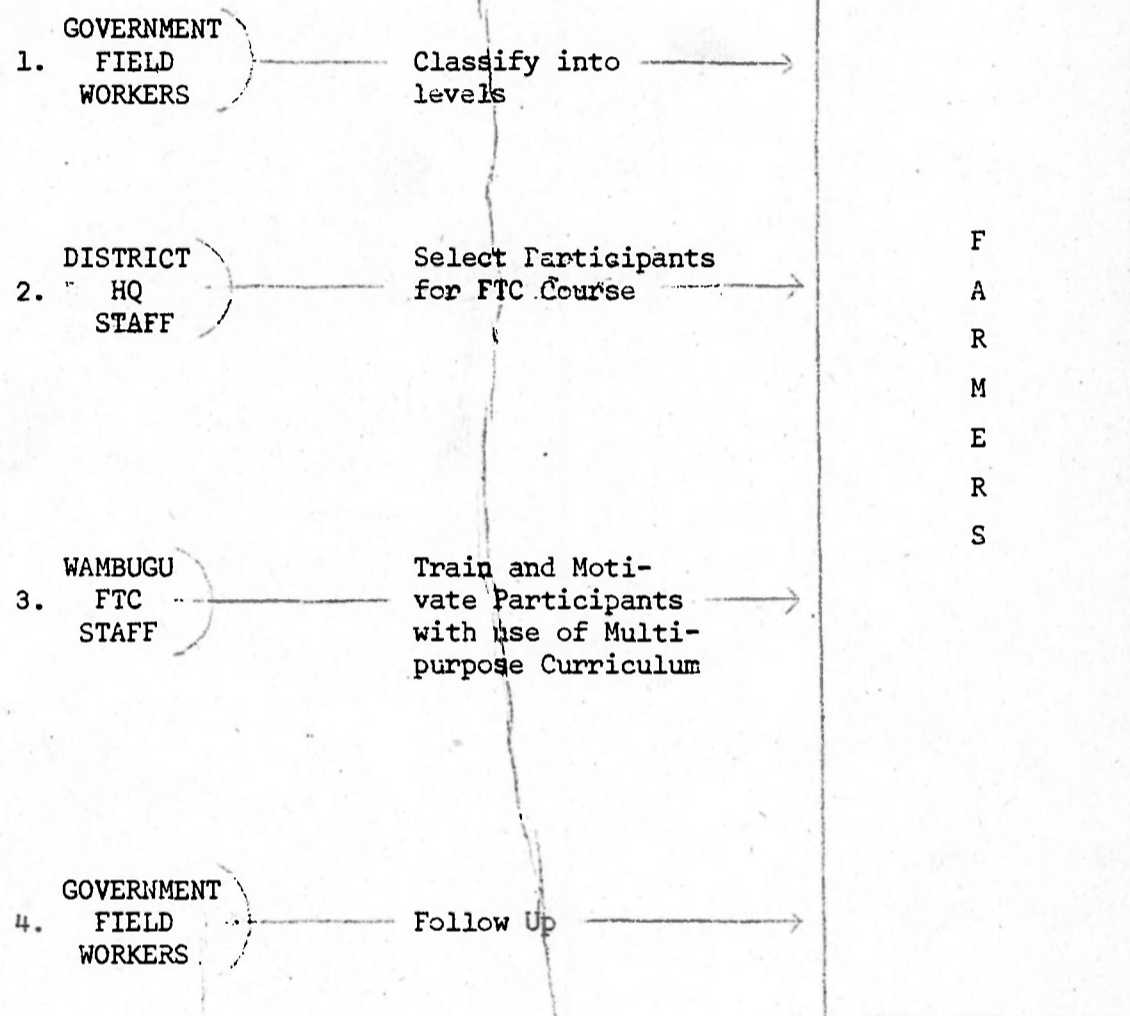


Figure 2: Overview of Strategy for Accelerating the Flow of New Ideas and Practices to Rural People.

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sublocation by junior field workers, district heads can now select a set of names in a systematic fashion and pass on the list to the junior staff, who then contact those on the list, and not only those whom they know or can easily reach as happens at present. At the completion of each course, the same list is handed back to the field staff for purposes of follow-up. The criterion for selecting farmers for FTC training is that participants will be drawn from the same level of progressiveness.

This procedure allows for much flexibility in the selection of farmers for initial FTC training. Farmers from one common geographic area could be selected. Alternatively, small clusters of farmers scattered over a wide geographic area could be selected to form mutually reinforcing nuclei. Another possibility is to select leaders or centrally located farmers to maximize demonstration and diffusion effects.

At present, three quarters of the participants that attend FTC courses belong to the most progressive half of the farmers, (See Table I). Only about one quarter of the total population of farmers in Tetu, for instance, ever attended an FTC course. Thus, the less progressive farmers, i.e., those who could benefit most from training, do not get selected. The selection procedure proposed will allow for a more systematic and equitable selection of those so far left out without at the same time ignoring the more progressive farmers.

One final point regarding a more equitable selection must be raised. Will less progressive farmers be willing to participate in FTC courses and pay the fee of shs. 15/-? In the proposed project, incentives will be offered to farmers. First, a sliding scale of fees seems possible: laggards pay no fees and very progressive farmers in fact subsidize them. Second, free samples of fertilizer, seed and pesticide for small scale trials will be offered to make attending FTC courses more attractive.

Setting up the Curricula

The proposal suggests that FTC curricula be developed in such a way that they are tailored specifically to the needs and capacities of rural people at each level of development. Such curricula allow FTC

training to build on existing knowledge and skills, thereby avoiding the presentation of material that is too far removed from farmers in a particular level of progressiveness.

Apart from reaching too small a number of rural people, present FTC courses have a number of other shortcomings. In the first place, participants of courses are often too heterogeneous in terms of either interest or knowledge to benefit equally from a course. Those who attend find themselves in mixed groups, so that some are bored by too elementary a course, others because it is too complex and sophisticated for their present level of understanding, resulting in frustration for both, loss of motivation to attend and loss of confidence in the Government's ability to understand farmer problems. The influence of these disappointed people on others is likely to be negative so far as the attractiveness of FTC training is concerned. Ideally, ex-participants should be ambassadors of good-will for the FTC.

In the second place, FTC courses normally deal with one topic at a time, such as a course for coffee growers, only or a course for nutritionists only. Such topics are taught without subdivision according to level of difficulty, which is comparable to teaching the same mathematics course to a class composed of students drawn from standards I, II, III and IV.

Dealing with one topic at a time makes it difficult for farmers to obtain a comprehensive understanding during the visit of the possibilities and alternatives open to them. To get this comprehensive overview, farmers must necessarily return to the FTC several times, thereby entailing long and tedious absences from their shambas. In practice, only a few people actually get a chance to visit more than one FTC course. Thus information is presently offered in bits, such that subjects like nutrition, health, and welfare, which are closely tied to farming, are often taught in isolation of each other.

The proposed pilot project avoids many of these shortcomings by (1) ensuring greater homogeneity of the groups that attend an FTC course; (2) developing curricula for each group suited to the existing level of skills and knowledge at each level of progressiveness; and

(3) ~~creating~~, over time, multipurpose^s curricula by collating the various information inputs to rural people emanating from each Ministry of Government.

Our initial thrust, though, will be to develop and stratify according to level of difficulty the agricultural sector of the curriculum. Only when this curriculum has become functional will we attempt to expand it to a multipurpose curriculum. To this end, we already have available to us a "Crop and Livestock Manual 1971/72" prepared by the Ministry of Agriculture. This manual will form the basis for curriculum development. In addition, research is well underway to gather material for the development of a functional course in farm planning and management techniques suitable for the small-scale farmer.*

Setting up the Training Programme

Given curricula; training schedules will need to be developed. At this time, it is impossible to say how often farmers will need to visit the FTC and for how long a period. The present capacity at the Wambugu FTC is 130. Initial plans envisage the training of 130 farmers for periods of one week. As many as 5,000 farmers, therefore, could conceivably pass through Wambugu per year. This is a conservative estimate since it does not include the considerable diffusion impact that these 5,000 farmers could have upon non-participants.

Training FTC Instructors

Any person extending technical knowledge and skills to others needs two types of know-how:-

- (a) technical know-how in such areas as animal husbandry, baby care, fertilizer use, and so on; and
- (b) people know-how of which treats of the ability to extend knowledge and to influence others to accept and apply the knowledge.

Technical know-how Retraining of FTC Staff: Most extension services emphasize ~~training~~ training technical know-how but not in people know-how in training their staff. One can assume that most FTC teachers are

* See Nilam Bedi, "Improving Rural Welfare; The Case for Farm Management," WSIRW paper, Institute for Development Studies, University of Nairobi, 1971.

adequately trained technically. (This is not the case with field staff. The Ministry of Agriculture is presently in the process of large scale retraining especially of JAA's on matters of technical know-how). Even if FTC teachers have sufficient expertise in their field, considerable retraining in the use of the proposed new curricula which are to be developed will be necessary. The curricula will, in effect, consist of a repacking of the known technical material, while terminology and examples used in each curriculum will need to be adapted to the level of participants being taught.

Once the FTC staff have been trained in the use of the proposed new curricula, it is presently intended to let them practice in using the curricula on the field staff. This will allow FTC staff to gain experience in the use of curricula, give the field staff an opportunity to get to know the material on which they are to do follow-ups, and allow the field staff to participate in the final development of the curricula by contributing their knowledge of farmers and field conditions.

People Know-how Retraining of FTC Staff: Considerable training of FTC teachers will be necessary in the area of people know-how, i.e. in the ability to transfer knowledge and motivate people to apply it - in effect, to be competent salesmen of new ideas and practices. Thus, FTC teachers need training in communication and persuasion. To illustrate this point, let us use an example from the commercial world. The work-force of the automobile industry may be divided into three distinct groups: (1) the factory group, with the technical manufacturing skills to produce cars; (2) the salesmen group with people know-how skills to motivate the public to buy the cars; and (3) the mechanic group with technical applicative skills to maintain the cars. Each group specializes in its own field. Salesmen are rarely, if ever, called upon to manufacture or repair cars. Indeed his knowledge in these areas is very limited. Similarly, the manufacturing and mechanic groups are rarely, if ever, called upon to sell cars because their knowledge of salesmanship is equally limited.

In agriculture, the research station developing, say, hybrid maize corresponds to the automobile factory and the extension field worker corresponds to the motor mechanic. That leaves the FTC staff cast in the role of salesmen. Yet few of them, if any, have received any systematic training in "salesmanship." Indeed, most of them are

"mechanics" filling in for the salesman because he does not yet. Thus, it is not uncommon to hear FTC staff selling new ideas by expounding upon the technical characteristics of the idea rather than selling a farmer-need which the new idea is likely to satisfy. To use an old salesman adage, do not sell the customer the drill; sell him a hole that needs to be drilled.

	MANUFACTURING	SALES	MAINTENANCE
Type of Knowledge	Technical Know-how (Inventive)	People Know-how (Persuasive)	Technical Know-how (Applicative)
Automobile Industry	Factory	Salesman	Mechanic
Agricultural Industry	Experimental station	FTC	Extension Staff

Figure 3: Comparison of functions of the Automobile and Agricultural Industries.

Of course, there are differences between salesmen and rural extension workers. The latter's success depends more on the trust and credit he builds up in his community of work than is the case with the former. While the extension worker aims at the welfare of rural people, the salesman aims at the welfare of his employers. Therefore, extension workers must truthfully impart knowledge about the advantages and the disadvantages, including the risks involved, concerning a particular new technique or seed variety which they are trying to persuade farmers to adopt. There are, nevertheless, enough similarities between a salesman and an extension worker, for the former to profitably borrow a leaf from the book of the latter.

In the pilot project, the training in communication and persuasive skills will be carried out by IDS staff, who share among them considerable experience in giving such training. Of course, the IDS researchers cannot replicate their effort in all Kenyan FTC's. Therefore, they intend to train trainers in communication and persuasive skills so that, in the replication in all FTC's can be carried out by Kenyans with the IDS role perhaps reduced to an advisory one.

Setting up the Follow-up Procedure

Given FTC Instructors trained in technical and people-know how, the proposal calls for them to conduct week-long training and motivation sessions with farmers selected from a common level of progressiveness, whereupon these newly trained and motivated farmers return to their shambas. This point, the field extension agent takes over, providing follow-up services specifically tailored to course of instruction just completed at the FTC. This follow-up therefore presupposes that the field extension agent knows intimately what the course of instruction consisted of. To this end, all field level agents will be required to undergo the same course that their clients will eventually take. This not only serves to refresh field work knowledge, but also allows the FTC instructors to practise their newly acquired communication skills.

Ranking Field Extension Workers

Very little is known about the work and characteristics of the extension field worker. Basic information such as age, educational qualification, experience, location, and so on for staff currently working in the field is not readily available in quantified form, and even less is known about his productivity. No objective measure of a field worker's effectiveness exists. Promotion is currently based on (a) seniority, (b) paper qualification and (c) his supervisor's recommendation. So subjective and lacking in clear-cut rationale is the application of these criteria that much room exists for unfair, nepotistic, morale-reducing promotion practices to occur. The fact that there is no direct link between a worker's productivity in the field and the rewards he gets means that workers are not motivated to optimize their productivity, but to engage, instead, in activities calculated to promote their own self-interest by writing monthly and other reports which are questionable both in terms of their usefulness and reliability. Thus there is a clear need for developing a measure of the productivity of the field worker, which could be easily applicable in the field.

To this end, we plan to carry out baseline research comparable to the one already carried out for farmers, to determine the present condition of the field level workers, particularly with respect to identifying

the characteristics and extension techniques of the more successful
ve the less successful workers. The development of a measure of
productivity will allow classifying the field workers into levels
matching those already developed for farmers. It will then, be possible
to let less sophisticated field workers concentrate on the simpler and
more elementary agricultural techniques if, as is the case with many old
and ill-educated field workers, it turns out that they are ineducable
beyond the simple and elementary. Thus, increasing our knowledge of
characteristics and activities that are associated with field worker
productivity will allow a more purposeful and effective training programme
for field workers to be developed.

However, the baseline survey of field agent characteristics
has yet to be carried out. Thus, the initial stages of the Tetu project
will be conducted without benefit of this information. Nevertheless,
it should be borne in mind that a likely objective measure of a field
worker's effectiveness and work output is likely to be the progress rural
people have made which can be measured when the rural people return to
the FTC for their next level of training. The effective field worker
is the one who is more successful in getting his clients to actually
adopt the new ideas and practices recommended in an earlier FTC course.

Providing Free Trial Supplies

When extending new techniques, such as hybrid maize, to rural
people, it is not enough to just extend words. In fact, it becomes
frustrating for people to be told about new techniques without providing
the supplies necessary for implementing them even on a small trial basis.

There are two issues concerning supplies; (1) The provisions
of small-scale trial samples; and (2) Widespread marketing of small-
package supplies deep in the rural areas.

Small-Scale Trial Samples

Farmers attending FTC courses, especially for the first level
curriculum, will be provided with small quantities of seed, fertilizer
and pesticide in order to allow them to experiment with them on a small
piece of their land. It generally happens that whenever one adopts a new
technology, it is rare that one is able to apply it correctly at the first
try. There will always be errors of judgment, lack of resources,
uncertainty, and

try. There will always be errors of judgement, misinterpreted instructions, uncertainty, and the multifarious unfamiliarities associated with conversion from one style of farming to another. It is unfair, therefore, to ask a farmer to convert his whole shamba to hybrid maize from the word go, for the risk of first-time failure is too great. If you don't let the farmer try out new techniques on a small risk-free scale, then he will end off by trying out these techniques on a large risky scale, and probably fail on a large scale. Small trial plots are also useful because they are more easily supervised by extension personnel who does not have to traverse acres of land to check the progress of his clients.

Providing Local Marketing of Supplies

The present situation regarding the packaging and marketing of supplies to small-scale farmers appears to be unsatisfactory. Supplies such as fertilizers, insecticides and new-seed varieties, are largely available in packages which are too big for the needs and purchasing capacities of the small-holder farmers. Secondly, these supplies are labelled with complex and technical terms which do not communicate much to the intended users. Thirdly, these supplies are not available deep in the rural areas and farmers in need of the supplies have to travel many miles to main towns for them. This escalates the cost of the inputs and thereby lowers the profit margin that farmers could expect from the use of these farm inputs.

The IDS Research team is currently conducting research on repackaging, relabelling and marking of farm inputs in Tetu Division to ameliorate the above conditions.*

EVALUATION OF THE STRATEGY

The success of the strategy will be measured by the degree to which rural people want to, know how to, and do become more progressive according to the same criteria used for the original classification. In short, the main measure of effect will be the changes in Knowledge, Attitudes and Practice regarding adoption of income-generating practices, as observed among rural people who have been to FTC courses, and received field worker follow up.

* See Fred E. Chege, "Packaging and Marketing of Agricultural Inputs to Small-Scale Farmers," Working Paper No. 7, IDS, University of Nairobi, 1971.

For a detailed discussion of the proposed evaluation procedures, see Appendix 2.

CONCLUSIONS

A fundamental objective of rural development strategy is to secure a just distribution of the national income both between different sectors and areas and between individuals. That is, not only should it be policy to seek methods of raising incomes of rural people, but it should equally be policy to seek those methods which allow incomes to be equitably distributed across all sectors and individuals in the rural area. IDS research has revealed an important bottleneck towards realizing these twin objectives. It transpires that government extension personnel and other field workers charged with the duty of communicating income-generating ideas to farm people are concentrating their efforts almost entirely upon farmers who are already the most progressive in the rural areas. Thus, incomes are being raised but only for that small-holder farm population which already have high incomes, thereby doing violence to the equitable distribution principle. This finding produces the basis for formulating an interim objective of equitably distributing the extension services of government to all sectors and individuals in the rural area, thereby promoting rural incomes justly distributed between sectors, areas and individuals. The present paper has proposed a viable strategy for the attainment of this interim objective.

APPENDIX 1

THE FARMER CLASSIFICATION INDEX

There is a substantial body of literature deriving from an area of inquiry which has come to be known throughout the world as the Diffusion Of Innovations. Much of this literature (over 1,000 empirical studies conducted in over 50 countries of the world) is currently housed in the Diffusion Document Center, Michigan State University, East Lansing, Michigan, USA. Based upon this wealth of literature, a standard definition of the concept "innovativeness" has been developed. Thus, "innovativeness" is defined as "the degree to which an individual is relatively earlier in adopting new ideas than other members of his social system" (Rogers, 1962) and "An innovation is an idea perceived as new by the individual" (Rogers, 1962). We have taken the liberty of substituting the term "progressiveness" for "innovativeness" since "progressiveness" appears to be already in general usage in Kenya, synonymous to the way that innovativeness is used in the Diffusion literature.

Thus, in operational terms, a farmer's score on a progressiveness index is determined by the degree to which he has been relatively earlier than other members of his social system in adopting innovative cash-producing enterprises which are recommended by government. In Tetu Division, the extension services have through the years

promoted eight major innovations, namely, coffee, tea, pyrethrum, hybrid maize, certified potatoes, macadamia nuts, grade cattle and pigs. The principle reason for conducting the Tetu Baseline Survey was to gather information which would permit the construction of a progressiveness index for purposes of rank-ordering a small sample (354 out of 12,500 farmers in Tetu) on a continuum ranging from most to least progressive. The manner in which each sampled farmer's progressiveness score was computed is as follows:

- (a) Find out which of the eight recommended crop and animal husbandry enterprises being currently promoted by the extension services in Tetu Division have been adopted by each of the sampled farmers.
- (b) For each farmer, determine the precise year in which each of the adopted innovation was first used on his land.
- (c) Subtract each of these years from the present year.
- (d) Add one year to each of the differences in order to give those farmers who have adopted a particular innovation during the present year at least a score of one, thereby distinguishing him from those farmers who have not yet adopted that innovation.
- (e) Add up all the scores so derived for each adopted innovation to form a single total score.

This final total score is the individual farmer's progressiveness score: the higher this score, the relatively earlier the farmer is than other farmers in his social system to adopt recommended practices and consequently, the more progressive that farmer is.

We used the index thus obtained to classify the farmers in the Tetu sample in four categories: most

progressive, upper middle, lower middle, and laggards. The procedure for achieving this classification consisted of rank-ordering all 354 farmers in the sample ranging from the farmer with the highest progressiveness score down to the farmer with the lowest. This list was then divided into four parts based on the principle of minimizing the variance within each group and maximizing the variance between groups. In the Tetu sample, the most progressive farmer had a total score of 74, and the least progressive farmer, a total score of zero, meaning that he had failed to adopt a single one of the eight recommended practices. There were 63 farmers in the sample who had a total score of zero: these were called the laggards. A further 102 farmers had a total score falling between one and nine: these were termed the lower middle progressives. Forming the upper middle progressive group were 97 farmers with total scores falling between 10 and 19. The most progressive group comprising 92 farmers had total scores ranging from 20 to 74. We classified the farmers in the Tetu sample into four categories mainly because of our desire to have two comparative shades of "progressiveness" above the middle, and two comparative shades of "backwardness" below the middle. However, this categorization is essentially arbitrary. We could just as well have divided the Tetu sample into three, five or any other number of groups had we so desired. Since the sample of farmers from which the progressiveness index was computed is a random sample and, therefore, representative of all the farmers

of Tetu Division, the method used for classifying farmers into the four groups in the sample may now be extended to all the farmers in the Division. That is, it now becomes feasible for any extension agent with a modicum of arithmetic dexterity (simple addition) to classify all the other Tetu farmers who were not initially drawn into the original sample into one of the four groups established via the sample. The agent merely follows steps (a) through (e) that were originally followed by ourselves in establishing the progressiveness index for the sample farmers. Having thus determined an individual farmer's total progressiveness score, the extension agent now compares this score with the cut-off points determined during the classification of the sampled farmers to find out to which of the four groups the particular farmer belongs.

It must be cautioned that only farmers from Tetu Division can be classified according to the scheme determined via the original Tetu Division sample of farmers. In order to classify farmers of another division, a new sample of farmers representative of that other division will have to be drawn in order to determine a new index of progressiveness and new cut-off points for classifying farmers into the four groups. That is, all the procedures used in Tetu Division will have to be replicated in each other division in which farmer classification is desired. This is so because different sets of innovations may be required in different divisions, and the farmers of one division may, on the average, be relatively earlier or

later than the farmer of another division to adopt innovations. However, replicating the classification in another division is a considerably less effortful exercise than it was in Tetu because the procedures have now been clearly established and only the questions relating to earliness of adoption of innovations need be asked, not the whole 30 minute questionnaire originally administered to the Tetu farmers.

The Tetu progressiveness index which is described is the most useful of several versions which were originally attempted. Other forms of indices we constructed included the development of a Guttman scale based on grade cattle practices, an adoption index based only on number of innovations adopted rather than on earliness of adoption, and separate indices for crops and for livestock. Each of these trial indices were interrelated with each other. The highest intercorrelations were achieved between each trial index and the earliness of adoption index, (correlation coefficients ranging between .63 and .82, all other coefficients being below .60). Each trial index was then cross-tabulated against the independent variables of the study such as extension contact, formal participation and mass media exposure. Once again, the earliness of adoption index proved to have the highest discriminatory power of all. Thus, the earliness of adoption index appeared to subsume all the other trial indices and was, therefore, selected as the most useful index for our purposes.

The fact that the index "works" so well refutes some of the criticisms which could be levelled against it:

- (1) The index has automatic weighing built into it. Innovations that were promoted early, such as coffee and tea, are likely to make greater contributions to an individual's total score than innovations such as hybrid maize and macadamia nuts which were only recently introduced.
- (2) The index does not take into account the size of the enterprise. Thus a farmer who has one acre of tea which he adopted in 1964 gets the same score as a farmer who has two acres which he also adopted in 1964.
- (3) All the new ideas and practices get equal weighting. Whether one adopted hybrid maize, coffee or grade cattle does not make a difference.

The proved usefulness of the index does, as said, refute some of the mentioned criticisms. But then, it should be remembered that the usefulness mentioned refers to the sample. As a group, the laggards, for instance, whom we identified with the index, do lack extension contact, mass media exposure, wealth, education, and so on. However, it is well possible that individuals were misclassified. It is quite possible, for instance, that we classified a young man, who has only last year started with a highly specialized pig rearing farm worth 10,000 Shillings, into the "lower middle" category, while actual contact with him may soon show he is too progressive to be given "FTC training according to the lower middle curriculum". Since we will use the index for the classification of individuals for purposes of training, it will undoubtedly be necessary now and then to change an individual's classification. However, such potential problems await empirical answers.

which we are able to give without doing much damage.
After all, we will test our proposed strategy on a small
scale for the very purpose of getting empirical answers
without doing much damage.

development plan in it. The first type of "evaluation", though useful for other purposes, does not include measuring the impact of a project, but only the extent to which the project has been implemented; the second type of "evaluation" is subjective and can, therefore, not be a basis for replication, while the third type of "evaluation" does not allow ascribing specific changes to specific actions so that it also cannot function as a basis for recommending replication.

One stringent requirement for ascribing a certain desired or undesired change to a specific action is that one measures change in both: (1) an area in which one has taken the action (experimental group) and (2) an area in which one has not taken the action (the control group). To measure change reliably in both groups, one needs to either know the state of each group with regard to the characteristic one wants to change before applying a treatment in the experimental group, or, better, make sure that both groups were similar before treatment.

Since the Tetu pilot extension training project consists of a strategy to provide the application of new, productivity-generating techniques and practices among farmers, the degree to which farmers use such techniques and practices will be both the before and after measure used to evaluate the effect of the treatment. The baseline study provided the before measure and a survey carried out some time after the implementation of the treatment will

provide the after measure. Evaluation will then consist of calculating the difference (change score) between the After- (Time₃) and Before- (Time₁) measures in both the experimental and the control group. If the pilot project was successful in increasing the use of productivity-generating techniques and practices, the change score of the experimental group will be larger than that of the control group. The basic experimental design described above is illustrated in Figure i.

The design illustrated in Figure i is simplified in that it implies that the different activities such as FTC training, and Follow-up, which we proposed in the body of the paper, can be regarded as one strategy which we want to evaluate as a whole. Following that procedure would not, however, allow us to evaluate the separate impact of such treatments as FTC training, and Follow-up, as well as their combined impact. And we want to be able to evaluate the impact of such individual treatments. It is, for instance, quite possible that FTC-training alone has as much effect as FTC-training combined with Follow-up. Such a finding would allow us to make policy recommendations which are more specific and cheaper to implement than would be findings which only reflect the impact of the total treatment.

For these reasons, the evaluation design for the proposed pilot project will have to be more complicated than the one illustrated in Figure i. The basic treatments which will be evaluated are the following:

	Time 1: Baseline Before Measure	Time 2: Implement Strategy	Time 3: After Measure
Experimental Group	Yes	Yes	Yes
Control Group	Yes	No	Yes

↓
Exp. Group: After Measure - Before Measure = Experimental Change Score

Control Group: After Measure - Before Measure = Control Change Score

Hypothesis:

Experimental Change Score is larger than Control Change Score.

Figure 1: Basic Evaluation Design.

APPENDIX 2

EVALUATION*

In the main body of the paper, we have outlined the results of the diagnostic baseline research in terms of the bottlenecks to rural development which that research identified. We then proposed a strategy for removing those bottlenecks. In Appendix 2, we will briefly outline the next phase: the evaluation of the proposed strategy after it has been implemented on a small scale. Only if careful evaluation clearly shows that substantial benefits are to be gleaned from using the strategy, do grounds exist for recommending its replication in larger Kenya or areas thereof in which conditions, similar to those in Nyeri, obtain.

Evaluation, as used in this Appendix, refers to the systematic gathering of feedback in a controlled environment, so that one can ascribe desired or undesired changes in that environment to specific actions one has taken in it. Evaluation in this sense is thus quite different from (1) monitoring the progress of the implementation of specific projects, such as cattle dips, (2) global reporting on how things seem to be going in a rural area, or (3) comparing the measures of progress in an area taken before and after the implementation of a multi-faceted, integrated rural

*We are indebted to Dr. F.A. Schofield, Head of the Department of Community Medicine, University of Nairobi, for very helpful comments.

1. FTC TRAINING: In this treatment, participants for an FTC course are selected from the same level of advancement in the use of income and health generating practices. They are taught according to a multi-purpose curriculum, specifically developed to fit that level of advancement, by teachers, trained in the use of the curriculum and in "salesmanship."

2. FOLLOW UP: In this treatment, field workers, trained by FTC staff in the content of the curricula and in salesmanship, home-visit those rural people whose names appear on a list given to the field staff by their superiors. In case of one experimental group, the list will contain the names of ex-participants of a given FTC course. In case of another experimental group, the list will contain the names of a group of rural people who belong to the same level of advancement, and who will be given some extension input, such as regular visits of the extension worker.

3. SUPPLIES: In this treatment, FTC participants, or those visited in their homes by field workers, will receive small samples of supplies for trial purposes. Also, sublocations containing people who participate in the experiment will be provided with points of sale which will be kept well stocked with supplies which are packaged in small quantities.

Each of these treatments can be expected to have its own separate effect, if applied to a group in isolation, and two or three treatments applied together to one group

can be expected to have a combined effect. This combined effect can usually not be expected to be a simple addition of the effects of each of the treatments in isolation. The total effect is usually less or more than the sum of individual effects. One calls this "interaction."

Such interaction can be easily understood if one thinks of a treatment like leg amputation, which, let us say, consists of two sub-treatments: cutting off the leg and bandaging it. Cutting off the leg without bandaging it leaves the patient bleeding to death, while bandaging it leaves the patient bleeding to death, while bandaging the leg without cutting it off leaves the patient in the same shape as he was before. The interaction of the effects of the two sub-treatments, however, presumably allows the patient to recover.

In the evaluation of the pilot extension training project we very much want to account for some of the interaction effects that can be expected. The following 8 combinations of effects are possible:

- | | | | | |
|---------|-----|--------------------------|---|------------------|
| | (1) | FTC+Follow Up + Supplies | + | Unplanned Inputs |
| | (2) | FTC+ Supplies | + | Unplanned Inputs |
| | (3) | Follow Up + Supplies | + | Unplanned Inputs |
| | (4) | Supplies | + | Unplanned Inputs |
| | (5) | Follow Up + | | Unplanned Inputs |
| Control | (6) | | | Unplanned Inputs |
| | (7) | FTC+Follow Up + | | Unplanned Inputs |
| | (8) | FTC+ | | Unplanned Inputs |

Since motivating farmers to use fertilizers and other techniques, without providing them with inputs such

as fertilizers to enable them to apply the new techniques, is a strategy which cannot be replicated, we are not interested in combinations 5, 7 and 8. We are, however, interested in the effect of the provision of supplies as a strategy in itself, especially since the impression persists that inadequate provision of farm inputs is one of the major bottlenecks to rapid increases in agricultural productivity.

In short we want to test and compare the effects of the following combinations of treatments:*

Experimental Group:1	FTC + Follow Up + Supplies + Unpl.Inputs
Experimental Group:2	FTC + Supplies + Unpl.Inputs
Experimental Group:3	Follow Up + Supplies + Unpl.Inputs
Control Group 4	: Supplies + Unpl.Inputs
Control Group 5	: Unplanned Inputs

Combination 4 will be the control compared with which the effect of 1, 2, and 3 can be observed. Combination 5 will allow us to evaluate the effect of only providing supplies.

To test the effect of the different strategies and their combinations we need five different groups of farmers, as illustrated in Figure ii.

The members of the groups selected as experimental and control groups will not be selected from all over the division. Instead, members for each group will be recruited from one or more specific sublocations. This requirement is necessary for three reasons:

*We assume no interaction between the unplanned inputs and any of our treatments.

	Follow Up	No Follow Up
FTC + Supplies	Change Score 1	Change Score 2
Supplies alone	Change Score 3	Change Score 4
No Supplies		Change Score 5

Figure ii: The five groups necessary to evaluate the Pilot Extension Project.

- (1) the sublocation is the unit of work for the grass - roots extension workers who are responsible for follow up.
- (2) Sales points for supplies will be based in specific sublocations. Therefore farmers selected for control group 5 cannot come from such sublocations.
- (3) If we selected farmers for different treatments from the same sublocation, we could expect diffusion effects, in that farmers who have gone to the FTC would influence farmers who only get supplies, etc. Selecting farmers for each specific treatment exclusively from only one or few sublocations will, of course, force us to speak later of the impact of our treatment on sublocation(s) and not on individual farmers.

The pilot project will run over a period covering two rainy seasons. The first major intake of FTC participants is planned for the next long rains (1972).

A few final points must be made. First, the pilot project will cover rural people from each level of advancement on the progressiveness index. Thus the design given in Figure ii will have to be applied to each of the four levels for us to determine at which level which treatment was most effective and to be able to answer such questions as: How much progress can be made by concentrating on laggards as compared to farmers at other levels of progressiveness?

A second point which might be made is that the treatment which only calls for Follow up and Supplies (3) may cause difficulties. One cannot follow up what has not taken place. Therefore, the Follow up only treatment will consist of regular farm visits by extension workers to farmers who have been selected from a specific level of progressiveness. The topic dealt with by the extension worker during these visits will be determined by the level of the farmer.

A third and final point regards the evaluators. If we ourselves did the evaluation, our great hopes of having developed a useful strategy for rural development in Kenya might affect our objectivity, especially since we would know who would have had which treatment. Therefore, evaluation will have to be carried out by people who are unaware of which farmers had which treatment and also unaware of what the project was trying to accomplish. Outside evaluation will also be necessary to observe unforeseen consequences of the pilot project. For this purpose, we hope to obtain the services of qualified researchers unrelated to the team proposing the pilot project.