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TRENDS IN KENYA AGRICULTURE IN
RELATION TO EMPLOYMENT

By

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ABSTRACT

The objectives of this paper are to contribute to an understanding of the nature of the unemployment problem in Kenya through analysis of trends in agricultural employment in the various sub-sectors of agriculture, and secondly, on the basis of this analysis, to consider policy alternatives aimed at increasing job opportunities in agriculture.

The first section describes the major movements of people that have been occurring within agriculture, and emphasises the importance of education investment in explaining movements out of agriculture. Then the differential effects of farm technology on employment in small scale and estate agriculture are compared, and the effects of changing farm structure on employment in the large mixed farming areas examined. Lastly, policy possibilities are discussed.

1. I am grateful to Walter Elkan for helpful comments. This paper draws on previous writings of the author on this theme, including: "Agricultural Employment: A Research Proposal", IDS Staff Paper No. 93, March 1971; "The Agricultural Employment Situation in Selected Areas of Kenya" (with G. Ruigu) paper presented to the Workshop on Strategies for Improving Rural Welfare, IDS Occasional Paper No. 4, June 1971; "The Agricultural Labour Markets for Two Smallholder Areas of Kenya", IDS Staff Paper No. 94, October 1971; "A Framework for Analysing Employment Creation Alternatives in Kenya Agriculture", paper presented to the East African Social Sciences Conference, Makerere University, December 1971; "Agriculture and Unemployment", African Development, February 1972; "Employment in Kenyan Agriculture", A background report for the ILO Employment Mission, March 1972 (also presented at the East African Agricultural Economics Society Conference, Makerere University, June 1972; "Employment Opportunities in Kenyan Agriculture", East Africa Journal, March 1972; "Income and Employment Creating Farm Practices and Technology", ILO Employment Mission, April 1972; "Labour/Land Ratios in Small Scale Agriculture", paper presented at the East African Agricultural Economics Society Conference, June 1972; "Labour in Small Scale Agriculture: An Analysis of the 1970/71 Farm Enterprise Cost Survey Labour and Wage Data", IDS Working Paper No. 62, September 1972.

INTRODUCTION

The objectives of this paper are to contribute to an understanding of the nature of the unemployment problem in Kenya through analysis of trends in agricultural employment in the various sub-sectors of agriculture, and secondly, on the basis of this analysis, to consider policy alternatives aimed at increasing job opportunities in agriculture.

The first section describes the major movements of people that have been occurring within agriculture, and emphasises the importance of education investment in explaining movements out of agriculture. Then the differential effects of farm technology on employment in small scale and estate agriculture are compared, and the effects of changing farm structure on employment in the large mixed farming areas examined. Lastly, policy possibilities are discussed.

MOVEMENTS OF LABOUR WITHIN AGRICULTURE

Before Independence it was possible to make a clear distinction in Kenyan agriculture between large and small scale farming: a distinction corresponding closely to that between African owned and non-African owned farms. Within large scale agriculture, plantations could usefully be considered separately from large mixed farms. In the decade after Independence the distinction between large and small scale farming has become blurred by the conversion of many large mixed farms into settlement schemes, and the purchase of others by cooperatives, partnerships and limited companies (see Figure 1).

Prior to Independence the movement of people was largely restricted to movements of farm labour within agriculture. The main flows were short term movements between the traditional farming areas and estates for seasonal tasks like coffee picking, and longer term movements from the traditional farming areas for permanent employment in large farm and estate agriculture, like sisal production.

Since Independence the movements of people in search of work within agriculture have been supplemented by movements of people in search of land, attributable in part to land reform under the Million Acre scheme opening up formerly proscribed areas for settlement by Africans, and in part to increasing population pressure on the land in traditional farming areas not matched by fast enough rates of productivity increase.

Figure 1. The Sub-Sectors of Kenyan Agriculture: Pre- and Post-Independence.

Pre-Independence	peasant farming in the 'reserves'	large scale agriculture in the 'scheduled areas'			
		large mixed farms			plantations
Post-Independence	small-scale farming in the traditional areas	high- and low-density settlement schemes	large farms under cooperative, partnership and company ownership	large farms under individual ownership	

But new settlement has not been confined to the settlement schemes. With the breaking down of tribal barriers, people are opening up new areas for farming outside their tribal homelands on what is essentially high potential land (e.g. Kikuyu settlement in Mau-Narok and Kapenguria, Kamba settlement in Kwale) while others, *faute de mieux*, are moving into medium potential areas on the extensive margin of cultivation (e.g. drier parts of the Rift Valley, parts of Kitui). When crop failures occur because of drought such people are forced back into high potential areas for short term employment.²

Further labour flows now occurring, or which may be anticipated, result from the decline and growth of particular agricultural lines of production. The gradual run-down of the sisal industry has displaced some workers from estate production back into small scale agriculture farming on their own account. The magnitude of this flow has been reduced by attempts

2. "Drought and Famine in Kenya, Magnitude and Attempted Solutions", by P.M. Mbithi and B. Wisner, IDS Discussion Paper No. 144, p. 25, July 1972.

by sisal estates to diversify production, often into enterprises which are demanding of labour like horticultural crops, and in one major producing area, pineapples. In the drier areas diversification into ranching does not provide compensating job opportunities for displaced workers. More generally, the projected large investments in improved ranching, rather than increasing employment opportunities within agriculture, will probably necessitate the exodus of large numbers of pastoralists for whom small scale arable production in marginal areas will not be a satisfactory alternative.

Perhaps the most important type of movement of people in relation to the current unemployment problem is that of young people from the traditional farming areas into towns in search of jobs. One of the most striking trends in post Independence Kenya has been the continuing investment by parents, most of whom are farm based, in the education of their children.

Parents, teachers and students regard, and continue to regard, the educational certificate as a passport to the relatively highly paid job in town e.g. as bank clerks or shop assistants. But the number of high paying jobs in towns in relation to the number of job-seekers is such that a school graduate today has less than a one in ten chance of securing employment. This he finds out after one or two visits to urban centres - where his job search may be financed in part by relatives who give him accommodation - and returns disillusioned to his home rural area reluctant to adjust his income expectations downwards from shs.400 a month to shs.50, the marginal earnings of a regular worker in small scale agriculture. Such an individual is not available to agriculture as a full-time worker, although he may seek occasional jobs to help finance his next job search in towns.

In addition to the pull of the high paying urban job acting on young people, there is the push that comes from the threat of landlessness. In the past, land was in sufficient supply within the traditional farming areas that each son could start farming on his own account when he came of age. For most people this option is no longer open. Size of the family farm is so small that it does not seem able to provide employment for all the family members. Education offers the possibility of escape from landlessness.

The strength of the 'push effect' may be illustrated by reports from two contrasting parts of the countryside. In Kakamega the children are advised by their parents that their only source of livelihood is the education they are being equipped with since there is no more land to be inherited. In Meru, parents are reputed to say to their children "We have tilled this soil ever since time immemorial; we are as poor as ever. If you want to live as poor as we do then stay with us and enjoy our poverty".³

Education then helps to explain the oftnoted paradox of the unemployment problem in Kenya: that we observe in towns large numbers of people seeking work and in rural areas unemployed youth, and at the same time we learn of tea and pineapple estates short of hundreds, even thousands, of permanent workers, and small and large scale coffee producers searching for casual labour at harvest times. The explanation of this paradox is probably not shortage of market information about job opportunities, but rather that the supply curve of labour to agriculture has a marked positive slope. Put another way, solution of the unemployment problem entails rather more than the provision of work places in agriculture at existing rates of remuneration. Rates of pay need to come closer to those of urban jobs, which is only likely to occur if increases in labour productivity can be secured. Empirical support for this notion comes from the large numbers of people who in 1971 flocked to the Kamburu dam site on the upper Tana river in a desolate rural area devoid of amenities. Anticipated rates of pay of shs. 5.10 for an eight hour day drew hundreds of unemployed people from a wide area to wait for several weeks for the chance of a job. The supply schedule of this labour is probably well summarised by the comments of one of them:

"I like any work but I never get it. Small contracts cannot help me. A farmer at Mwea offered me shs. 30 a month with food and housing and I was very sorry. Shs. 3 per day plus food and housing is the minimum I can work for. The shambas here are very dry and not well cultivated: they can only help the dwellers, they can't employ people. Shs. 4 per day on the pineapple estate at Thika is not enough because there is no housing. Coffee harvesting only brings a shilling a debe and I can only pick two debes per day. There is not housing for the casual coffee workers. Sisal is very hard work although they pay shs. 3 per day with housing".⁴

3. The quotations are taken from essays on the unemployment problem written in December 1971 by second year undergraduates in the Faculty of Agriculture.

4. See Appendix A, Dam Construction with Unlimited Supplies of Labour, of "The Agricultural Labour Markets for Two Smallholder Areas of Kenya", op.cit.

With this background of movements of people within agriculture and some notions about the nature of the unemployment problem, we now consider what has been happening to the demand for labour in each of the three main sub-sectors of Kenya agriculture, with particular reference to farm technology and changing farm structure.

EMPLOYMENT IN SMALL SCALE AGRICULTURE

Programmes for the intensification of small scale agriculture predate Independence with the launching of the Swynnerton Plan, and have received added impetus since with the renewed emphasis on land registration and consolidation, the continued introduction of new cash enterprises (coffee, tea, pyrethrum, milk cows, passion fruit, macadamia nuts, hybrid maize) and most recently the Special Rural Development Programme which exemplifies in three areas alternative intensification strategies; intensive extension in Tetu, credit for hybrid maize in Vihiga, and the extension of cash enterprises (cotton, tobacco and bee-keeping) in Mbere.

The impact of crop intensification and land registration on the employment capacity of small-scale agriculture has not been documented, but Clayton quotes estimates for Nyeri District which suggests that by the mid-sixties, following consolidation, 10,000 new employment opportunities had been created to give an employment of 1,072 persons per 1,000 hectares.⁵

These programmes have been successful in increasing the employment capacity of small scale agriculture because they lead to an increasingly commercialised agriculture. This helps employment in three main ways. As farmers become better off they tend to withdraw into an entrepreneurial role and to employ others to help them on the farm. Second, cash crops like tea, coffee, pyrethrum and cotton generally have higher labour requirements per acre than food crops like maize and beans. Third, the purchase and application of material inputs by farmers not only raises crop output, but also increases labour demand. Crucial to the intensification of small farms is the adoption of hybrid maize because not only does this crop require more labour inputs than ordinary maize but through higher yields it offers the possibility of achieving a small farmer's subsistence needs on a reduced acreage. The greater the proportion of the farm area that can be allocated

5. "Agrarian Reform, Agricultural Planning and Employment in Kenya", E.S. Clayton, International Labour Review, 1970, p.440.

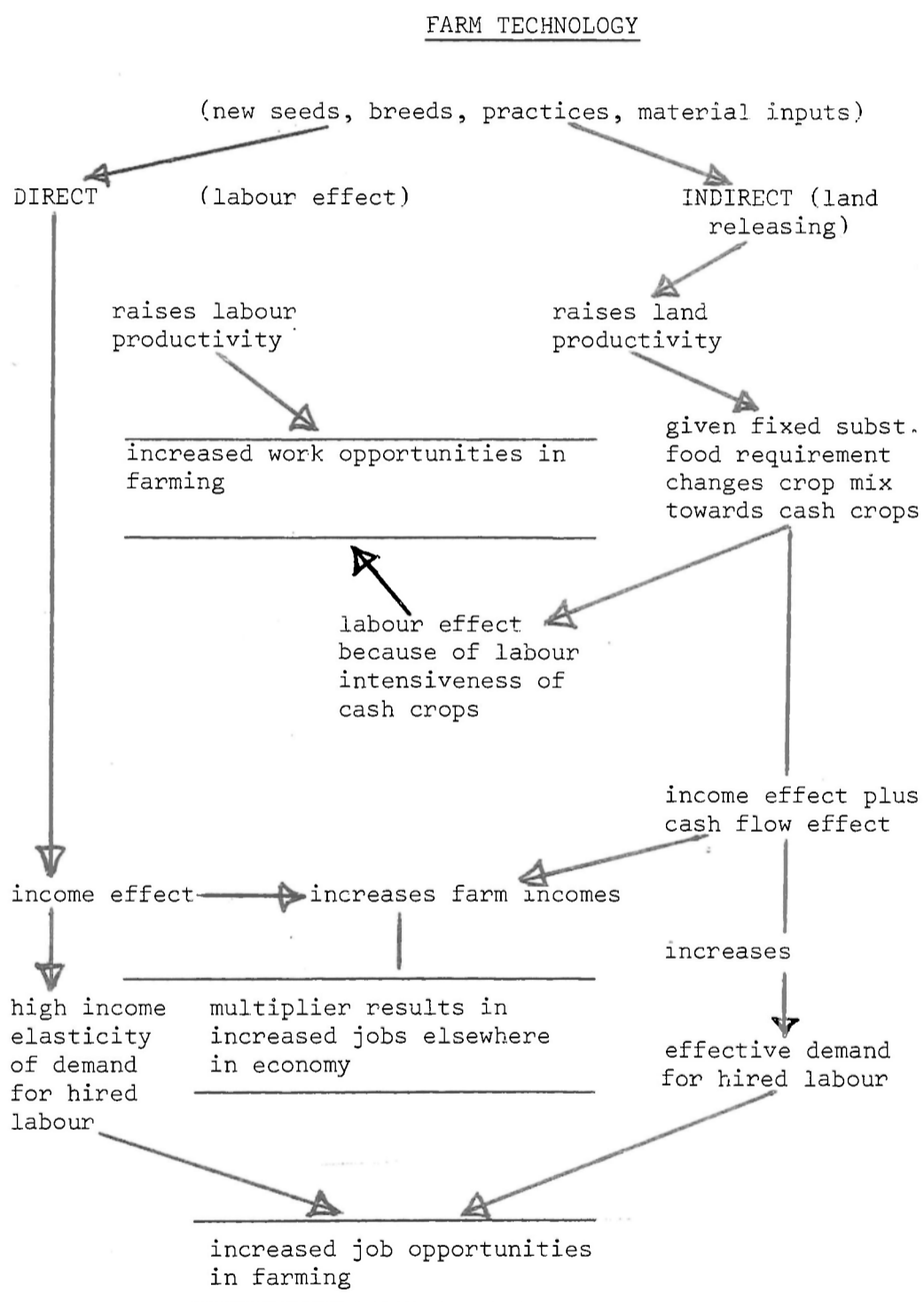
to non-food crops, the higher the employment capacity of small scale agriculture. Figure II attempts to illustrate the varying employment effects of technology on small farms.

The use of material inputs like fertilizer and insecticides through raising crop yields increases labour demand not only at harvest times, but raises the marginal productivity of labour in such operations as weeding. On many small farms, however, the use of material inputs appears to be constrained by shortage of cash at the time of application, since the many demands of the farm household especially for school fees have exhausted receipts from the previous season's crop. Cash shortage may also preclude the hiring of labour to meet seasonal peaks.

In broad terms we can distinguish two types of crop with respect to labour requirements: those with a fairly even pattern of labour requirement through the year, such as tea and livestock enterprises, and those which have marked seasonal peaks for labour at certain times of the year, like coffee and hybrid maize. For farms that grow crops with flat labour profiles, family labour is either sufficient to meet this requirement or it is not. If it is sufficient then these farms may not need to hire labour at any time of the year. If family labour is not sufficient then these farms may want hired labour to work full-time on the farm. Farms that grow cash crops with marked seasonal variation in labour requirements will either have sufficient family labour to meet these peaks, which may then be under-employed at other times of the year, or will not have sufficient labour to meet the peaks, in which case they will want to hire labour at these times on a casual basis.

In discussing demand we have indicated that some farms want to employ fulltime labour and others casual labour. We may note on the supply side of the market too a distinction between landless peoples who are looking for fulltime farm employment and those who are looking for casual work only. Landless optimists are likely to be one of many sons with at least primary school education who cherish the hope of obtaining a relatively high paying urban job. To this end they visit urban areas frequently, either once or twice a week if they live near a town, or for some weeks on end if they live far from an urban centre. From time to time they come home and needing pocket money in addition to what their father can afford to give them, they look for casual work on neighbouring farms. They are not interested in permanent farm jobs because this would cut them off from their main chance in towns. Landless realists, in contrast, are looking for full-time work on farms, either because their expectations about their earning

Figure II: THE EFFECTS OF FARM TECHNOLOGY ON EMPLOYMENT IN SMALL SCALE AGRICULTURE



potential have not been raised unrealistically by schooling, or because through hard experience they have come to terms with the job situation in urban areas and adjusted their income expectations downwards. If they cannot find fulltime work on large or small farms then they will settle for casual farm work.

Also in the market for casual work are the part-time family workers whose marginal product is positive on their own or their fathers' farms, but because of seasonality of demand from the particular crops grown at home, are sometimes looking for work at slack times on neighbouring farms with different crops.

We may thus distinguish two markets for labour in smallholder areas as shown in Figure III.

Figure III

	Fulltime labour market	Casual labour market
Buyers	Farms growing cash crops with flat labour profiles	farms growing cash crops with seasonal peaks
Sellers	landless realists	frustrated landless realists landless optimists part-time family workers

EMPLOYMENT IN PLANTATION AGRICULTURE

It is reasonable to assume that employment in small scale agriculture has kept pace with growth in output, but this has not been the case with employment in plantation agriculture. Over the period 1963 to 1969 there were marked reductions in the numbers of permanent workers employed by coffee and sisal estates, and a small increase in the number employed by tea estates. Tea production on estates has increased considerably over this period while sisal production has declined.

Coffee production on estates has now recovered its trend in output growth after the severe C.B.D. attacks in 1967 and 1968. However the costs of C.B.D. prevention together with declining farm gate prices because

of quota restrictions and the need to sell coffee in non-quota markets have placed many estates in a difficult liquidity position.

In broad terms the reason for the stagnation of employment on tea and coffee estates, while output has expanded, is that technologies have been adopted which are both labour saving and output increasing. One consequence is that wages have risen by about 50% in the last 10 years. For sisal estates, the rate of decline in labour employment has exceeded the rate of decline in output because many estates have ceased replanting while continuing to harvest existing stands of mature sisal. Wages in sisal production have remained constant over the last decade.

(a) Coffee

While the total number of workers, casual and permanent, on coffee estates has remained more or less constant in recent years, the composition of the labour force has changed so that casual workers are now numerically more important than permanent workers. There are two reasons for this change. First, the overall effect of new technology has been to increase labour requirements at harvest times while reducing labour requirements at cultivation times. Increased use of fertilizers, mulch, irrigation, fungicides and insecticides has raised yields and hence the demand for labour to harvest and process the crop. Concomitantly, the use of herbicides instead of hand hoeing, and the application of inputs, especially mulch, by mechanical means has reduced labour demand at non-harvest times (except for pruning). Second, successive wage increases for workers, and improvements in supplementary benefits for permanent workers granted by the Industrial Court, have induced estates to economise in their use of labour, by hiring seasonal labour, which living away from the estates costs about half as much to hire and which does not have to be paid in slack periods. An important consequence is that female labour is replacing male labour, because harvest labour is predominantly female and permanent labour is largely male.

(b) Tea

A similar trend in employment has been occurring in tea production. Here the major thrust of new technology has been in the mechanization of land clearing operations and in the adoption of herbicides, which have drastically reduced labour demand for weeding. The labour force required to weed one hundred hectares of tea in 1960 can now cover five hundred hectares, while the weeding costs have more than halved over the period. At the same time

new tea varieties, increased use of fertilizer, and a switch in plucking to two leaves and a bud have increased the demand for harvest labour. Unlike coffee, tea is harvested throughout the year so that changes in the composition of the labour force from permanent to seasonal workers have been less marked.

(c) Sisal

Employment on sisal estates has declined faster than the fall in sisal production. This is because the first effect of declining prices has been a reduction in the rate of new planting, which does not affect output for three years, but which has an immediate impact on employment because the maintenance of nurseries and replanting itself are both very labour intensive activities. New technology has generally had little effect on labour demand, because the higher yielding hybrid varieties have not been widely adopted, and the use of herbicides has not been as great as expected because estates seek to retain their harvest labour in wet seasons by giving them relatively easy work weeding.

EMPLOYMENT IN THE LARGE MIXED FARMING AREAS

As we noted at the beginning farm structure and organization in the large mixed farming areas have undergone considerable change in the years since Independence, so that it is important to distinguish the large mixed farms which remain under individual ownership from their derivatives: the settlement schemes, and farms under some form of collective ownership.

Labour-land ratios have always been low on large mixed farms, because of the scale economies they are able to realise which come from mechanization of arable crop production.

In addition to their traditional role as suppliers of food for the growing urban populations, the large mixed farms have been important in seed and stock breeding and multiplication. The large mixed farms under collective ownership have not always been successful in carrying on this role. In part this is because of shortage of working and investment capital which has resulted in a reduction in the areas under cultivation. In part it reflects management difficulties, especially of partnerships, where disagreement among the owners about liabilities and farm policy can result in an unwillingness to contribute labour to the large farm unit.

The typical pattern of take-over originates in a traditional small scale farming area where there is growing concern about land shortage

and one or two enterprising individuals start collecting money from their relatives and clan members to purchase a large farm. In earlier times, an individual might have moved to a settlement scheme, using his own funds, but the amounts needed for a large mixed farm require that many contribute. A crucial stage is reached at the time of land purchase because it is then that the form of ownership and subsequent farm organization is decided. The more common forms of ownership (and generally least successful) are ad hoc cooperatives and partnerships.

In the early stages of a partnership, only the registered partners are resident on the newly purchased farm but as time goes on there is a tendency for the hidden partners to establish their homes there too. This occurs when the hidden partners become concerned about what is happening to their money and come to live on the farm with a view to first, exercising at least informal control over farm decisions, and second getting some return from their investment by having a plot of land on the large farm. With a cooperatively owned farm the members are required to be resident on the farm from the beginning.

Under both types of ownership, once a farm has been purchased a farm manager is engaged and an executive committee appointed. The lot of the farm manager is a difficult one, for he is in the invidious position of having to encourage those who pay him his salary to offer their labour for work on the large farm. If they fail to do so and the farm makes a loss or fails to meet its liabilities he is likely to be held responsible. For this, managers receive modest salaries. The need for 'voluntary' labour inputs from those resident on the farm is especially great for most farms start off with heavy debts and shortage of working capital. Unless a harambee spirit prevails a downward spiralling situation can develop whereby the individual finds there is no cash return to his labour as debts have to be repaid, he reduces his effort, farm product falls and the day when debts are cleared and dividends are distributed becomes more distant. In such a situation the individual turns more and more to the cultivation of his own plot which over time increases in size and encroaches upon the land of the central unit. According to one farm extension officer roughly one third of the large farms that have been taken over seem set upon this course, the end result of which in terms of land use may not be too different from the high density settlement schemes.

Individual owners of large farms are usually resident in Nairobi holding down high salaried positions. Absentee ownership, especially if there is lack of trust in the farm manager and restrictions on his cash holdings, can lead to delays in farm operations, among other problems.

The recipe for success, in as much as success is measured by the efficient running of the large scale unit, seems to be a limited company, with trust between its owners, and sufficient working capital to be able to employ its share holders as wage earners on the central unit.

The experience with settlement schemes has been that the high density schemes with smaller farm sizes have generally been more successful than the low density settlement schemes, in terms of production, debt repayment and number supported by the land. One reason is that the smaller farms have been able to bring a higher proportion of their land under cultivation. Generally, shortage of working capital with the accompanying constraints on the use of material inputs has kept crop and animal yields below target levels.

In terms of the number of people supported by the land, squatter settlement schemes do best. In Kenya, it is the Government's intention to settle a squatter family on 6 acres of land, which is equivalent to settling 160 families per 1000 acres. In practice, the average size of holding has been 11 acres equivalent to settling 90 families per 1000 acres.

High density settlement schemes, with an average farm size of 25 acres can be expected to settle 40 families per 1000 acres, while hired labour requirements are generally of the order of one labourer per two farms. Low density schemes, with their slightly larger average size of 35 acres, support only 28 families per 1000 acres, although their hired labour requirements are normally 1 labourer per farm.⁶

From this review of what has been happening to employment in the three main sub-sectors of Kenya agriculture we may draw the following conclusions relevant to the ensuing discussion of policies.

(i) In small scale agriculture the adoption of new farm technology along with the increasing diversity of the crop and stock mix appears to have had important effects in increasing the capacity of that sector to absorb labour productively. The job opportunities created however have been mainly for farm family members. While it is likely that there has been a significant increase in the number of workers employed full time on small scale farms, the level of wages paid is not sufficient to make these job opportunities attractive to school leavers unable to find employment in towns. That considerable scope still exists for raising the productivity of labour and hence wages

6. "A Comparison of the Intensity of Cultivation on Large and Small Farms in Kenya", J. Exeter, paper presented to the East African Agricultural Economics Society Conference, Makerere University, June 1972.

in small scale agriculture is shown by comparing output per acre and per man with estate agriculture.

(ii) In estate agriculture the adoption of new technologies has tended to reduce the number of job opportunities available per unit of output, but at the same time has allowed the payment of higher wages which come closer to the level needed to retain youth in agriculture. That these wages have not yet reached the required level is indicated by the periodic claims of labour shortages by estates.

(iii) In the large mixed farming areas changes in farming structure are pointing in the direction of a more equitable distribution of land among the farm population. Considerable scope still exists for moulding the evolving farm structure into a form which will increase the income and employment generating capacities of this sector. Ideas are scarce on how to make farming opportunities in this sub-sector attractive to young people with education.

POLICIES

Having outlined the major trends in employment and their causes in the various sub-sectors of Kenya agriculture, we now turn to a consideration of policies aimed at further expansion of job opportunities. These come under the heads of Technology Promotion, Land Policy and Other Measures.

Technology Promotion

While the potential for a Green Revolution exists in many areas of Kenya, the rate of adoption among small scale farmers of hybrid maize, fertilizers, plant fungicides and insecticides is proceeding at a pace which is more evolutionary than revolutionary. This is not to belittle the very marked increases in marketed output that have come from small farms in the years since independence, but to emphasise the gaps that exist between crop yields that can be achieved, as demonstrated by estates and large farms, and yields that are achieved, and the potential that exists for increased employment opportunities in small-scale agriculture, including settlement schemes, as the use of inputs that are complementary to labour in production is increased. The Development Plan, which views unemployment and underemployment as "Kenya's most difficult and persistent problems", and goes on to say that "every sector chapter of this document should be seen as an employment programme designed by Government to create the maximum number of jobs given the resources available", gives priority in the allocation of the agricultural development budget to "programmes which are designed to have widespread effects on agricultural productivity and efficiency and which will involve a high proportion of farmers: the accent will be placed on modernizing agriculture on a broad front". It may therefore

be inferred that Government regards technology promotion in small scale agriculture as important in employment creation, a policy stand which has been commended by Clayton, who concludes a lengthy review of the Plan with the statement that "The intensification of private small holdings is rightly selected as the most effective means of grappling with the employment problem".⁷

How is this technological revolution to be promoted in small scale agriculture? Answers to this question are likely to be forthcoming from the Special Rural Development Programme with its emphasis on the principles of experimentation, replicability and research and evaluation to achieve the general goal of increased standards of living in rural areas. Bottlenecks that have been identified under this programme include lack of funds, ignorance on the part of farmers and the fact that vital inputs including seeds are often unobtainable. Strategies for overcoming these bottlenecks include loans to farmers for hybrid maize, farmer training, intensive extension advice, and credit facilities for local stockists. In taking these approaches the SRDP is following the recommendations of the Working Party set up by the Government to look into the costs of agricultural inputs to farmers. Among the several recommendations of this committee are the following, which epitomise the tripartite nature of the small farmer production problem: extension, credit and distribution:

(i) that the Ministry of Agriculture improve the diffusion of information concerning fertilizers to agricultural extension officers, their ability to interpret this information, and their degree of contact with farmers;

(ii) that in areas not yet covered by commercial banks or with an inferior cooperative structure it is necessary for the time being for a Government seasonal credit agency to be established;

(iii) that an extra subsidy is given for fertilizer purchased through retailers including co-operative societies and mobile retail outlets at a rate of shs. 100 per metric ton of N or P₂O₅ nutrient.⁸

In seeking to identify which of these constraints is most important for the small farmer, and hence to which most attention should be given, many observers of the rural scene have been struck by the effects of expenditure on education on the cash flow of the small farmer. It appears that small farmers are subject to a form of capital rationing whereby available saving is channelled into what is wrongly perceived (at least from a social economic viewpoint) to be a worthwhile investment: education. The following quotation from a student from Kiambu illustrates this point:

7. E. Clayton, op. cit., p. 443

8. Report of the Working Party on Costs of Agricultural Inputs (The Havelock Report), Government Printer, Nairobi, 1971, p.42.

"The cash crop fetches most of the income. But this is absorbed by education. Investment therefore, if not in education, is very low. There are very many primary schools: one per sub-location. Everybody has seen education pays and all children of the right age above six years are now in school. If the parents cannot afford there is always that uncle who can do it, at least with some agreement of terms. In fact education is hindering any form of capital accumulation. Job availability after academic qualifications is nil in rural areas. The teaching population is almost saturated. The fortunate ones are getting employment as shop assistants and factory clerks (coffee and tea factories) The school has trained them to look for more sophisticated jobs like their brothers ahead of them. They have no spirit to go back to the land".³

With this sort of situation it is tempting to argue that a small farmer's major constraint is lack of credit: either of a seasonal kind so that he can purchase the seed and material inputs for the production of hybrid maize or cotton, or a medium term loan for the purchase of a grade cow or the establishment of tea. While there has been a fair degree of success with the latter type of loans it cannot be ascribed directly to credit, for intensive extension advice has usually been an important part of the package. The experience of seasonal credit for annual crops like cotton has been less salutary. Even though cotton is marketed through a single channel, repayment performance has been poor, partly because farmers have experienced difficulty in achieving worthwhile yields. Yet attempts to improve the credit worthiness of farmers through land registration and the use of title deeds as loan security have not been successful either. As the following quotations show, farmers are reluctant to put their land at risk.

"Very few farmers, however, get their loans, mainly because few of them ever ask for them. They think it is risky to ask for loans since in case one fails to repay them as required, one's land might be taken away and sold. Because of this therefore, most people would rather choose to remain with their lands undeveloped or very little developed than landless later on". (Kericho)³

"Credit availability, although there, is not welcome to the people, because of a few who welcomed the gesture but could not manage the credit to pay back the loan, so that their land was auctioned. Credit to buy grade cows is however being welcomed". (Kiambu)³

In reviewing the success or otherwise of projects aimed at increasing rates of adoption of new enterprises in small scale agriculture, one is struck by two, perhaps rather obvious, points. First, that strategies aimed at overcoming one bottleneck fare less well than the 'package'; second, that farmers respond well to new enterprises where the returns to the investment are high. Tea, grade cattle, and hybrid maize all offer high returns to labour and land: cotton does not. This second point raises two further considerations of some policy significance.

3. See footnote 3, page 4.

(i) the disparity between different areas of the country in the stock of technical knowledge available for dissemination to farmers.

(ii) whether the agricultural research being carried out is producing innovations that are suited to the situation of the small farmer.

For historical reasons much of the agricultural research carried out in Kenya has been orientated towards large farms and estates of the high potential areas of the country. With the coming of Independence small farmers in high potential areas were able to benefit from a backlog of agricultural research on cash crops like coffee and pyrethrum which they had formerly been prevented from growing. No such backlog of knowledge exists for farmers now being forced by population pressures into drier areas.

Secondly, there is the question of the suitability of agricultural research findings carried out with large production in mind for the situation of the small farmer. Belshaw and Hall⁹ have argued in this respect that the reason for the relatively slow adoption of hybrid maize in certain areas like Nyeri is that the increased husbandry, labour, cash and material input requirements, do not conform with the realities of the small farm situation where labour is scarce at peak periods, cash is short and may not be transferrable from other enterprises, and the real cost of using material inputs is high because they are not readily available or for sale in the quantities required by the small farmer.

While there is much truth in this line of argument which should be reflected in the design of future agricultural research programmes, there are reasons for thinking that the new technology embodied in hybrid maize seed should be exploited in small as well as large scale farming. Given the almost universal behavioural preference in small scale agriculture that most if not all the farm family's food needs are met from production on the family shamba, the much higher maize yields which can be obtained with hybrid seed offer the possibility of meeting subsistence needs on a reduced acreage, thus freeing land and labour for the higher income cash crops. It is through extra production of hybrid maize too that stabilization of food markets is likely to come, which is the sine qua non of a longer term goal in small scale agriculture: cash crop specialization.

Land Policy

(a) Land redistribution: So recent have been the changes in land distribution in Kenya that the real effects on output and employment have yet

9. "The Analysis and Use of Agricultural Experimental Data in Tropical Africa", D. Belshaw and M.Hall, East African Journal of Rural Development, 1972.

to be fully documented. However there is a widespread feeling among economists, supported by a growing amount of evidence, that where smaller farm sizes prevail in the former large mixed farming areas, employment has increased, and that production of a marketed surplus from these farms for the urban populations can still be achieved.

While the move towards smaller farm size in the large mixed farm areas will necessarily continue, Government is now exercising much less control over the rate at which it will occur. Government policy towards land re-distribution in this sub-sector has changed from one of fairly rigid control in the sixties, in implementing the expensive but politically expedient Million Acre Settlement scheme, to a more laissez-faire attitude in the seventies. It is by no means clear that the present by-stander policy, which is permitting an unprecedented scramble among tribal groups and wealthy individuals for land, is leading to a distribution of land which maximises current employment opportunities. Many of the farms under new ownership are undercapitalised, so that only a small proportion of the land is cultivated. Other farms are now owned by absentee landlords, who are reluctant to give to managers the trust in relation to cash holdings needed for efficient operation. Instead of waiting for political or economic pressures to induce sub-division, a better policy might be a continuation of Government sponsored land transfers under the lower cost 'squatter' type of settlement. Squatter settlement however is not likely to be attractive to unemployed school leavers.

More radical solutions have been proposed by the Select Committee on Unemployment, which recommends that "Land especially in the former Scheduled Area, which currently is not sufficiently utilized, should be brought into production. There should also be a ceiling on the amount of land which can be owned by one single individual".¹⁰

An alternative to a ceiling on land ownership which might be easy to administer now that registration has proceeded apace, and which would have the advantages of stimulating production as well as raising revenue, would be a land tax.

(b) Shifting the land frontier: If the prospects for land settlement at lower costs per family than have been incurred in the past are good, the prospects of bringing land into cultivation through irrigation at lower costs than in the past are not.

10. Report of the Select Committee on Unemployment, National Assembly, Nairobi, 1970. p. 20.

It is the high costs per job that have led both Smith and Clayton to reject replication of such agronomically successful schemes as Mwea as worthwhile components of an employment creation strategy. In comparing the different costs of past land reform programmes in relation to job creation, Clayton concludes that "The most effective policy is the intensification of existing small holdings: schemes of this type employ and support a large number of persons per unit of land at relatively low cost. And while irrigation schemes make by far the greatest net addition to employment per land area, they are also the most costly".¹¹

Smith writes "large scale irrigation schemes are sometimes advanced as a solution (to the employment problem), but these are prohibitively expensive".¹²

Yet plans are being prepared for the implementation of the Tana River project, for which preliminary estimates suggest that costs per family settled may be as high as shs.30,000 - equivalent to the lifetime earnings of an agricultural labourer in small scale agriculture.

Bringing marginal lands into cultivation can be accomplished by other means than increasing water supplies for given crops. Agricultural research can and has resulted in crop varieties with much reduced water requirements, thus effectively shifting the land frontier outwards. Another form of agricultural land creation is to take land out of forest, which is seldom earning a return comparable to that from farming. The hydrological balance can be preserved if small farmers grow permanent crops like tea.

(c) Other Measures: Pricing of agricultural output for employment creation may conflict with Kenya's strategy of aiming at full self sufficiency in food production. Broadly speaking, subsidies to producers of food crops and taxes on exports, or an overvalued exchange rate, will tend to reduce the employment capacity of agriculture as the export crops (tea, coffee, pyrethrum) are generally more labour demanding than crops grown for domestic consumption (wheat, maize).

It is less easy to generalise about factor pricing. In a static context there appear to be situations where imported machinery and herbicides substitute for labour. But there are two important considerations in the Kenya context which suggest caution in jumping to the conclusion that these

11. E. Clayton, op. cit., p. 443

12. "Some Possible Policy Issues for Kenyan Agriculture", L. Smith, IDS Staff Paper No. 98, May 1971, p. 8.

inputs should be taxed heavily, as opposed to being able to compete on their own terms with labour. First, there is the problem of seasonal peaks of labour demand. In small scale agriculture one is often confronted with the paradoxical situation of uncultivated land in an area characterised by unemployment. This is especially likely where permanent crops are not grown, which can be established incrementally. The reason for uncultivated land is often seasonal labour peaks at cultivation and weeding times which exceed local labour availabilities. It is in these situations that tractors and/or herbicides can have the effect of increasing the labour absorptive capacity of small scale agriculture by breaking labour bottlenecks.

Secondly, there is a need to make agricultural occupations attractive to people. If the timeliness of bottleneck operations is increased, labour productivity in these and other operations will rise and so too will wages. We have seen with estate tea that herbicides can increase the productivity of a man by a factor of five. Furthermore, the use of machinery and herbicides reduces much of the drudgery of farm work.

An alternative to finding machinery and other substitutes for labour at peak periods is to bring in labour from another area where agricultural activity is slack. In Kenya, ecological diversity is such that the chances of finding areas which have complementary agricultural labour profiles are good.

The success of this type of policy depends on the spread of market information to potential job-seekers and potential employers and the provision of transport and housing. There is some evidence that in the past, labour contractors acting as middlemen were adept at moving labour around the countryside to meet seasonal needs, but the practice of labour contracting appears to be dying out and with it the stock of knowledge of the needed direction of seasonal labour movements. To compensate for this, aggregate labour profiles for agricultural district can be constructed with a view to determining either formally, using a linear programming transportation model, or otherwise, the possibilities for seasonal short term movement of labour from a trough in one district to a peak in another.

Such an exercise might show that a substantial potential for seasonal movement of labour exists, but it may be difficult to get labour movement on any scale. The few government efforts to promote labour mobility within agriculture have not been very successful. Some of the difficulties are (i) members of some tribes will not work for members of another tribe

(ii) labour from one district may not have the necessary skills to harvest satisfactorily a crop with which they are unfamiliar (iii) the need to provide housing for temporary workers is important, and this adds substantially to the costs of the operation (iv) some of the alleged shortages of labour at peak times e.g. coffee harvesting on estates, turn out to be more apparent than real.

The alternative to moving people in slack periods to other areas for work is to find work for underemployed people in their own area. Direct capital formation as a means of combatting unemployment has been recommended by the Select Committee on unemployment which advocates labour intensive rural road construction and the hiring of labour, subsidised by Government, for clearing bush on ranch land.¹³

13. Select Committee Report on Unemployment, op. cit., p. 21.