Agrarian Reform, Agricultural Planning and Employment in Kenya

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THE COURSE of economic development in Kenya since independence has been a steady one during which its people as a whole have become better fed, better clothed and better housed than they were in 1963. The annual increase in gross domestic product has averaged 6.3 per cent—6.9 per cent in the monetary sector and 4.2 in the non-monetary sector. Against this, the population has increased by rather more than 3 per cent per annum, which means an increase in the average product per head of over 3 per cent per annum. Agriculture contributed directly over 30 per cent to GDP, absorbed 50 per cent of the increase in wage employment and produced 60 per cent of the exports by value. The small farmer has not improved his position as much as the wage earner, although in absolute terms his position improved more rapidly than in any previous period. Since 1966 small farm incomes have increased by 23 per cent, or over 5 per cent per annum. Average income per farm family has not risen at the same rate because the number of families dependent on agriculture has also increased.[2]

There is no doubt, however, that the high rate of population growth has placed a strain on the resources of the country, since a substantial part of each year's growth is required simply to maintain living standards. The number of adult males between 15 and 54 years of age is estimated to have risen from 2,075,000 in 1964 to 2,379,000 in 1968, or by about 300,000. Of these less than 50 per cent obtained paid employment.

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[2] Republic of Kenya: *Development Plan 1970-1974* (Nairobi, 1969), pp. 20, 29 and 67.

Indeed, the expansion of wage employment opportunities has been a disappointing feature of the post-independence period, largely because the growth of industrial output has not produced any comparable expansion of *regular urban* employment. Increased employment opportunities have related mainly to *casual* employment in the *rural* areas. And while this has brought a greater share of economic benefits for the rural people, it means that job expansion in the urban areas, vital for long-term development, has been inadequate.

Although estimates are not possible, owing to lack of data, it is true to say that unemployment and underemployment have reached serious proportions in both town and country. While job opportunities outside agriculture have risen only slowly in recent years, a large number of children leave primary schools each year, many of whom will eventually try to find jobs in the towns. The flow of job seekers from rural areas into the towns continues to exceed the number of job opportunities. In certain fields the number of jobs has actually declined, so that many people who previously held jobs are looking for work. The planners view the problem with dismay—perhaps even despair. " Urban unemployment is a bottomless pit as long as better prospects for jobs in the towns lead to a continued and even bigger influx of people from the rural areas. Measures against unemployment will therefore be ineffective unless strong measures are taken to induce people to stay in the rural areas and seek their income there." [1]

In the rural areas recorded wage employment has fallen, due to the transfer of large European-owned farms to settlement schemes, though in time this should be more than offset by additional family labour. The rural labour force continues to grow, though only part of it is being absorbed by the small-farm sector; the net effects are pockets of unemployment in the rural areas. In addition there is the problem of rural underemployment (reckoned in 1964 to equal roughly 50-70,000 man-years) which follows from a shortage of land (in some areas—not generally), rural immobility and a scarcity of alternative rural employment opportunities.

Despite a fairly virile economy, a buoyant industrial-commercial sector, and a record of successful agricultural development policies, Kenya's growing population exceeds the country's capacity to employ it actively. For social, political and humanitarian reasons, this is clearly a problem that needs to be tackled by purposeful government planning. The questions, therefore, of supreme importance to the planners are: what is the magnitude of the problem, and what are the policies most likely to alleviate it.

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[1] P. Ndegwa and O. D. K. Norbye: " The strategy of Kenya's Development Plan 1966-1970 ", in James R. Sheffield (ed.): *Education, employment and rural development*. The proceedings of a Conference held at Kericho, Kenya in September 1966 (Nairobi, East African Publishing House, 1967), p. 90.

Kenya's labour absorption problem

The scale of the unemployment problem likely to face Kenya has been starkly demonstrated by Etherington in a now classic paper.[1] He pointed out that—given Kenya's high population growth rate, the present proportion of population in agriculture and the coefficient of differential growth—the total absorption of increased population by the non-agricultural sector was inconceivable. Furthermore, because of its small urban base, an absolute decline in Kenya's agricultural population was only a distant theoretical possibility. And though a relative decline in the numbers engaged in agriculture could not be excluded, it too was of rather academic interest. Between 1948 and 1962 the rate of population growth in Kenya was 3 per cent per annum, and at the time of the 1962 census total population was 8.6 million. Of these, 7.8 per cent were urban-based and 92.2 were rural-based. Between these dates it was estimated that the urban population grew at the rate of 6 per cent per annum, which is quite rapid and likely to continue for at least another decade. Moreover, urbanisation was undergoing rapid change not only in terms of numbers but also in composition. The system of migratory labour, so common over most of Africa, is breaking down rapidly. Today the typical worker is no longer a temporary migrant but more and more part of a permanent labour force. For example, in 1948, 71 per cent of the African population in Nairobi were adult males; this figure had fallen to 47 per cent in 1962. In the latter year the ratio of women and children to adult males had reached 1.06 : 1 and can be expected progressively to approach the national average of 3.57 : 1. Thus the 6 per cent per annum rate of urban population increase is attributable to the increasing size and permanence of the urban family as well as to rural-urban migration.

Etherington's projections of the urban, rural and total population (African) to 1980 indicated that, with Kenya's coefficient of differential growth as between her urban and total population, the urban share in the total population would increase by a mere 3 per cent per annum.

TABLE I. RURAL AND URBAN AFRICAN POPULATION PROJECTIONS FOR KENYA

(In thousands)

Year	Urban	Percentage	Rural	Percentage
1962	507	6.3	7 599	93.7
1970	799	7.7	9 530	92.3
1980	1 459	9.8	12 897	90.2

Source: Etherington, op. cit., table 3.

[1] D. M. Etherington: " Projected changes in urban and rural population in Kenya and the implications for development policy ", in *East African Economic Review* (Nairobi), New Series, Vol. 1, No. 2, June 1965.

What these projections clearly showed was the insignificant effect that urbanisation is likely to have on the urban/rural distribution of population in Kenya in the coming decade. The very small proportion of population in the urban areas clearly precludes absorption by the urban sector of the increase in total population. For if the annual increase in Kenya's total population were to be absorbed by the towns, then increases in the urban population would have to exceed 30 per cent per annum. The conclusion follows that, where the distribution of population is so heavily weighted towards agriculture, increases in population of the order of 3 per cent per annum have to be mainly absorbed through agricultural development that significantly increases the level of rural incomes and employment.

Belshaw has also pointed out that population growth in Kenya has been accompanied, in recent years, by substantial reductions in the mortality rate, which has created a population pyramid in which 50 per cent of the population is under 16 years of age. The consequence of this is that the number of young entrants to the national labour force will increase very rapidly over the next decade. It has been estimated that in 1965, out of a total of 159,000 school-leavers, 61,000 were completely unemployed of whom 50,000 were in the rural areas and 11,000 in the urban areas.[1]

On the basis of the 1962 census, which indicated a population growth rate exceeding 3 per cent per annum [2], total population in 1969 was 10.7 million and will be 12.4 million in 1974. At the same time the labour force will increase, at a rate of 3.1 per cent per annum, by approximately 830,000 persons by 1974. Of these, more than 500,000 will be primary school-leavers, almost all of whom will have to be absorbed into agricultural and other types of rural employment because there will not be sufficient urban wage jobs to absorb them. There will in addition be 138,000 secondary school-leavers, only half of whom will be able to find urban wage employment in 1974. Because wage employment in industry and commerce currently accounts for such a small proportion of the population of working age, even the most rapid conceivable rise in employment in these sectors by 1974 will not make a great deal of difference to the employment problem as a whole. The great bulk of future employment will have to be provided in the rural areas: on smallholdings, on large farms and in a wide variety of non-agricultural rural enterprises. The Kenya Development Plan for 1970-74 aims to create jobs for 405,000 wage earners and self-employed persons; but even if this goal is achieved, a further 425,000 people, most of them women, will have to find a livelihood as family workers on the land over the period.

[1] D. G. R. Belshaw: *Population growth absorption policy in East Africa* (Kampala, Makerere University College, 1965) (mimeographed).

[2] The recent 1969 census indicates a growth rate of 3.3 per cent per annum.

Absorptive capacity of industry and agriculture

Kenya has to deal with several kinds of unemployment; first, there are the urban unemployed—those who have migrated to the towns and been unsuccessful in finding wage employment; second, there are the rural unemployed and underemployed—those who are usually engaged in agriculture, but who do not possess enough land, skills or other resources to provide them with a full-time [1] productive occupation; and third, there are the educated unemployed. Though the underlying causes of unemployment are complex, the main causal factors are high population growth rates relative to the availability of co-operating resources, the rural-urban population drift and the tendency to substitute capital for labour in developing urban industry. The causes of specific kinds of unemployment and underemployment are linked to such factors as inadequate training, lack of skills and other resources. High man/land ratios in some parts of the country and rural immobility aggravate the rural problem. Unemployment among the educated is due to the expansion of school enrolments, which outstrip the ability of the economy to provide jobs, to school curricula, which inadequately prepare students for the conditions encountered after leaving school, and to parental pressure on school-leavers to take up urban employment.

Regarding urban unemployment, labour supply factors are affected by rural-urban migration and labour demand factors by the propensity of employers to invest in labour-saving machinery. Rural-urban migration is caused by a number of factors. First, there are large urban/rural income differentials. Urban wages and salaries are high as a result of minimum wage legislation [2], trade union pressure and employers' subsequent demand for more competent workers. It is generally agreed that this disparity between urban and rural incomes is the major cause of migration from the countryside to the towns—" acting like a magnet in attracting labour ". That it can be considerable is shown by recent studies in Botswana and Zambia which revealed urban incomes six times as high as those in rural areas.[3] Second, where a proportion of the urban wage bill is given directly to the unemployed, under obligations of the extended family system, then as long as this income provides enough to live on it will encourage rural-urban migration, particularly where it is higher than the average farm income. Third, to the extent that tax revenues

[1] A conceptually difficult term involving the notion of a customary length of working day and the marginal return to effort.

[2] See Peter H. Thormann: " The rural-urban income differential and minimum wage fixing criteria ", in *International Labour Review*, Vol. 102, No. 2, Aug. 1970, pp. 127-147.

[3] D. Jackson: *Unemployment, development strategies, and the problems of foreign private investment in underdeveloped countries* (London, Institute of Commonwealth Studies, University of London, 1970) (mimeographed).

are spent on developing urban rather than rural infrastructure, the facilities available to the unemployed in the urban areas will be increased. Fourth, the consumer price index is likely to have an effect on rural-urban migration. Because rural wages are unlikely, in contrast to urban wages, to rise in line with prices, then the faster the rise in the cost of living the greater will be the incentive to migrate from rural areas as rural real incomes fall. And fifth, it is commonly held that education is likely to make agricultural manual work unattractive.[1] If this is so an increase in general education is likely to increase rural-urban migration as the number of rural children grows, unless the educational programme is carefully planned.

The tendency of employers to substitute capital for labour or in other ways economise on the labour input is also due to a number of different factors. First, rising wage levels provide an incentive to invest in labour-saving machinery. During the three years 1964-66 the rate of growth of average earnings in Kenya was nearly three times that of employment. Of this, the official economic survey of 1967 observed, " there is little doubt that continued rapid increases in earnings and the very slow growth of employment are related—as average wages go up, employers economise on the use of labour by substituting capital ".[2] Second, labour requirements per unit of product are reduced through better personnel policies and more efficient management. As production increases, as the poorer workers are weeded out, and as those remaining become more experienced, skilled, and effectively supervised, the number of workers per unit of output is bound to decrease; that is, production rises much more rapidly than employment.[3] A third factor encouraging capital intensification is the granting of investment allowances to businessmen. Fourth, there is the need to economise demand for skilled and supervisory employees who may have to be trained by a firm. The returns to the cost of this training will be compared with the returns to the cost of buying more expensive machinery. Training costs are partly a function of the number of years trained persons stay with a firm, so the greater the probability that they will be enticed away by other firms, the more likely a firm will opt for techniques that minimise the need for skilled and supervisory staff.[4] Fifth, sales of labour-saving equipment are assiduously promoted by firms which clearly have no interest in encouraging the use of capital-saving methods.

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[1] But see C. Hutton: *Urban unemployment as a social problem : Uganda 1965* (London, Institute of Commonwealth Studies, University of London).

[2] Ministry of Economic Planning and Development, Republic of Kenya: *Economic survey 1967* (Nairobi, 1967).

[3] F. H. Harbison: " The generation of employment in newly developing countries ", in Sheffield, op. cit.

[4] W. Elkan: *Urban unemployment in East Africa* (London, Institute of Commonwealth Studies, University of London, 1970) (mimeographed).

It thus appears that high wages, modern technology, improved managerial practices and high productivity place limits on the ability of the urban sector to absorb labour. At the same time high rates of population growth, rising aspirations and the spread of education swell the ranks of those seeking entry into it. As Harbison has forcibly put it: "... unemployment is associated with unbalanced economic progress. It appears to be a by-product of growth, a disease of industrialisation, and a consequence of the introduction of modern ideas and institutions. Its roots lie not in failure to achieve high levels of investment and economic growth but rather in progress towards the achievement of these very goals. In short, modernisation is a generator of unemployment." [1]

Even public policies which bypass the labour market seem incapable of increasing urban employment opportunities more rapidly. A recent study by Harris and Todaro [2] has shown that, although the wide gap between urban and rural incomes is quite enough to explain migration to towns in search of work, migration is not solely a function of income differentials. It is also partly a function of the *probability* of finding a job. Migrants seem fairly realistic about the likelihood that they will not find a job at once; they realise that they may have to wait. How many migrate therefore depends in part on how long it takes to find a first job. The inference of this is that, if the rate of job creation increases, it will not reduce urban unemployment because, as soon as it becomes known that jobs have become easier to get, the flow of migrants to the towns increases, thus replenishing the pool of urban unemployed, and this without any change in income differentials between town and country. Some evidence of this emerges from an experiment in Kenya. In 1964 a tripartite agreement was reached under which private employers and the Government agreed to increase their workforce by 15 per cent at once, on condition that the trade unions agreed to accept a wage moratorium. In the event, the Government could not afford to increase its labour force but private employers did, and this acted like a magnet attracting new workers into the urban labour market, which in the end probably increased rather than decreased urban unemployment.[3]

The extent of rural unemployment and underemployment is influenced by the low productivity of agriculture; its uneven demand for labour over the growing season; the shortage of land and other resources for agricultural production; the relative immobility of farm families; and the scarcity of non-agricultural employment opportunities in rural

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[1] Harbison, op. cit., p. 174.

[2] John R. Harris and Michael P. Todaro: " Urban unemployment in East Africa: an economic analysis of policy alternatives ", in *East African Economic Review* (Nairobi), New Series, Vol. 4, No. 2, Dec. 1968.

[3] Harbison, op. cit. Note that, despite this discouraging experience, the Kenya Government has recently, for a second time, insisted that all employers increase their labour force by 10 per cent during 1970.

areas. Employment opportunities in the countryside can be increased by raising agricultural productivity, particularly by introducing or extending labour-intensive crops; by fostering farming systems with more even seasonal labour demands; by encouraging rural self-employment activities; by the transfer of population; and by establishing rural industries. Of course the achievement of these objectives presents immense difficulties. Given the now incontrovertible (and generally accepted) proposition that a developing agriculture must be regarded as the primary employer of an increasing population—a far cry from the Lewis development model—it is useful to consider which of Kenya's major agricultural policies have had the greatest labour absorptive capacity.

Increased employment and incomes through land reform

Since the Second World War the Kenya Government has given active encouragement to agrarian development through a variety of policy measures, several of which involved land and tenure reforms. The first of these was initiated in 1954 under the well-known Swynnerton Plan. Briefly its objective was to transform Kenya's peasant agriculture from a traditional to a commercial basis by abolishing communal land tenure—through consolidation of individually owned holdings; by providing economic incentives—through the introduction of high-value cash crops; and by achieving a more economic use of farm resources—through farm planning and improved extension services. This programme achieved a notable success and is well documented.[1] In 1962 another rural development programme was initiated, the Million Acre Settlement Scheme, whose objective was to resettle landless families on small holdings, on land formerly occupied by large, commercial farms owned by non-Kenyans.[2] A parallel development involved, instead of the break-up of foreign-owned large farms into small holdings, the transfer of ownership of these farms to Kenyan nationals. And lastly, the establishment of irrigation schemes, on previously unoccupied land, was another important method of encouraging rural development.

The primary aim of these programmes was the raising of farm incomes and living standards. Now, with Kenya's problem of urban and rural unemployment and underemployment, it is important to examine how effective these different approaches have been in raising levels of employment.

[1] See Eric Clayton: *Agrarian development in peasant economies*. Some lessons from Kenya (Oxford, London, Edinburgh, Paris, Frankfurt, Pergamon Press; New York, Macmillan, 1964) and John C. de Wilde: *Experiences with agricultural development in tropical Africa*. Vol. II: *The case studies* (Baltimore, Johns Hopkins Press for the International Bank for Reconstruction and Development, 1967).

[2] H. Ruthenburg: *African agricultural production development policy in Kenya, 1952-65* (Berlin, 1966).

Land intensification—The Swynnerton Plan

For the purposes of this study Nyeri District in the Central Province of Kenya [1] will be taken to illustrate the employment effect of Swynnerton developments. It is an area of high agricultural potential and was one of the first regions to benefit from land consolidation—consolidation of land previously fragmented and mainly under communal tenure. Ecologically it is suitable for coffee, tea, pyrethrum, pineapple and milk production, and with the introduction of these products progress was rapid. As table II shows, the value of marketed produce increased fourfold in ten years. With the rapid introduction of hybrid and synthetic maizes in recent years, the wealth-creating capacity of these reforms continues to progress satisfactorily.

TABLE II. VALUE OF MARKETED PRODUCE [1], NYERI DISTRICT

Year	Kenya shillings (millions)	Year	Kenya shillings (millions)
1955 . . .	3.1	1960 . . .	5.4
1956 . . .	4.2	1961 . . .	6.5
1957 . . .	4.1	1962 . . .	7.2
1958 . . .	4.1	1963 . . .	9.1
1959 . . .	4.8	1964 . . .	12.7

Source: Ruthenburg, op. cit., p. 30.
[1] Excluding cattle, hides and skins.

The results of a survey of consolidated farms in Nyeri, showing levels of output and profits, give some idea of the effect that the Swynnerton reforms have had on the economic status of farm families and on farms of varying sizes (see table III).

The aim of these reforms was to provide a farmer (on a holding of about three hectares) with a cash income of Shs. 2,000 and family subsistence. The farmers in this survey seem to have achieved this objective comfortably. The impact of the reforms on different sizes of holding conforms to expectations. As farm size increases, output per hectare falls and output per man rises. The relation of profits to farm size is similar though more tenuous. Both sets of ratios clearly indicate the adverse effect which the absorption of an increasing population by the agricultural sector, and hence declining farm size, will have on average farm incomes. Yield-increasing, cost-reducing innovations are urgently necessary to overcome this dilemma.

It was estimated by a World Bank mission that, following consolidation, the increase of coffee, tea and milk production in Nyeri District

[1] Nyeri is one of five administrative districts in Central Province.

TABLE III. OUTPUT AND PROFIT FROM FORTY-NINE FARMS, NYERI DISTRICT, 1964

No. of farms	Farm size (ha.)	Labour input (man-years [1])	Output per ha. (Shs.)	Profit per ha. (Shs.)	Output per man (Shs.)	Profit per man (Shs.)
6	2.14	2.58	1255	753	1046	629
14	3.24	2.82	1354	926	1562	1070
16	4.69	4.37	1166	674	1252	723
6	6.11	4.50	990	639	1339	863
7	12.26	6.41	941	694	1820	1343
—	*5.22*	*4.1*	*1104*	*726*	*1408*	*926*

Source: Statistics Division, Ministry of Economic Planning and Development, Republic of Kenya: *Some aspects of agricultural development in Nyeri District 1964*, Report No. 25.

Note: Mean figures are shown in italics.

[1] Man-year of 1,800 man-hours.

alone increased the demand for labour, over and above farm family effort, by some 8,600 adults (assuming a man-year at 2,000 man-hours).[1] Government planners suggested 10,000 new employment opportunities (with the same crops) in a district with roughly 50,000 families.[2] Using an aggregate programming model, Odero-Ogwel[3] estimated that, with farm resources optimally disposed, agriculture in Nyeri (excluding South Tetu division) would employ 92,285 persons, of whom 17,000 would be hired. However, a farm survey in 1964 indicates that 87,000 persons were engaged in Nyeri agriculture, of whom 30,000 were hired workers.[4] This gives an employment capacity of 1,072 employed persons (family and hired) per 1,000 hectares. At the same date the number of persons (adults and children) supported by agriculture in Nyeri was 2,906 (1,527 adults) per 1,000 hectares.

Subdivision of large units—The Million Acre Settlement Scheme

When the scheme is completed in 1970 some 35,000 families will have been settled on about 500,000 hectares of the former " White Highlands ". Although a substantial decline in marketed output was expected after the break-up of the large commercial farms, this in fact was a short-lived phenomenon associated with the initial difficulties of

[1] de Wilde, op. cit., p. 56.

[2] Republic of Kenya: *Development Plan 1966-70*, p. 7.

[3] L. A. Odero-Ogwel: " A regional planning model for agricultural development in low-income countries ", an unpublished PhD thesis, University of London.

[4] Estimates based on data from de Wilde, op. cit., p. 37, and Statistics Division: *Some aspects of agricultural development in Nyeri District 1964*, op. cit. A man-year of 1,800 man-hours is assumed.

settlement. And though there is much room for improvement, the latest figures from a sample survey show a substantial increase in productivity over the pre-settlement level (see table IV).

TABLE IV. FARM OUTPUT AND PROFITS ON MILLION ACRE SETTLEMENT SCHEME

Year	Value of output (Shs. per ha.)	Net farm profit, including interest (Shs. per ha.)
Pre-settlement . .	161	n.a.
1964/65	160	13
1965/66	247	80
1966/67	299	122

Sources: Statistics Division: *Economic survey of settlement schemes. Preliminary results.* The pre-settlement figure is from Republic of Kenya: *Development Plan 1966-70*, p. 29.

The patterns of farming being practised in the settlement areas are very similar to those operated by the large-scale farmers who previously owned and worked the land. However, these farming systems are now being run by labour-intensive methods instead of the highly mechanised methods previously employed. The results from surveys of settlement farms in 1964-67 indicate that on average there were approximately 319 employed adults per 1,000 hectares [1] on the Million Acre Settlement Scheme. In the same period the number of persons (including farm family and hired workers) supported by the scheme was about 568 per 1,000 hectares.[2]

Land Extensification—The Mwea Irrigation Scheme

Several irrigation schemes, based on specialised crops such as cotton, onions or rice, have been established in Kenya. For illustrative purposes the Mwea Scheme is considered here. The Scheme comprises four-acre (1.62 ha.) holdings which specialise in intensive paddy production. One crop a year is taken and very high yields obtained. The land, prior to settlement, was not used for agricultural production. Table V shows the progress of the Scheme over the years, its high level of productivity and the returns to farmers. Payments to farmers comprised about 40 per cent of the gross value of output, the balance being retained by the Irrigation Authority to cover its costs and capital repayment.

[1] Information communicated by J. D. MacArthur, University College of North Wales.

[2] This far exceeds the number supported by large-scale farms; see J. D. MacArthur: " Some thoughts on future trends in farm employment in Kenya ", in Sheffield, op. cit., p. 128. Estimates of hired workers from Statistics Division: *Economic survey of settlement schemes*, op. cit.

TABLE V. PROGRESS OF MWEA IRRIGATION SCHEME

Year	Hectares	No. of farmers	Output per ha. (Shs.)	Payments to farmers (Shs.)
1961/62	2013	1246	2520	2720
1962/63	2009	1246	2660	2800
1963/64	2208	1340	2400	2480
1964/65	2242	1340	2240	2320
1965/66	2593	1484	2460	2540
1966/67	2830	1588	2380	2620
1967/68	3100	1721	2720	3120
1968/69	3443	1894	2460	2740

Source: Statistics Division: *Statistical abstract 1969.*

The results of a survey of rice farms at Mwea in 1964 indicate that there were 2,807 employed persons (family and hired) per 1,000 hectares (assuming 250 man-days a year) [1], while at the same time the scheme supported approximately 10,000 landless people [1], i.e. 4,529 persons per 1,000 hectares.

Africanisation of large units

By 1968 about 1,200 large-scale mixed farms, previously owned and operated by non-Africans, had been taken over by Kenyans. The area involved totalled 400,000 hectares. Production on these farms continues to be based on the mechanised production of annual crops with livestock. However, lack of experience and knowledge of large-scale agricultural business, as well as an acute shortage of capital at the disposal of the new owners, has resulted in a decline in output and employment. A recent, unpublished, survey of a sample of these farms in 1968 indicated a mean " gross cash surplus " [2] of Shs. 109 per hectare and a mean farm profit of Shs. 57 per hectare. But it is considered that " in time, there is no doubt that the intensification of farming [on these units] will pick up ".[3] If this occurs, then it can be assumed that employment levels will reach those prevailing before the transfer of ownership (but this of course involves no net additional employment). Farm surveys show a mean level of 116 employed persons per 1,000 hectares (assuming a man-year of 300 man-days).[3]

[1] Derived from labour input data quoted in Ruthenburg, op. cit., p. 59.

[2] Presumably excluding the value of family and workforce subsistence.

[3] MacArthur, op. cit., pp. 129 and 139. Corroborated by R. Posner: *Preliminary results of a survey of the labour market in mixed farms in Trans Nzoia, Kenya*, RDR paper No. 49 (Kampala, Department of Rural Economy, Makerere University College, 1965) (mimeographed).

To summarise, the estimated employment and supporting capacity of the four major agrarian reforms undertaken in Kenya in recent years, together with their costs, are shown in table VI.

TABLE VI. EMPLOYMENT AND SUPPORTING CAPACITY OF AGRARIAN REFORMS

Type of scheme	Employed persons per 1 000 ha.	Supported persons per 1 000 ha.	Approximate cost per ha. (Shs.)
Land intensification	1 072	2 906	100 [1]
Subdivision of large units	319	562	1 000 [2]
Land extensification	2 807	4 529	7 160 [3]
African ownership of large units	116	n.a.	760 [4]

Sources: [1] Republic of Kenya: *Development Plan 1966-70*, p. 3. For consolidation and registration only. [2] R. S. Odingo: " Land settlement in the Kenya Highlands ", in Sheffield, op. cit.—costs of land 45 per cent, development 35 per cent, and administration 20 per cent. [3] Ruthenburg, op. cit., p. 60. Of which capital expenditure 57 per cent and recurrent expenditure 43 per cent (including administration). [4] Republic of Kenya: *Development Plan, 1966-70*, p. 31. For fixed assets (including land).

A cursory inspection of table VI reveals that, ignoring political and economic factors, land reforms involving irrigation of unoccupied land have by far the highest labour absorption capacity. When development costs are also taken into account, however, a different picture emerges. The transfer of ownership of large farms is quite costly and makes no net addition to employment. The subdivision of large farms into small holdings makes a modest contribution, per unit of land, to additional employment at rather high cost. 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.

Given the scale of Kenya's rural unemployment, however, a variety of land reform policies have clearly been both necessary and justifiable. There is, perhaps, one valid ex post facto criticism of policy that can be made, and that relates to the transfer of ownership of large farms. The break-up of these farms into small holdings, at little extra cost and with the same political objective, would have created substantially greater employment and a higher level of output. In future the selection of agrarian policies which aim, among other things, to increase rural employment, will have to relate employment absorptive capacity to cost; selection will also be constrained by limitations on the amounts of irrigable land and alien-owned land.

Agricultural planning and employment

Since agriculture must make the main contribution to increased wealth and employment, it follows that the selected strategy of agricultural and rural development will affect the extent to which wealth and employment are increased. At a crucial conference of senior officials and academics on rural development, employment and education (held at Kericho in 1966), it was considered essential for government policy to focus on certain key areas if Kenya's unemployment problem was to be effectively tackled.

Regarding the structure of agriculture, for example, it was considered that, where possible, the selection of labour-intensive alternatives was desirable. A few crops are particularly suitable for production on large-scale, mechanised units, but most crop and livestock products can be developed on either large or small-scale units; where this is so, then small, labour-intensive units should be encouraged and developed. With rapid growth of population, both the size of holdings and the opportunity cost of employing farm labour will fall, and both these factors will increasingly make capital-intensive, mechanised agriculture uneconomic and irrelevant.[1] The pattern of farm structure should also recognise limitations of farmers' entrepreneurial capacity, and the establishment of large-farm units which are too big for the available management abilities should be avoided.

Rural development strategy must also take account of economic incentives, particularly as they affect farm incomes. The need to provide reasonable prices to farmers requires the development of efficient marketing channels and the judicious use of price and quantity controls to secure low-cost production, regular seasonal supplies and the avoidance of excessive seasonal price fluctuations. Efficiency should also be increased in the transportation, processing and physical marketing of farm products. To encourage rural development it is also necessary to enhance the prestige of the farmer, to supply adequate social facilities in the countryside and to continue land reforms providing farmers with security of tenure.

A key area is that of extension services. These should be developed to serve the farmers and to meet their requirements and wishes; not to force them to participate in any particular programme, or to carry out the policing functions of animal health and crop disease regulations. The quality of the extension officer is particularly important and should be improved by the provision of better basic training courses. It is important that the advisory services should be able to give advice to farmers, not only on the principal cash and export crops but also on food and

[1] D. G. R. Belshaw: *Planning methods for agriculture in LDC's*, RDR paper No. 81 (Kampala, Makerere University College, 1969) (mimeographed).

subsistence crops. Although the concentration of extension staff will vary from district to district, the aim should be, on average, to provide one farmer-level extension officer for every one thousand farmers, supported, of course, by professional officers at divisional level. The development of farmers' training centres, which have been so successful, should continue to play a key role in the spreading of technical knowledge and leadership qualities among the rural community. The centres should run courses for farmers on particular subjects and for technical staff at different levels working in the field, and additional courses should be given to encourage rural leadership, particularly youth leadership, and to encourage young farmers' clubs.

Research must form the basis for all extension education and training, and in order for these activities to be effective there must be a close link between research workers and farmers. In particular there is an urgent need for more research and teaching at all levels on farm management, extension methodology and the basic subsistence crops.

In addition to policies designed to encourage rural development and create employment opportunities in the towns, other policies could help to reduce unemployment and underemployment. For instance, it should be possible to introduce a public works programme capable of generating rural employment opportunities. And schemes using labour-intensive methods for feeder-road systems, rural buildings, water supply systems and afforestation would raise productivity and employment. Engineers and architects should be made aware of the seriousness of the unemployment problem and encouraged to produce labour-intensive rather than capital-intensive schemes, particularly in construction and similar work. To encourage this the tax system relating to investment incentives should be revised to favour labour-intensive systems instead of capital-intensive systems as at present.

Consideration should also be given to the effect of an incomes policy on employment. The inequalities between salary and wage levels and between the employed and the rural self-employed are large in Kenya and the tendency is for them to grow. These inequalities are obstacles to development and to increased employment; they hamper the necessary expansion of public services, they increase the demand for imported consumer goods and they aggravate the rural-urban migration problem. It is urgently necessary, therefore, to prevent the widening of the income gap between the urban employed and the small farmer, and, if possible, to close it, and to reduce the difference in the level of the average income of salary earners and that of wage earners. The implementation of an incomes policy, which clearly calls for political courage [1], could not work, however, unless the Government enforced it in public and parastatal

[1] Robinson G. Hollister: " Manpower problems and policies in sub-Saharan Africa ", in *International Labour Review*, Vol. 99, No. 5, May 1969, p. 519.

sectors and secured the co-operation of private employers either by agreement or legislation.

A study of the Development Plan for 1970-74 clearly shows that the findings and recommendations of the Kericho Conference have deeply affected government thinking and policies. The key strategy of the Plan directs an increasing share of total available resources towards the rural areas, on the ground that it is only through their accelerated development " that balanced economic development can be achieved, that the necessary growth of employment opportunities can be generated and that the people as a whole can participate in the development process". An important objective of rural development strategy is also to secure a just distribution of the national income, both between different sectors and areas of the country and between individuals. But the Plan, in effect, represents the employment programme to be undertaken by the Government over the period 1970-74; the achievement of the whole Plan is therefore crucial to this employment policy. Recognising that unemployment in Kenya is not the consequence of an inadequate rate of growth in the economy, the aim of the Plan is nevertheless to " expand the economy at a sufficient rate to provide an improving means of livelihood for all the additional people and to create job opportunities for those who are now without any means of livelihood at all ". This does not mean that the Government expects to be able to create wage-paid job opportunities for all the additions to the labour force, for it recognises that there is no realistic rate of economic growth that could achieve this in the near future.

The Plan aims to create wage-earning jobs for approximately 375,000 of the estimated 830,000 additions to the labour force between 1970 and 1974; this implies an average rate of increase in such jobs of over 5 per cent per annum, which is a faster rate than has ever been achieved before. Of these wage-earning jobs, 200,000 should be taken up in non-agriculture and 175,000 in agriculture. This will increase the proportion of wage labour from 25 to 28 per cent over the period and the proportion of non-agricultural wage labour from 47 to 49 per cent. The Plan also aims to provide self-employment outside agriculture for a further 30,000 adults during this period. The remaining 425,000 men and women will therefore have to earn their livelihood as self-employed farmers and hired and family farm workers. The major emphasis of rural development strategy is on the expansion of cash crop and livestock development, which in the past has done a great deal to relieve the rural unemployment problem.

To implement this strategy, the sum of 40 million Kenya pounds, or 20 per cent of the public sector development budget, is to be devoted to the agricultural sector (see table VII). And of these development funds, a much higher proportion will be used for programmes designed to have widespread effects on agricultural productivity and efficiency and involve a larger number of farmers than in the previous planning period. In other words the accent is placed on modernising agriculture on a broad front. Instead of concentrating on land transfers, as in the former planning period, agricultural policies and programmes will be aimed at the small peasant farmer.

TABLE VII. PROJECTED DEVELOPMENT EXPENDITURE ON AGRICULTURE, LAND SETTLEMENT AND CO-OPERATIVES, 1970-74

	K£ (thousands)
Land settlement	5 559
Transfer and development of large-scale farms	3 068
Land adjudication [1]	6 295
Livestock development	4 526
Research	3 217
Agricultural education and extension	2 199
Credit for small-scale farmers and farmers in range areas	4 748
Irrigation	2 526
Sugar	4 108
Tea	1 185
Wheat and maize storage	863
Miscellaneous	1 300
Total	39 594

[1] Establishment of boundaries and ownership.

Of the total agricultural development expenditure of K£39.6 million, only K£5.6 million are allocated to land settlement schemes. This includes a squatter settlement scheme which is designed to settle about 33,000 squatters on farms of less than four hectares and is expected to make a significant impact on the problems of landlessness and unemployment at relatively low cost. A further K£3.1 million will be used for the transfer and development of large-scale farms, many of which are so large that they exceed the capital capacity and management skill of the new tenants. These will be split up into several more manageable units before they are leased to tenants.

Increased emphasis is to be given to the land adjudication[1] and registration programme, which will involve about 7.4 million hectares of land at a cost of K£6.3 million. While the completion of this programme is thought to be an important precondition for agricultural development, and hence increased employment, it can proceed only if certain other conditions are satisfied. For example, farm inputs should be obtainable at reasonable prices and credit facilities available so that farmers can borrow to finance the purchase of required inputs. Farmers must be

[1] Establishment of boundaries and ownership.

helped to improve their farming methods through the extension services and agricultural education and training programmes. The quality of inputs and the efficiency of production techniques need to be improved by continuing research. And, of course, markets must be available for farm products. During the planning period increased efforts are to be made by the Government to bring about improvements in all of these areas.

Some K£2.2 million will be spent on agricultural education and extension and K£3.2 million on research. Up to the present time both agricultural extension and research have tended to concentrate on the more technical aspects of agriculture, such as breeding better varieties of crops and teaching farmers how to improve yields. This work, though essential, has tended to neglect the economic aspect of agriculture—a weakness which has become more apparent as farm profit margins have shrunk, due to unfavourable price changes. For this reason research into farm management and marketing will be expanded and farm management training programmes run for the extension staff, so that farmers can be advised on the business as well as the technical side of farming. Increased attention is also to be given to farm mechanisation research; to identifying more efficient methods of using farm equipment; to studying alternative cultivation techniques; and to testing a wide range of equipment not previously used in Kenya, particularly small tractors.

Supplies of agricultural credit essential to improve productivity and employment capacity are to be increased to K£4.7 million. This sum will be allocated to credit programmes for small-scale farmers and range farmers. The funds will be administered through the Agricultural Finance Corporation (which will supply an additional K£2.4 million from its own resources) and the co-operative movement. The supply of credit would be increased even faster than this but for the difficulties of administering agricultural credit, especially short-term credit to small-scale farmers. A start has only recently been made on a promising co-operative credit programme, and it is hoped that the greater part of short-term credit to small farmers will be handled in this way. However, it will take time for the co-operatives to develop the necessary executive capacity, which means that many small farmers will continue to experience difficulty in obtaining short-term credit in the next few years. Some K£4.5 million will be spent on livestock development programmes to encourage increased output of milk, beef and other livestock products, for which there is a buoyant market. The programme will aim to upgrade stock by increasing the use of artificial insemination services, improve processing facilities, increase the offtake of range cattle, and convert traditional pasturalism into commercial livestock production. As far as irrigated agriculture is concerned, the Plan makes provision for an extension of the area by nearly 2,000 hectares at a cost of K£2.5 million; this will enable Kenya to double its output of rice by 1974 and increase employment.

In order to improve communications in the country, provision for a major road development programme, costing K£43 million, has been made. Many of the improved roads will be of direct benefit to the agricultural sector, while some of them are planned specifically for this sector. For instance, an improved road system to serve recently established schemes is planned at a cost of K£1.6 million; K£1.7 million will be spent on roads to a key development area; and K£3.6 million are to be used for improving roads in sugar-producing areas. A programme has also been drawn up to improve the bulk-handling and storage facilities of cereals, at a cost of almost K£4 million.

Changes in agricultural marketing and pricing policies are envisaged in the Plan, in an attempt both to reduce prices and increase availability of farm inputs and to enable farmers to obtain favourable prices for their products. However, it is recognised that marketing and pricing problems are not easily resolved; for example, where inputs are imported or farm products sold in world markets, it may prove impossible to prevent adverse price changes. This emphasises the need for increased efficiency in agricultural production, in marketing and transportation. To this end yields are being raised steadily through the adoption of better production methods and, as regards maize especially, through the increased use of hybrid and synthetic varieties. The prices of certain inputs, such as phosphatic and nitrogenous fertilisers, are already being subsidised; it may be necessary to subsidise the prices of other important inputs in future. Prices paid to farmers for wheat and maize have also, in recent years, been subsidised. However, the Government does not intend to continue this type of price support, as it leads to an imbalance between supply and demand; instead its aim is to bring ex-farm gate and export prices more into line.

The policies and structures of the agricultural marketing system are to be subject to scrutiny and changes made where appropriate. For example statutory boards, though heavily involved in agricultural marketing, may not in some instances be the most suitable type of marketing organisation or they may have adopted inefficient marketing policies. It is expected that some measure of decontrol will be introduced into maize marketing in order to reduce the share of the final price being absorbed by the marketing system. Likewise, present arrangements for marketing cotton appear to be unreasonably expensive and the operations of the Cotton Marketing Board are now being examined with a view to reducing the cost. Co-operatives are also much involved in agricultural marketing and the Government intends to increase its efforts to develop the co-operative movement. A high proportion of co-operatives have been inefficiently managed but serious efforts are now being made to remedy this.

Primarily because of the problem of finding adequate markets, it is only possible to expand the production of a limited number of agricultural products. Some decline in the level of production of sisal is expected, because of the competitive effects of synthetic products on world market prices. For the same reason it will probably not be possible to expand pyrethrum production. Relatively small increases in the output of coffee, wheat and livestock products are budgeted for. But rapid expansion will only be possible for maize, rice, tea and sugar: to encourage this expansion K£2.5 million will be invested in irrigation schemes producing rice; K£4.1 million will be spent on the sugar industry, increasing the area under sugar and processing capacity; and K£12 million are to be invested in small-scale tea production, increasing the area under tea and the number of tea factories, which is expected to improve production by 50 per cent by the end of the planning period. The volume of marketed maize is expected to increase by 70 per cent by 1974, largely through the growing use of synthetic and hybrid maizes.

Until now extension advice has concentrated on technical problems of agricultural production with little regard for its impact on the farm business as a whole, including full utilisation of labour. For example, extension workers advising farmers on the best methods of cotton production may have encouraged timely planting, since this leads to increased yields. However, in some situations this may not have been the best advice, for time spent on earlier cotton planting might have been better spent on a more profitable, alternative enterprise. The extension worker needs to be able to take an over-all view of the farm business before he can appreciate this. A reorganisation of the extension service will attempt to achieve improvements by training extension workers to give advice on a wide range of agricultural subjects. In-service training programmes for extension staff will be expanded considerably, especially in farm management, though they will be hampered by lack of suitable farm management data and experienced farm management specialists.

In 1967 wage earners in non-agricultural activities earned an average of K£310 per annum, while agricultural workers, mainly on large farms, earned K£67 per annum and workers in rural non-agricultural occupations earned only K£43. The gap between the earnings of urban and rural workers is probably larger than it was about a decade ago; this has tended to increase rural-urban migration and swell the number of urban unemployed, particularly in Nairobi, bringing acute social and public health problems in its train. The imbalance between urban and rural incomes will be tackled by the Government by means of taxation; by improving prices paid to farmers where these are within government control; and by introducing an incomes policy which regulates urban wages in a way consistent with the interests of the nation as a whole. Such a policy should clearly try to, if not reduce, at any rate slow down the rate of increase in urban wages; the problem is fraught with political difficulties and determined trade union opposition. In practice the Government proposes to reduce present salary differentials in the public service, which stem from colonial times, by placing a strict limit on increases in that sector until the process of levelling upwards has allowed the incomes of other sections of society to catch up.

On the basis of a recommendation of the Kericho Conference, the Government has recently set up a Rural Development Programme, allocating to it K£2.5 million in addition to the expenditure already noted. Its basic objectives are to increase incomes and employment, particularly for the school-leaver, and to improve the quality of rural life.[1] It is intended to enable smaller farmers to break out of subsistence cultivation and larger farmers to develop and provide employment. The initial thrust of the programme will be to improve agricultural production and marketing; a concentrated extension effort, centring on farm management and credit, will be mounted for selected farmers. Through these means attempts are to be made to increase productivity of food crops both in order 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. Institutional arrangements for co-operative marketing will be rationalised, cutting overheads by reducing the number of societies and collection centres, and co-operative education will be undertaken. Infrastructural developments comprised in the programme include new water supplies and improved roads; larger social halls constructed through self-help with some official assistance; environmental health projects at a number of market centres; and the further development of primary and nursery schools and medical services—though this will be financed by normal development expenditure.

As the programme proceeds and problems and opportunities are identified, special experimental measures will be tried. These may be related to agriculture, school-leavers and training, transport and marketing, rural industries and diversification, consumer goods supplies, adult education, and the supply of written materials. Tentative proposals include village polytechnics, rural industrial development centres, the manufacture of handcarts and bicycle-trailers to relieve women of headloads and to facilitate the marketing of food crops, home-curing of bacon, local bakeries, and the encouragement of more extensive employment of school-leavers in commercial distribution. While it is intended that many of the production aspects of the programme will be implemented, in the initial stages, by concentration on a number of individuals, it is most important for the community at large to be informed of what is being attempted, since the objective is to develop patterns of development which can be copied by every farmer in the community. The community will also have an important part to play in the social aspects of the pro-

[1] For a similar approach see ILO: *The ILO and rural development* (Geneva, 1969) (mimeographed document D.40.1969).

gramme, particularly by self-help contributions to dip construction, water supply, educational, medical, health and social projects.

Before launching the programme on a countrywide basis it was decided to conduct a pilot experiment. Fourteen pilot areas have been selected to represent a cross-section of development problems in the country. Three principles are to be observed: (1) the programme will be executed within existing government machinery; (2) projects are to be realistic, so that results from pilot areas can be extended to other similar areas; and (3) effort will be mainly concentrated on better employment of existing resources, additional expenditure being used to " close the gaps ". The planning of the programme will be on a decentralised basis and it is hoped that, after five years, results from the pilot areas will be available for evaluation and for formulation into a rural development strategy for the whole country.

Conclusions

While accepting the fact that it is not possible to create employment opportunities which will fully absorb additions to the workforce up to 1974, the strategy of the Development Plan first of all focuses on the sector with the greatest labour absorptive capacity, i.e. agriculture, and secondly locates investment in those parts of the agricultural sector which are most likely to be effective employers of labour. The Plan must obviously consider other political factors such as reducing regional income inequalities, keeping down food prices and so on, but its primary objective, in the agricultural sector, is to increase incomes and employment. It has wisely been decided that this is most likely to be achieved by concentrating development effort on the small farm sector and, within that category, on private small holdings. The cost of irrigation schemes rules out any major extension of these, even though they have a high labour absorptive capacity. Other types of settlement scheme are relatively costly and only moderate employers of labour and, in any case, the amount of land available for settlement is now limited.

The intensification of private small holdings is rightly selected as the most effective means of grappling with the employment problem. There will, of course, be a limit to the effectiveness of this policy. A number of factors will tend to restrict the extent to which production can be intensified on the holdings. For instance, the capital needs of establishing and bringing to maturity perennial cash crops are high for the farm family. Credit schemes will be of help here, but only to farmers who have a title to their land—for use as a collateral. It is for this reason that the Plan includes a programme of accelerated land registration. However, it is interesting to speculate that the short-term gains from this policy of creating individual ownership of land by small farmers may perhaps be offset, in the decades ahead, by the emergence of a " small farm " problem as large and intransigent as that in some European countries today. Another limitation relates to the difficulty of finding markets for additional production—particularly of export crops. Coffee expansion is already restricted and conditions of over-supply seem likely to affect other internationally traded agricultural products. A further difficulty is that intensification of production, particularly by the inclusion of cash crops—which are very labour-demanding—increases peak seasonal demands for labour.[1] The implication is that many of the increased employment opportunities will be for casual or part-time jobs. MacArthur believes that most of the additional jobs on small holdings will be casual and therefore " it is unlikely that the development of Kenya's small farm sector will ever provide opportunities of long-term stable employment for a large labour force ".[2] Two factors are relevant here. First, as the prosperity of Kenya small holders rises, they quickly substitute hired labour for their own family labour (their income elasticity of demand for hired labour is high) and this implies a constantly increasing demand for permanent hired labour. And second, it is precisely casual (or seasonal) employment which is required to alleviate the major rural problem of underemployment.

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[1] E. S. Clayton: *Economic planning in peasant agriculture* (Wye College, University of London, 1970).

[2] MacArthur, op. cit., p. 127.