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Forces Facing the Future of Kenyan Agriculture

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Abstract: Kenya's population growth rate of 4 percent per year is considered to be the single most important force that will face the future of Kenyan agriculture. This paper attempts to show that the high population growth rate will result in land scarcity and lack of employment and food.

Introduction

Agriculture is the key sector in Kenya, contributing nearly 35 percent of the gross domestic product, 70 percent of all exports, and employing 75 percent of the working labour force. Many forces will affect Kenyan agriculture over the next 20 years, but the most important is population growth. The growing population will exert pressure on land, food, and employment. Kenya's current population is 18.1 million. At the current rate of population growth (4 percent per year—the highest in the world), Kenya's population will double by the year 2000.

Structure of the Agricultural Sector

The most useful classification of land potential in Kenya was devised by Pratt, Greenway, and Gwynne (1966). Their classification, in terms of ecological land units derived from combinations of climate, soil, and topography equated with vegetation types, is given in Table 1, below. Six broad ecological zones are distinguished. Kenya's good agricultural land, defined as high and medium potential land, is about 10.6 million ha (19 percent) and the remaining 46.6 million ha (81 percent) is low potential.

A dichotomy between small-scale and large-scale farms characterizes the production structure of Kenyan agriculture. The farming population comprises 85 percent of the total population. Among the farming population, less than 6 percent are pastoralists living on the 20 percent of Kenya's land that is unsuitable for cultivation, and 2 percent are large-scale farmers on farms of over 20 ha. The great majority of farmers are smallholders in high and medium potential areas where agricultural production is relatively high and well established.

Table 1—Ecoclimatic Land Potential: Classification of Agricultural Land in Kenya

Zone*	Area ('000 ha)	Percent of total
I—Afro-Alpine	80	0.1
II—High Potential	5,300	9.3
III—Medium Potential	5,300	9.3
IV—Semiarid	5,300	9.3
V—Arid	30,000	52.5
VI—Very Arid	11,200	19.6
Total	57,180	100.0

[*I—Very high altitude above forest lines. Mostly barren with use limited to water catchment and tourism. II—High moisture, mostly high altitude. Used for forest, coffee, tea, pyrethrum, intensive livestock, maize, and cotton (at lower altitudes). III—Generally lower moisture and altitude than Zone II. Used for mixed farming—hybrid maize, wheat, barley, cotton, groundnuts, pulses, oilseeds, cashews, coconuts, and livestock. IV—Marginal agricultural potential, mostly limited to subsistence crop farming, livestock, sisal, and wildlife. V—Moderate rangeland potential, mostly limited to wildlife and livestock. VI—Low potential rangeland, limited to nomadic pastoralists. Source: Based on Pratt, Greenway, and Gwynne (1966).]

Increasing Pressure on Land

Only about 9 percent of the total land area is high potential; another 9 percent is medium potential. Between 1969 and 1979, the large share (70 percent) of rural population growth took place within the high and medium potential areas (Goldman and Muthaka, 1984). This resulted in the land scarcity as well as the land base becoming progressively subdivided. The per capita availability of high and medium potential land fell from 0.83 ha in 1962 to 0.42 ha in 1980. Projections show further reductions to 0.21 ha by the year 2000. The situation is even more desperate given that the distribution of land in these areas is skewed.

Population pressure in high and medium potential areas and privatization of land have led to landlessness. This landlessness has triggered off a large wave of migration, mainly to the large farms (as squatters) and the semiarid areas. The landless have brought with them technologies that are inappropriate for semiarid areas, resulting in conflict with traditional pastoralists.

The population growth has had a negative impact on the environment by greatly increasing the pressure on forest reserves. Vast areas have been cleared to make way for agricultural production. Forested areas have also been denuded as a result of the insatiable demand for charcoal.

Food Supply and Nutritional Status

On average, per capita availabilities of proteins and calories have remained above the FAO/WHO recommended averages (Mwangi and Migot-Adholla, 1984). This does not imply, however, that every family is adequately fed. Crawford and Thorbeche (1980) have estimated that one-third of rural households are poor. Given that poverty and deficient nutrition are closely linked, then one-third of Kenya's rural population is apparently exposed to risk of deficient nutrition. In fact, food poverty is widespread and huge inequalities in wealth and income are all too apparent (Sharpley, 1984).

Until 1978, production increased faster than population; towards the end of the decade, the expansion in exports and domestic agriculture lagged far behind the annual population growth rate of around 3.9 percent. Since 1980, production increases for all commodities except sugar has failed to keep pace with demand, resulting in huge imports of food. Kenya will thus need to pay much more attention than in the past to increasing food production in order to minimize food shortages such as were experienced in 1979/80 and 1984.

Population Growth and Employment

The high population growth rate (which will lead to a doubling of the population by the year 2000) will also double the labour force. The labour force is projected to rise from 6.4 million in 1980 to 14.6 million in the year 2000 (Government of Kenya, 1983). Most of the people who will then comprise the labour force have already been born.

Kenya's total modern sector wage employment in 1982 amounted to just over 1 million or 15.1 percent of a potential modern sector labour force of 6.9 million by the year 2000. The remainder of the labour force would still be left to find employment outside the wage sector, mainly in smallholder agriculture.

Future Options

In the next 20 years, one would not expect a rapid decrease in Kenya's rate of population growth. Consequently, the problems of land scarcity, employment, and attainment of a higher rate of growth in food production are going to be important long-term policy issues.

Measures policy makers can take to alleviate the stress of these problems include increasing yields from current levels, changing cropping patterns, subdividing large farms, opening up new lands, improving production in arid and semiarid lands, reclaiming land by drainage, irrigating, and controlling population growth. Most of these measures are complementary over the long term and none alone can have a significant impact on the three issues of land scarcity, employment, and food production.

Most of the potential for increased output and employment is in the high and medium potential areas. Current yields of crops in these areas are low. Increasing yields—especially through

intensified use of inputs such as chemical fertilizers—will substantially increase food production and employment but will not solve the problem of land scarcity. Increased resources and organizational capacity—especially in extension and research—are also needed.

Changing cropping patterns can increase labour demand substantially (Collier and Lal, 1979), especially in labour intensive crops such as tea, coffee, and hybrid maize. Changing cropping patterns is limited by such factors as land quality, product demand, the need to fit crops into the farming system, inadequate supporting services, and consumption patterns. The problem of land scarcity is not solved by changing cropping patterns.

Subdivision of large farms (except ranches and plantations) would result in significant employment creation and reduction in land scarcity. Tidrick (1979) has estimated that subdivision of existing large farms would create approximately 870,000 extra jobs. However, the impact on output is not as clear. The major limitation to the strategy is the political unfeasibility of redistribution.

The strategy of opening up new lands would be implemented through the clearing of forests. Although this measure could substantially reduce land scarcity and generate some employment and food production, it is controversial because of conflicting uses of forest, such as for harbouring wildlife or for tourism, and unknown environmental effects of replacing forests with permanent crops.

The arid and semiarid areas have no potential for generating substantial output and employment. The development strategy in these areas should be to try to raise the living standards of the existing population rather than to try to expand production through immigration (McCarthy and Mwangi, 1982).

Irrigation and drainage afford substantial potential for the expansion of Kenya's cultivable land in the medium and long term. The potential area for irrigation is estimated at about 600,000 ha, while the country's potential area for reclamation through drainage is also as much as 600,000 ha. Less than 5 percent of irrigation and 1 percent of drainage potential has been developed (Toskoz, 1979).

Toskoz (1979) estimated that the development of 200,000 ha of drainage, covering only one-third of Kenya's potential, would cost K£1,400 million and generate an equivalent full-time employment potential of nearly 1.3 million people.

Irrigation could also provide substantial production benefits. The projected value added under the Bura Project is around K£450 per ha (in 1979 prices). At this rate, the value added would be K£270 million if the potential area were 600,000 ha.

However, the employment and production potentials of irrigation must be treated with caution for two basic reasons. First, irrigation is enormously expensive. The latest cost estimate of the 6,700 ha Bura Project is K£63 million, or about K£9,400 per ha. This project is particularly expensive, though, because of high infrastructure expenditures, all of which would not be required in a less remote area. The second reason for caution in considering the potential of irrigation development is the technical and organizational problems, especially due to lack of qualified technical staff. For these reasons, the development of irrigation as a major source of production and employment is of dubious potential. Drainage development has more potential relative to irrigation, especially due to its low cost per ha, but the main factor limiting its development is that the country has little experience in drainage and valley bottom development.

The measures discussed above will achieve little in solving problems of land scarcity, employment, and food production unless population growth rate is contained. This underlines the need for population control.

Kenya was the first African country to officially adopt a population policy, in 1967. This policy, despite the large amount of money spent on the programme, was not successful. The government realized this and, in 1982, formed the National Council for Population and Development. The Council is expected to prepare national guidelines on population control. The programme will intensify the education and information of the rural people as well as provide family planning services. Education for women will be given special attention in the new programme.

For the new programme to succeed, it will have to avoid the pitfalls of the old programme. The new programme has to be based on strong and widespread support by political leaders at national and local levels. The major religious organizations will have to be involved and support the programme wholeheartedly; already some disagreements have occurred. The ruling party should also be involved both nationally and locally. The general health service should be involved in the implementation of the programme. The mass media must be involved, especially in showing the immediate benefits for the individual family.

Conclusions

The measures discussed above as possibilities for solving the three main problems of land scarcity, employment, and food triggered by the very high population growth rate will compete for scarce investment funds and human resources, which, in turn, will call for hard choices to be made. Whatever choices are made, the policy makers should still be aware that the very high population growth rate will remain the single most critical issue in the country's development. If the population growth is not contained, the economic development of the country will be endangered.

Note

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