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Food and Economic Development

by

E.B. Riordan

The attached paper has been prepared for the forthcoming Working Party on a Food and Nutrition Policy for Uganda. It is hoped to discuss and amplify those parts of the paper of particular interest to the Rural Development Seminar. The author would be grateful for comments and suggestions from those unable to attend the seminar.

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WORKING PARTY ON A FOOD AND NUTRITION POLICY FOR UGANDA

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FOOD AND ECONOMIC DEVELOPMENT IN UGANDA*

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At present the large part of Uganda's population which works on the land probably uses nearly half its time and half the cultivated land to provide the domestic food supply. The small part of the population mainly dependent on wage earnings spends a large part of these wages on food. In both groups, call them rural and urban, defective diets are to be found. Raising this standard of living is the aim of economic development and the planning process. The standard of living for those working the land increases with their control over resources and the productivity of these resources in both food and non-food crops. Higher productivity of resources used in providing foods for the present diet can release some of the land and labour etc. for activities that will increase income and improve the diet. It also follows from the opening statement that the value and nutritional significance of wages and wage increases for town workers are dependent on the level of food prices and thus the nation's performance in food production. Further in a developing country efforts to reduce the stock of resources needed to maintain present food output usually have to be coupled with efforts to feed an increasing population and to supply cheap food to the increasing part of this population living in towns. These challenges to the food economy of Uganda will now be discussed in the three parts of this paper covering: (a) the short term considerations covering the use, or distribution, of current food production, (b) medium term considerations of increasing the productivity of resources in food production, and (c) long term problems due to increasing population.

Improving Food Distribution

It might truly be said that there is enough 'food' produced in Uganda, but that some of this 'food' is of the wrong type, some is wasted and that too

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*. Mr. D.G.R. Bolshaw and Mr. M. Hall kindly commented on the first draft of this paper.

1. Evidence for the opening statements is discussed in Section B below.

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little is received by some people, in some places and at some times.[2] Though these matters will be considered in more detail in later papers, we will now make some general observations.

The first defect in the food supply stated above was in its composition for in some areas there is too little proteinaceous food consumed, especially protein of animal origin, while there is often more than enough of the starchy staples. A change may also be desired in the distribution of food between people, between places and over time. Put in another way the problem is one of changing peoples' ability and willingness to pay for food in particular circumstances. The same result may be achieved by reducing production costs of certain foods in particular circumstances. Thus the matter may be divided into the economists' considerations of demand and supply conditions.

Let us first examine two topics on the demand side. First the plight of a poor agricultural household in an area short of food. This household has not produced enough food to meet its needs nor has it enough wealth to make good its diet by buying food at the ruling high prices. Government relief measures may lessen the immediate problem for this household but the fundamental and time consuming solution is through work to raise the household's agricultural output, increase its reserves of food or money, and programmes to reduce acute food shortages and high prices. With these changes in food production and marketing this household would eventually be able to <u>afford</u> an adequate diet even in bad years. The second case is that of a household exposing a young child to the risk of protein malnutrition through ignorance of the child's illhealth, dietary and psychological needs and how to meet them.[3] Again, given time the situation might be changed by education and a lessening of food taboos effecting the household's willingness to afford protective foods. Meanwhile the child might be kept alive by a subsidised distribution of protective foods.

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2. Burgess. A.P. "Calories and Proteins Available From Local Sources for Uganda Africans in 1958 and 1959", <u>East African Medical Journal</u> 39, 449-63 (July 1962)
   MacDonald, A.S. "Some Aspects of Land Utilisation in Uganda" <u>East African Agriculture and Forestry Journal</u> 29, 147-756
3. Farmer, A.P. "Malnutrition an Ecological Problem" <u>E. Afr. Med. Jr.</u> 37, 399-404 (May 1960)

   Note: The risk of Protein-Calorie Malnutrition carries with it the risk of permanent damage to the child's brain.

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These simple examples point to some of the difficulties of Food and Nutrition policy formulation. These difficulties may be briefly stated as follows:

1. Expansion of programmes to improve current nutritional welfare may aggravate the future situation by adding to the population while causing a contraction of programmes designed to strike at the root of the problem.[4]

2. Improvements in the country's nutritional condition may increase people's ability to work,[5] without leading to an increase in productivity or levels of output.

3. Development planners are likely to hold that development targets should be few to avoid spreading resources too thinly while at the same time complementarities between activities should be exploited.

Yet achieving the nutritional target is more and more dependent on achieving other targets, the longer the time period considered.

The policy difficulties for Uganda are particularly acute as current programmes and development plans seem to be dangerously ambitious in expenditure on health and education.[6] Thus in the short term, policy proposals, especially in health and education might be limited to changes in the direction of activities avoiding overall expansion of Government commitments.

A rise in the demand for a certain foodstuff, for example a proteinaceous food, unmatched by a change in the conditions of supply may tend to raise the prices of these foods and thus weaken the drive for increased consumption. Milk consumption in Buganda illustrates the converse case where improvements in milk production using exotic cattle have increased consumption both in dairying households and the surrounding area.[7]

An incentive to increase output of a foodstuff may be provided by one or more of the following changes.

a) Increased output from the same resources of land, labour, seed etc.

b) A shift in crops labour requirements away from times when farming

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4. In the 1959 Census of Uganda mortality rates were: Infants 160 per 1,000, 1-2 years 60 and 2-3 years 30 per 1,000.
5. Food and Agriculture Organization: Nutrition and Working Efficiency Rome: F.A.O. 1962. Freedom from Hunger Campaign. Basic Study No. 5.
6. Please See Appendix Table A provided by Mr. D.G.R. Belshaw.
7. Uganda, Department of Agriculture. An Economic Survey of Dairy Farming in Uganda, Entebbe 1966. pp. 21 - 22.

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activities are at a peak.

c) Increased reliability of output, for example dependable crop yields.

d) Reduced losses in processing after harvest such as storage or preparation for the table. To emphasise the importance of this topic, A.J. Wakefield, sometime director of Agriculture in Tanzania, Compares the effort to raise output 5-10% with the scope for reducing storage losses running at 20-30%.[8]

e) Reduced costs to farmers and upcountry traders of trading in foodstuffs. This trade is at present affected by numerous regulations, foremost being the high cost of produce trading licences, the inhibitions imposed by Legal Minimum Prices above prices that would be rule in their absence, and the risk of sudden restriction or liberation of the movement of foodstuffs both within the country and especially within the East African Common Market. The emergence of areas specialising in certain food crops would decrease the sparseness of this trade in these areas and enable either a reduction in the sparseness of traders or a reduction in marketing charges. Anything tending to reduce marketing charges will among other things, tend to reduce the degree of price fluctuations and increase the scope for specialization in agriculture, a topic for part (b) below.

f) Wholesale prices which are either more reliable or higher.

g) An adverse change in a competing crop or other farming activity.

Some of these changes might be wrought by means already available but requiring promotion by extension work, executive action or legislation. Other changes, like increasing yield reliability might not be easily altered in the short term, while hasty action to reduce marketing difficulties may infact so disrupt trade as to reduce farmers' interest in producing for the market. Thus some of the burden of changing the composition of food production falls on medium term policy.

The problem of distributing food so that it reaches everyone in a fairly even flow throughout the year is often great in developing countries.

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8. Wakefield, A.J. (ex Director of Agric. Tanganyika) "The Practical application of a Nutrition programme", in Report of 2nd Inter African Conference on Nutrition (Gambia 1952), London, H.M.S.O. 1952 p.335.

Prices in the months of hard work just prior to harvest are often considerably above those at other times of the year.[9] This is found in price data, in discussion of the farming year emphasizing the 'hungry months' and hinted at in seasonal patterns of kwashiorkor cases etc.[10] It has been argued that the occurrence of acute food shortages before harvest are probably not a regular and foreseen occurrence in peasant households but arise from unusual harvests and unexpected calls upon stored food.[11] Yet the risk of losing stored food by theft or deterioration in store coupled with a high rate of interest, or time preference, would squeeze to the minimum the amount of food set aside for future consumption. If these same factors are at work in the commercial part of the food economy, prices will tend ot rise steeply during the season and may reach exceptional heights prior to harvest. Consideration of seasonal food shortages leads to the problem of recurrent entreemes of either shortage or glut. The two problems are closely connected as the impact of small or late harvests is greatest in the months of seasonal scarcity. Similarly the task of lessening these difficulties may be approached in the short term by attention to the storage and marketing of seasonal food crops.

The business of food storage in Uganda does not seem to have received much attention. Crop deterioration, even in commercial stores, is believed to be considerable even though some of the causes of loss have been studied and control measures recommended.[12] The scope for reducing shortages by transport between areas rather than famine reserve stores is related to the size of differences in crop scarcity, the degree to which farmers have entered the exchange economy and can save with money, as well as the cheapness of transport and the efficiency of traders, especially the state of information on

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9. Please See Appendix Table B.
10. Burges, H.J.C. and R.F.A. Dean, "Protein Calorie Malnutrition in Uganda", E. Afr. Med. J., 39, 357 -416 (1962). The authors report the number of malnourished children in every 1000 children under 6 years old attending dispensaries in Busoga, Bukedi, Bugisu, Ankole and Kigezi. In most of these districts the relationship between the pattern of food supplies and cases of kwashiorkor and Marasmus is noted. Kigezi seems to be the exceptional as there is no obvious seasonal pattern in the data.
11. Miracle, M.P. "Seasonal Hunger: A Vague Concept and an Unexplored Problem". Proceedings of the 1958 Conference of the Nigerian Institute of Social and Economic Research. Ibadan, 1959.
12. Uganda, Storage of Agricultural Produce by J.C. Davies, Entebbe, 1962.

current market conditions. The occurrence of unusual scarcities in East Africa also appears to be a neglected field of study.

In a study of the existing arrangements for food crop marketing in Uganda, Anne Martin judged that the trading system was reasonably efficient and responsive to market conditions.[13] The adequacy of the transport system was also noted.[14] Yet the efficacy these arrangements for smoothing out supplies are taking advantage of differences in agricultural productivity between areas by trade in foodstuffs is probably reduced by a number of government measures. The movement of food between districts in Uganda can, for instance, be prohibited[15] and exchange between East African countries to meet food shortages is more commonly prohibited than not.[16] With the improved communications of today, regulations like these tend to hinder the smoothing out of supplies both by decree and by making the activity unprofitable through increasing the risks and other costs of production and trade. Large fluctuations in the scarcity and price of food, especially food grains, also bear on food productivity as this will be seen in the following consideration of policies for the medium term.

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13. Martin, A. The Marketing of Minor Crops in Uganda. London, H.M.S.O. 1963, pp. 23 to 70.
14. ibid p. 23.
15. ibid pp. 62 and 63
16. Belshaw, D.G.R., "Agricultural Production and Trade in the East African Common Market" in Leys, C. and P. Robson. Federation in East Africa: Opportunities and problems. Nairobi, Oxford University Press, 1965, pp. 90-92.

Food Productivity.

"A nutritional programme must preserve the balance between production for local consumption and production for export within the capacity of national resources" B.S. Platt.

In discussing Food and Nutrition policy for the medium term, up to say 1981, three considerations seem relevant:

(a) increased urban demand for food

(b) a shift in demand from starchy staples towards 'protective foods' like milk and eggs.

(c) the dependence of rural development on changing the methods of food acquisition.

Thus this discussion will first consider the prospective demands on the food economy and then deal with changes on the supply side.

Urban demand for foodstuffs is likely to rise throughout the foreseeable future due to a rise in urban population and higher wage rates.

Table 1

Projected Urbanisation in Uganda 1959-1981

Year	Kampala and Jinja	Other towns	Total Urban Population	Total Population	Urban Proportion
	'thousands'				Per cent
1959	164	162	326	66,500	5.0
1966	227	218	445	7,500	5.9
1971	329	291	620	8,800	7.0
1981	583	517	1,100	11,400	9.6

Source: Work for Progress, Uganda's Second Five-Year Plan 1966-1971 p. 5 Table 3.

Note : From Uganda Census 1959, African Population, p. 17, the only valid comparison that can be made between town populations in 1948 and 1959 is for greater Kampala where the population increased from 47,487 to 91,837, an increase of over 90%

The change in urban population shown in Table 1 indicates both a rapid rise in urban demand for foodstuffs and a fall in the relative numbers of workers in the food producing sector. This projection of a 40% rise in the population of Kampala and Jinja then has to be compounded with the rise in wage rates giving an overall increase in employment earnings of 51½% by 1971[17]. The effect of these higher earnings on food purchases, tends to be greatest for the lower paid workers who are also intended to be the main recipients. Thus the character of forthcoming increases in urban demand may be judged from the following calculations covering the class of employees who in 1964 eanred less than one hundred and fifty shillings a month. At that time this class included over half of the African employees in and around Kampala[18]. Further the planned rate of wage rise for this group is 3.5% a year or a total rise of 18.8% between 1966 and 1971[19]. Thus for over half of Kampala's working population employment earnings may increase by 67% by 1971. A lot of this increase in employment earnings is likely to be spent on food, especially the protective foods (Table 2). Further, results from a similar survey in Nairobi have been used to show that a 10% rise in earnings is likely to be accompanied by a 7% rise in food expenditure where prices do not change[20].

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17. Uganda, Work for Progress, Uganda's Second Five-Year Development Plan 1966-1971, Entebbe, Government Printer 1966, p. 148 Tanle 35.

18. Uganda, Enumeration of Employees, June 1964, Entebbe Government Printer 1965, Tables 8 and 9.

19. Uganda, Work for Progress, op. cit. p. 149

20. Kaneda, H. and B.F. Johnston, "Urban Food Expenditure Patterns in Tropical Africa," Food Research Institute Studies, 2, 263

Table 2

Food Expenditure Patterns African Unskilled Labourers

Kampala

1950-1953, 1957 and 1964

Date of Survey	Total Expenditure Per Household	Expenditure on Food [1]	Price Index [2] 1957 = 100	% spent on food [1]	% of Food Expenditure on starchy staples [1]	% of Food Expenditure on meat and fish
	shillings a month					
Sept. 1950	41.34	23.68	...	57.3	45.9	22.4
Sept. 1951	38.41	23.74	91 [3]	61.8	47.6	21.3
Sept. 1952	43.50	...	91 [3]	64.9	50.5	...
Sept. 1953	55.13	35.80	157 [3]	64.9	52.8	17.8
Feb. 1957	77.39	45.09	99 [4]	58.3	46.7	22.8
Feb. 1964	139.04	79.19	101 [4]	50.1	35.8	26.9

1. Uganda, The Patterns of Income, Expenditure and Consumption of African Unskilled Workers in Kampala, a series.

2. Uganda, Index of Retail Prices in African Markets, Kampala, base year 1957 = 100. Food items account for 70% of the data in this index, the weight for each food item being derived from the 1957 survey cited above.

3. June figure

4. February figure.

Within the food group milk expenditure rose 100% and expenditure on meat and fish 8% for every 10% rise in earnings, while expenditure on starchy staples rose 1.8% [21]. Table 2 indicates that approximately the same pattern may hold for Uganda but neither set of figures is very reliable.

These various estimates and projections indicate that if prices are assumed to remain unchanged the rise in food purchases by 1971 will be between 67% for milk etc. and 45% for the starchy staples. However should the prices of starchy staples as a whole rise, expenditure on protective foods is likely to fall. This result is hinted at in Table 2 where in 1953 the stables, especially matoke, were expensive. Rising food prices would in addition hamper development by increasing the cost of government services

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21. ibid. p. 263.

such as schools and hospitals. It is interesting to note that food prices did not rise appreciably during the prosperity and urbanisation of the 1950's

Farmers needs also affect the course of development. The notorious need for cattle interfers with livestock development. Farmers consumption of their own crops tends to cause fluctuations in the quantity offered for sale which for exceed fluctuations in yield. This is primiraly due to the arithmatic of on economy where most of the households are self sufficient in foodstuffs.[22] In this case it is the small surpluses of a large number of producers which provide grain for town markets. The variability of the quantities available for sale may be further increased by farmers and traders speculating on a price and holding grain off the market. The difficulty of obtaining a stable market in food crops in a developing economy is also connected with the farming practice of insuring against small crops by always planning to produce more food than is required. This has been called the 'Normal Surplus'.[23] The size of the surplus is likely to affect the size of harvest celebrations, the scale of hospitality and the amount wasted in these and other ways. The quantity of produce for sale also depends on the surplus.

This subsistance system helps survival but hinders progress. Its self sufficient practices are reinforced by a variety of regulations on food production storage and marketing, for example those made under 'The Produce Marketing Act'[24].

Is it now fairly safe for Uganda to accelerate the move from self-sufficiency to the free exchange of food crops? The direction of movement would be towards specialisation and higher productivity in food crops for

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22. If every agricultural household usually consumes 90% of its output and sells 10%, being say 10 baskets of grain, and if production falls 5% or 5 baskets of grain, only about 5 will be readily sold, being a halving of market supplies. In fact the consequent price changes will alter the picture but the effect of yield on supply remains.

23. Allan, W., The African Husbandman, Edinburgh, Olives & Boyd, 1965 ch. 4

24. Uganda, Laws of Uganda, Revised Edition 1964 ch. 243

domestic consumption enabling a similar change in other parts of agriculture.[25] An associated change would be for households to safeguard their food supplies by reliance on the market rather than using land and labour to produce that part of the crop that is 'normally' wasted. It is even possible that cattle might cease to be regarded, among other things, as four legged banks

Despite the potential benefits of developing a market oriented food economy, the change is likely to be slow as long as farmers find food produce markets unrewarding and prone to price fluctuations between seasons that exceed fluctuation in yields. At present there appears to be a need to study the costs and benefits of various ways to accelerate the growth of the food stuffs market.

The main argument over increasing food crop productivity seems to concern its desirability and priorities rather than the possibilities for improvement. There seems to be a strong case for endevouring to raise the productivity of crops that will make good nutirtional deficiencies. Higher productivity in one crop, including greater output reliability, lower wastage etc., increases the incentive to produce this crop compared with competing crops and leisure activities. In addition where increases in the productivity of a crop are considerable and widespread the gain may be transfered to urban consumers through a lower price for this product.

Increased productivity in the starchy staple group of crops would enable a reduction in the large amount of agricultural resources devoted to producing the national diet.

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25. For an examination of this topic please see, Britain, Report of the East African Royal Commission, 1953-55, London, H.M.S.O. 1956.

Table 3

Distribution of Farm Resources between Food and Non Food Crops

Resource	Area	Source of data	Percentage of resource in Food Crop Production
Cultivated acreage	Uganda	Census[1]	69%
	Lango	Census	69%
	Lango	9 case studies[2]	69% range 59-81%
Days of work by men	Lango	9 case studies	42%
by women	Lango	9 case studies	75%
Hours of work	Lango	Survey[3]	43%

Sources:

1. Uganda Census of Agriculture, Vol. III, Size of Holding and Crop Acreages, Entebbe, Government Printer, 1966, in press.

2. M. Okai, "Some Aspects of Land Use in the Agriculture of Lango District of Uganda", Kampala, Makerere University College., Department of Agriculture, (1966) mimeo. R.D.R. 24. pp. 14.

3. D. Forbes Watt,"Interrelationships and the Allocation of scarce labour between competing cash and food crops (subsistance) activities in a peasant economy", Kampala, Makerere University College, Economic Development Research Paper 104 (1966) p. 13.

These released resources would then be available for meeting the Plan target of increased exports of food and non-food crops.

Two means of increasing productivity of nutritional interest are ways to reduce the labour of food preparation and increasing the cultivation of cassava. Some of the resources saved by cultivating the highly productive cassava plant might be used to make good its nutritional shortcomings.[26]

At the moment the significant point about a proposal to increase productivity is often its effect on the amount of work done at the busy time of the year and its cost. These proposals will often increase output per acre too but this becomes the major consideration when land becomes scarce. The next section will examine where and when land shortage might put the provision of food and economic development in a straight jacket.

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26. Jones, W.O. Munioc in Africa, Stanford, Food Research Institute, 1959, ch. 10 and p. 273 et. seq.

Land Availability

"The ratio of food resources to population determines the whole nature of a civilisation" W.H. Forbes [27]

Although Uganda is generally fortunate in the present ratio of food resources to population, the current adverse change in the ratio may take a long time to reverse. On one side the long term maintenance of soil fertility and improvement in food crop productivity is a large and complex task. On the other side of the ratio we are likely to find that birth rates are slow to change and even more time is required for a change in birthrates to have a marked effect on population growth. The time lag is increased by a concurrent lengthening in man's prospective life span, as is the case in East Africa. So although land shortage might not be a pressing problem over most of Uganda it is well to take time by the forelock.

In considering this topic some division of labour is helpful, so let the question of population be left to another group. The remaining topic of increasing food output can then be roughly divided into the connected topics of land use and its productivity. A brief consideration will be given to these topics to provide tools for analysing a subsequent title of statistics on land use in Uganda.

Our interest in land usage is in the scope for increasing the area of land under production. McMaster has calculated the area of land in Uganda that is not occupied with swamps, forest reserves or National Parks. [28] This land is available for agriculture but is in part agriculturally useless. No one seems to know how much of the land is useless nor is it possible to forsee innovations that may bring bread out of what are thought to be stones. Yet it is very likely that under present conditions, the agricultural potential of unoccupied land is less than the potential of the areas occupied by farmers. Thus if one half of the available land was found to be occupied a doubling of the population would tend to lower the standard of living. Even a fifty per-cent increase would leave very little scope for improving the populations nutritional and living standards, but practical relief might come from improved yields.

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27. Forbes, W.H. Fed. Prod., 11, 667-674, 1952.
28. McMaster, A Subsistence Crop Geography of Uganda, Bude, England, Geographical Publications Ltd., 1962, p.32 Table 5.

Within the area occupied by farms the relationship of land under cultivation to land being rested is a useful indicator of long term prospects. At present opinion on the vexed question of maintaining soil fertility in Uganda seems in favour of alternating three years of cultivation with a managed three years of rest.[29] This ideal would appear in the statistics as a one to one ratio between cropping and resting in the area of occupied land. A study of part of Teso where the amount of rest was less than three years, with practically continuous cultivation of some plots, it was noted that the land was yielding less than in earlier decades.[30] This fall in fertility may be difficult to reverse.

Table 4 has been constructed to show the current pressure on land in each district of Uganda except Toro and Karamoja which were excluded from the recent Census of Agriculture.[31] The corrected area of holdings from the Census of Agriculture (col. 2) has been expressed as a percentage of the area of land available for agriculture provided by McMaster (col. 1), giving the degree of occupation (col. 6). If there was no shifting cultivation and if more intensive cultivation of land within the holding would cause a decline in fertility, the degree of occupation column indicates the maximum scope for population increase. At present it is estimated that the population of Uganda is growing at $2\frac{1}{2}$ per cent a year and if this rate continues the population will double every twenty eight years.

In calculating the ratio of cultivation to resting land, land under coffee and thus excluded from crop rotations, has been deducted from the area of holdings to give the area open to rotational crops (col. 4). The area of rotational crops (col.3) overstates the area they occupy by the extent of double croping. Thus the crop to rest ratio for Uganda of 1:0.94 (col. 5) would probally be equivalent to the 1:1 norm for maintaining fertility and judgement on the room for increased population would rest on the agricultural potential of the 73 per cent of land still unoccupied. Further study of the table indicates that in Busoga, Bugisu, Toro and Kigezi there is probably little room for additional population and declining soil fertility may be a problem. On the other hand there is much more room in most other parts of Uganda.

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29. ibid pp. 35 and 36.
30. Wilson, P.N., "An Agricultural Survey of Moruita Erony, Teso", Uganda Journal 22, 22-38.
31. Uganda, Census of Agriculture, Entebbe, Government Printer, 1966.

TABLE 4

LAND UTILISATION IN UGANDA 1964

District	Available Land	'Corrected' area of Holdings	Rotational Crops	Area of Holdings less area of permanent crops	Crop:rest ratio	Degree of Occupancy
	(1)	(2)	(3)	(4)	(5)	(6)
		THOUSAND ACRES				
Mengo	5,070	1,464	390	964	1.5	29%
Masaka	2,103	598	75	351	3.7	28%
Mubende	1,561	200	39	166	3.3	13%
Busoga	1,864	1,247	380	1,061	1.8	67%
Bukedi	872	748	303	639	1.1	86%
Bugisu	700	466	257	350	0.4	67%
Teso	2,472	1,522	925	1,514	0.6	62%
Ankole	3,359	715	56	572	9.2	21%
Bunyoro	2,149	366	94	334	2.6	17%
Kigezi	1,052	512	347	472	0.4	49%
Lango	2,894	667	501	655	0.3	23%
Acholi	6,379	631	482	623	0.3	10%
West Nile and Madi sub-District	3,233	363	287	345	0.2	11%
UGANDA	33,708	9,499	4.179	8,089	0.94	28%

Sources: Col. 1. McMaster, op. cit. p, 35 Table 5 Col VI

Col. 2-4 Uganda Census of Agriculture, op. cit.

Col. 5 (Col. 4 ÷ Col. 3) - 1

Col. 6 (Col. 2 ÷ Col. 1) x 100

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The task of increasing food productivity in the long term differs from that in the medium term in the degree of change and the type of change that can be envisaged. Possibly too the problems to be faced are more fundamental. There is only space to show the scope and limitations of long term improvements with two examples. First there is the scope for practically doubling output by adopting farming system that use the resting phase while maintaining soil fertility. Second, the limitations on improvement arise from the fixed supply of the country's natural resources and the increasing difficulty of using them nearer and nearer to the limit of biological efficiency.

So while at present Uganda has ample resources of land and lakes for producing the food and exports she requires, it is well to remember that the average size of holding is 8.1 acres, living standards are low and the population may double its size every twenty eight years or less.

SUMMARY

Food occupies a central place in economic development as the country's largest product meeting the first needs of every household. Food is also central to the transition from a relatively unproductive subsistence agriculture to a more prosperous system characterised by specialisation in production, widespread marketing of foodstuffs and ability to meet the food needs of urbanisation. Food is also clearly involved in the task of reducing malnutrition, especially Protein-Calorie Malnutrition - the first enemy of child health in many areas. Further, in the longer term, the pressure of population on land resources is likely to strike at the nation's food supply.

The range of policies in the field of Food and Nutrition is thus large. In each policy area it is important to distinguish between the various types of food, such as between proteinaceous foods for meeting urbanisation and malnutrition, and starchy staples in helping the transition from a subsistence to a market oriented agriculture. Other important distinctions are between the situations in different regions and the time spans relevant to each problem and its associated policy. Finally a host of data & calculations are needed to achieve a balanced and practical programme with stated priorities and a widespread commitment to secure an adequet diet now and in the future.

APPENDIX B

POST HARVEST PRICES COMPARED WITH THOSE LATER IN THE SEASON

From Prices Recorded at Kampala and Soroti

	Kampala			Soroti		
	Cents ¢ per lb.		% rise from	¢ per lb.		% rise from
	Low	High	Low to High	Low	High	Low to high
Maize	Aug-Oct	Feb-Mar		July-Sept	Jan- June	
1961-62	11½	15	30	No data		
1962-63	7½	13½	80	10	15	50
1963-64	11½	21	83	12	22	83
1964-65	12½	28*	124	15	30	100
Finger Millet						
	July	December		Jan-Aug	Dec-Feb.	
1961-62	23	29	26	25	28	12
1962-63	15½	26	68	10	27	170
	June	May-June				
1963-64	20	28	40	20	28	40
1964-65	21	34	62	20	30	50
Groundnuts (Unshelled)						
	Jan-July	Feb		Jul-Sept	Feb.	
1961-62	23	38	65	20	40	100
1962-63	20	30	50	25	35	40
	Jan-July	May-June		Jun-Aug	May	
1963-64	21	35	67	25	33	32
1964-65	22	50	127	25	53	112
Mixed Beans						
	May-June	April		June	May	
1961-62	17	35	106	No data		
1964-65	22	50	127	25	40	60

* In June

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POST HARVEST PRICES COMPARED WITH THOSE LATER IN THE SEASON

	Kampala			Soroti		
	Cents ¢ per lb.		% rise from	¢ per lb.		% rise from
	Low	High	Low to High	Low	High	Low to High
Sim Sim						
	Jun-Aug	Feb-Jun		Aug-Oct	Jan-Feb.	
1961-62	43	55	28	32	56	75
1962-63	49	59	20	50	56	12
1963-64	53	55	4	45	58**	29
1964-65	47	58	23	48	60	25

** In July.

Source: Market Bulletin, Entebbe, Department of Agriculture.

Mrs. D. Coles kindly provided her tabulations of Market Bulletin data for this table.

TABLE 1 : Central Government Developmental Expenditure in Current Development Plans: Uganda, Kenya and Tanzania(mainland)

(£m)

Uganda 1966/67 - 70/71				Kenya 1965/66 - 69/70				Tanzania 1964/5 -- 68/9			
Category	Allocation		%	Category	Allocation		%	Category	Allocation		%
Agric., livestock, Coops. and Fishing	20.9			Agric., livestock, Coops. and fishing	24.7			Agric., livestock, Coops. and fishing	21.8		
Water Development	5.1			Water supplies	4.7			Water and Irrigation	9.2		
Forests	0.3			Forests	5.9			Forests	0.9		
Minerals	0.6			Minerals	0.3			Minerals	2.2.		
Game and Tourism	1.5	28.4	31.5	Game and Tourism	1.0	36.6	40.3	Game	0.4	34.5	34.6
Industry	1.7			Industry and Commerce	1.9			Manuf. and Commerce	13.9		
Roads and Telecomms.	12.9			Roads	21.6			Roads	12.1		
Airports	3.6			Airports	1.7			Airports and Harbours	1.3		
		18.2	20.2			25.2	27.8	Power	4.0	31.3	31.4
Education	15.6			Education	9.7			Education	14.0		
Health	10.8			Health	4.6			Health	1.8		
C'ty Devpt.	2.1			C'ty Devpt.	0.6			C'ty Devpt.	1.2		
Inf. & Radio	1.2			Inf. & Radio	1.3			Inf. & Radio	.4		
Housing	0.5	30.2	33.6	Housing	5.4	21.6	23.8	Housing & Urban Devpt.	3.4	20.8	20.8
Local Govts.	1.3			Local Govts.	2.0			Local Govts.	7.0		
Security and Admin.	11.9	13.2	14.7	Miscellaneous	5.4	7.4	8.1	Miscellaneous	6.2	13.2	13.2
Total		90.0	100	Total		90.8	100	Total		99.7	100

Sources: Uganda, Second Five-Year Plan, Table 18. Kenya, Revised Development Plan, Table 12, pp. 120-122; Tanganyika Five-Year Development Plan, Table V b.

Notes: 1. Expenditure on Defence has been excluded throughout.
2. The Kenya Plan excludes from the category of Developmental Expenditure a further £14.39m. to be spent on Land Transfer to small African farmers in the former 'White Highlands'. If it were included, the proportion of total expenditure in the primary producing sector would rise from 40.3% to 48.5%.
3. The Tanzania Plan excludes any calculation for recurrent expenditure consequential to capital investment; the Tanzania sectoral allocations above are understated, therefore, relative to those for Kenya and Uganda, particularly in the social services and administration.

Appendix Table A

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