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EAST AFRICAN INSTITUTE OF SOCIAL RESEARCH
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NOTE: The papers read or presented to the Conference are issued in five parts. They are grouped broadly by subjects, for convenience in referring to related papers, rather than by the specialisation of the author.

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No. 362

A. B. Baryaruba.

FACTORS AFFECTING INDUSTRIAL EMPLOYMENT

A. INTRODUCTION

Wage Employment in East Africa has been disappointly low in recent years. In all three countries, employment increased in early fifties but then levelled off in late fifties. In the early 1960s, gainfully employed labour has actually declined and it is not clear whether this trend has reached a halt.

WAGE-EARNERS AS % OF TOTAL POPULATION (AFRICAN).

	1952	1956	1957	1960	1962
Kenya	7.6		7.7	7.1	6.3
Tanganyika	5.6	4.6	4.5	4.6	4.3
Uganda	4.6	3.8	3.7	3.5	3.1

Source: Economic and Statistical Review;
Statistical Abstracts.

This paper will be restricted to Uganda. It purports to discuss the employment problem on the following lines:

- (1) An analysis of general economic trends.
- (2) Excerpts from individual case studies of five of the major firms in Uganda. The study has mainly been concerned with such variables as size and composition of work force in relation to trends in labour productivity, training schemes, changes in Capital equipment and wage increases. The study was prompted by the failure of Industrial Employment to increase.

B. 1.

GENERAL ECONOMIC TRENDS

AGGREGATE VARIABLES 1960-64.

Year	G. D. P. (£m.)	Change G. D. P. (£m.) (%)	Employment numbers	Change Employment numbers	Earnings (£m.)
1960	152.1	+ 3.0 (2%)	244,500	+5000 (+2%)	27.0
1961	156.4	+ 4.3 (2.7%)	236,100	-8400 (-3.6%)	29.5
1962	156.7	+ .3 (.2%)	230,800	-5300 (-2.3%)	30.7
1963	175.8	+19.1 (11%)	221,700	-9100 (-4.1%)	31.5
1964	203.0	+27.2 (13%)	227,000	+5300 (2.3%)	35.1

Source: Background to the Budget.

The following picture emerges from major variables shown in the table above:

- (i) The growth of G. D. P. having slackened in 1960-62 did improve in 1963 and 1964. This was mainly due to increase in volume of Coffee and Cotton and to better Coffee prices. Between 1960 and 1964 G. D. P. increased by 30%; annually, it grew at a rate of 7.5%.
- (ii) Employment declined each year from 1961 to 1963 and although 1964 had 5300 people more in employment than 1963, this was less by 17500 than in 1960. Over the period, employment declined at an annual rate of 2%.
- (iii) Incomes of the wage-earning class on the other hand have been going up. Over the period, wages have gone up by about 30% and have increased at an annual rate of 6.7%

The obvious income disparity in favour of the urban wage-earner and against his rural counterpart together with good social amenities in town, can be taken as a major factor that is attracting many job-seekers into town.

Trends in G.D.P., Employment, Average Productivity and Wages 1960 - 1964

Growth in G.D.P.	7.5% p.a.
Growth in Employment	-2% p.a.
Growth in Average Productivity	9.5% p.a.
Growth in Earnings	6.7% p.a.

TRENDS IN PRODUCTIVITY BY SECTORS 1960-64.

Sector	Annual Rate of Increase		
	at current prices	at 1960 prices	Corporate and non-african enterprises (at 1960 prices)
Agriculture	7.4%	3.7%	11.2%
Cotton, Coffee and Sugar Processing	6.9%	11.6%	11.6%
Forestry, Fishing and Hunting	5.8%	1.8%	5.9%
Mining and Quarrying	30%	16.7%	16%
Manufacturing of food products	2.7%	-1.8%	-2.1%
Miscellaneous Manufacturing	6.2%	-0.9%	-1.2%
Electricity			9.9%
Construction	2.1%	-2.6%	0%
Commerce	16.2%	12.3%	14.2%
Transport and Communication	5.4%	5.6%	9.2%
Central Government	8.7%	1.0%	
Local Government	10.1%	1.2%	
Miscellaneous	5.3%		-0.6%

Source: Economic Development Research Project No. 76.

High increases in productivity by sectors shown above can be explained on two grounds:

- (i) Generally, there have been measurable increases in output over the period.
- (ii) On the other hand, employment in many sectors, has declined. Recently, the decrease have been rather pronounced in Construction, Cotton ginning and Local Government. In those sectors where employment has not declined, output has been growing about 4 times faster than employment.

Employment Problem in Uganda-Highlights

Wage-Earners as a % of total population (African).

1948	1952	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
3.2	4.0	4.2	4.0	3.8	3.7	3.6	3.5	3.5	3.3	3.1	2.9

Source: Statistical Abstracts.

African Employment has not been able to reach its 1954 level (as % of population). Those Employees who have lost their jobs or who have failed to get jobs are mainly those without skills. The economy measures by employers to use less labour are concentrated in the unskilled group of workers.

There are no reliable figures on the unemployed in Uganda but the queues one witnesses at factory gates each beginning of the month in Kampala and Jinja would put the figure around 15000 (about 6.6% of those who were employed in 1964) in major towns.

An exercise in tribal breakdown of employees shows that in recent years, 27% of all African workers in Uganda have come from neighbouring states. This 27% has been remarkably stable. In Industry, there is a feeling among employers that some of non-Ugandan Africans are more willing and more suitable to industrial work than many Ugandan Africans. This attitude probably explains why the decline in employment among Africans has been concentrated among Ugandans and less among non-Ugandans. This contention by employers may be well-founded since there could have been many other cash alternatives available to Ugandans. However, with the people entering the labour force now, one expects a change of attitude because few are likely to have land they can call theirs in a decade or so..

In addition to the 27% mentioned above, there are about 200,000 non-Ugandan Africans in the country. About 100,000 are in employment in rural areas. They largely come from Rwanda and Burundi. The rest (about 100,000) are refugees - from Rwanda, Burundi, the Sudan and the Congo.

2. Case Studies.

The interest in this part of the paper is to find out to what extent the case studies completed so far:

- (a) Conform to the pattern depicted above.
- (b) Answer or throw more light on the problem raised above.

As indicated the study was intended to find out what employers have been doing to their labour. Initially, we shall examine employment policies of the firms and then will go on to look at Employment in relation to Output etc.

The firms which have been studied are:-

- (1) Nyanza Textiles Industries Ltd. (NYTIL) - Jinja
- (2) Uganda Breweries Limited - Port Bell
- (3) B.A.T. Uganda - Jinja
- (4) Kilembe Mines Limited - Kilembe
- (5) Sikh Saw Mills - Jinja.

Employment Policies

Recruitment.

With few exceptions, employees in the unskilled category are picked from factory gates. The number of these job-seekers at gates reach high peaks at the beginning of each month. This was true of the factories I visited in Kampala and Jinja; it was true of Kilembe too. Labour exchanges have been given as another source but it is doubtful whether these are used very often.

Vacant posts in semi-skilled and skilled categories are, as a general practice, filled by appointing from the ranks. When there is no suitable candidate within the ranks, then the firm advertizes in papers or consults the Labour Exchange. In certain cases, technical Institutes (e.g. Kyambogo) are approached.

The recruitment methods are designed to select employees with great potential. Some of the companies have Selection Boards which screen workers before they are taken on; others have aptitude testing units; and in one firm, applicants are put on a practical test. The probationary period ranges from one to three months, and in this period, unsuitable employees are discontinued.

Length of Service and Turnover

There is quite a noticeable staying on among many employees. Apart from Kilembe where length of service figures could not be made available, at other firms, figures show that generally 2/3 of their employees have been with them over two years. At B.A.T. Uganda for example, over 90% of the employees have been with the firm for at least five years. The average year for the factory is about 12 years.

This does not mean that the "shopping around" habit is completely done away with. The habit still exists especially among:

- (i) employees with lowest service.

(ii) school leavers.

The leaving rate is high in companies where conditions or places of work are not good, where work is manual and where wages are low.

One major reason which seems to keep employees from leaving is the difficulty involved in getting an unskilled job in Kampala and Jinja. Some people spend 4 to 8 months looking for jobs.

The Elkan thesis* that the Baganda had a high rate of turnover in the early period of service is, to a certain extent, still true but it is highly doubtful whether the immigrant tribes are "perfectly" target workers as was contended.

Education

Firm	% of Total		
	Illiterate	P1 - 6	Sec. 1 & over
NYTIL	15	53	32
B.A.T.	35	48	17
SIKH SAW MILLS	29	49	22

Source: Economic Development Research Project No. 69, 75 and 89.

Generally, about 75% of employees at each factory have had either a Primary Education (P1 - 6) or no education at all. This shows the predominance of lack of skill when most employees are recruited. For unskilled jobs, at least, recruiting officers do not take educational attainment into account. In factories where aptitude tests are given, educational qualification is not supposed to be an aid. At the moment, formal education does not seem to affect performance standards of these firms.

Training

There are three major forms of training common with these firms:-

- (1) "On the job" training
- (2) Apprenticeship
- (3) Training within Industry.

* W.E. Elkan, An African Labour Force. East African Studies No. 7, E.A.I.S.R. Kampala, 1956, P.7

1. In all five firms, on the job training is a part and parcel of their hiring practices. In some firms e.g. Nytil, B.A.T. and Kilembe, it is highly formalized in the sense that
 - (a) most operatives have to undergo some form of training or other.
 - (b) there are training Schools.

This training is regarded as necessary among these firms because the nature of the job require some higher skills and greater dexterity, e.g. spinning. In other cases where work is largely manual, learning is through experience and length of service.

The training programmes provide operatives with a first hand knowledge of particular machines, e.g. looms and is rarely intended for general understanding of Industrial process.

2. Apprenticeship schemes are also carried out by most firms. The participants are workers aspiring for skilled jobs, e.g. plumbers, electricians, etc. Training of this nature usually has the goodwill of the Labour Department which in some cases sets tests at the end of the period.
3. Training Within Industry. The course is intended to equip supervisors and middle level management with a knowledge on such subjects as job safety, job instruction and job relations. It is sponsored by the Labour Department and Uganda Federation of Employers.

Trends in Output, Employment and Average Productivity
for 5 firms 1960-64.

Firm	Growth in Output p.a.		Growth in Employment	Growth in Average Productivity	
	Using Physical Measures	Using Monetary Measures		Physical	Monetary
Nytil	% 26.5	% 25.1	% 12.7	% 12.2	% 11.1
Uganda Breweries	4.8	10.2	-1.7	6.6	12.2
B.A.T. Uganda	-2.9		-6.2	3.4	
Kilembe Mines	5.5	16.5	5.1	.4	11.0
Sikh Saw Mills		6.2	-5.8		15.9

Source: Economic Development Research Project Nos. 69, 73, 75, 88 and 89.

With the exception of Nytil and Kilembe Mines, productivity at the other three firms has been increasing at a higher rate annually than either output or employment. Employment for the three firms has in actual fact been declining.

The analysis gives the following pattern:

- (a) a Firm whose output is increasing rapidly (Nytil over 25% p.a.) and employment too increases (12.7% p.a.).
- (b) two firms whose output is increasing moderately (Uganda Breweries 4.8% p.a.; Sikh Saw Mills 6.2% p.a.) and productivity rises moderately or rapidly (Uganda Breweries 6.6% p.a.; Sikh Saw Mills 15.9% p.a.) Employment on the other hand falls.
- (c) two firms:
 - (i) One whose Output and Employment rise at almost same pace (Kilembe Mines, 5.5% p.a. Output; 5.1% p.a. Employment). Increase in productivity is therefore nearly zero (.4% p.a.).
 - (ii) And another firm whose Output is falling (B.A.T. Uganda -2.9% p.a.) productivity rises slowly (3.4% p.a.) and Employment declines (6.2% p.a.)

Trends in Fixed Assets, Wage Bill and Average Wage
in 5 firms 1960-64

Firm	GROWTH IN-		
	Fixed Assets	Wage Bill	Average Wage
Nytil	14.5% p.a.	29.5% p.a.	14.7% p.a.
Uganda Breweries	1.9% "	7.0% "	8.7% "
B.A.T. Uganda		3.3% "	10.2% P.a.
Sikh Saw Mills	3.5% "	7.6% p.a. (1959-63)	8.3% p.a. (1959-63)
Kilembe Mines	3.6% "	6.5% p.a.	1.8% p.a.

Source: Economic Development Research Project Nos. 69, 73, 75, 88 and 89.

Nytil's fixed assets have been increasing at an annual rate of 14.5% for 1960-64, Uganda Breweries at 1.9%; Sikh Saw Mills at 3.5% and Kilembe Mines at 3.6%. With the exception of Kilembe, the annual growth rates in Capital are greater than annual increases in Employment. Nytil had an increase of 72% in fixed assets over the period; (compared to 48% in employment); for Uganda Breweries, the increase was 8% (compared to a decline in employment); Sikh Saw Mills had an increase of 14% (compared to a decline in employment) and only Kilembe had an increase of 15% (compared to an increase of 22% in Employment).

With the exception of Sikh Saw Mills, increases in wages over the period have been greater than output, employment and productivity.

C. Summary and Conclusions

Our analysis of trends in the economy and the Case Studies show that:

- (1) The economy achieved high employment levels in 1950s but failed to hold to its own and in 1960s, employment has actually decreased. In those firms where employment has not declined, the growth rates in 1960s are lower than those achieved in 1950s.
- (2) Generally, Output has continued to increase.
- (3) Average productivity continues to grow at a faster rate than output or employment
- (4) Wages also have continued to increase. On aggregate level, earnings increased by about 30% between 1960 and 1964 (compared to an annual growth rate of nearly 7%). In the firms studied, wages generally have been increasing at a faster rate than output, employment and productivity. Thus disregarding diffusion effects, it can be said that the few who have remained in wage-employment have obtained larger income shares.

The results from the case study show that deliberate measures have been initiated by employers to economise the use of labour. These include:-

- (a) better organisation of work force and careful selection methods.
- (b) improved supervisory standards. This has been achieved through training of supervisors and middle level management.
- (c) Training labourers and operatives.
- (d) More use of Capital-intensive techniques and improved layout of machinery.

In addition, labour has become relatively stable.

In the field of employment creation, the present plans leave much to be desired. The approach seem to be that of "undertake development first and solve unemployment second" - an approach that could breed insurmountable social, not to mention political problems. If in the next development plan an all out effort is not made to halt the declining trend in employment, urban unemployment could easily become a serious problem in the future.

No. 385.
Mr. Chand.

WELFARE AND THE EAST AFRICAN COMMON MARKET*:
SOME OBSERVATIONS

by
S. Chand.

This paper** is essentially about the production-effect and its fundamental importance in assessing the gains and losses incurred by members of a customs union. There are two basic ingredients in any assessment of the implications that a customs union has for welfare and these are the pre- and post-union patterns of production and tariffs. A customs union involves the extension of the respective members' pre-union geographically discriminatory tariffs so as to cover the union area. In the course of its operation new tariff barriers will be erected and some of the existing ones dropped and these tariff movements will be both a cause and a consequence of changes in the patterns of production of the respective members. How are we then to assess the continuing gains and losses deriving from a customs union?

Almost all of traditional customs union theory has been concerned with the comparison of pre- and post-union situations and with the problem of assessing the gains and losses that emerge immediately, following union. In attempting to assess a customs union's continuing gains and losses we must necessarily adopt a standard which would involve a comparison between what is actually the case for the members, and what would have been the case had the customs union not been formed. The necessity and ultimate desirability for this sort of comparison cannot be evaded. In practice, however, it is extremely difficult if not impossible to carry out.

The analysis and observations presented in the paper can be regarded as primarily Vinerian. In an early work¹⁾ he distinguished between the trade-creating and trade-diverting forces of customs unions. The former effect involves the entry of a commodity into inter-country trade because inefficient domestic production is displaced by more efficient production of the commodity by another member of the union. The latter effect is present when the customs union tariff enables a member to displace the imports of another member from cheaper outside sources. Trade-creation and trade-diversion are thus concerned with inter-country commodity substitution - the

*'Common market' and 'customs unions' are used as synonymous throughout the paper.

**I am indebted to Mr. C.R. Patel of the Central Planning Bureau for his extremely helpful comments and suggestions during the course of writing this paper. As the author is a Civil Servant he would like to state that the views expressed herein are his own personal views and are not necessarily those of the Central Planning Bureau or the Uganda Government.

production effect. The presence and strength of these forces are affected by the pre- and post-union patterns of tariffs, production, and trade and the simplifying assumptions made in the course of the analysis. These forces are also to be influenced by the scope of the analysis - whether static, short-run or long-run. In the static frame the production-effects are regarded as affecting the opportunity costs of the goods that are ultimately consumed; in the short-run the same effect is taken as influencing levels of income whereas in the long-run (assuming inter-member mobility of factors) this effect is regarded as determining the location and future rewards of the productive factors themselves and the realization of scale gains.

We are thus concerned not only with actual shifts in production between members brought about by the customs union but also with the influence exercised over future patterns of production and ultimately the location of the productive factors. Before we can generalize the production-effect in this manner we must take into account the so-called consumption-effect which concerns the welfare implications of inter-commodity substitution. It is, however, argued in Part I that the consumption-effect, apart from being empirically negligible, is irrelevant, at any rate for the static model, and that this would affect the general propositions that have been put forward in that context.

The paper concludes on a negative note with little said about the distribution of the continuing gains and losses arising from the East African Common Market institution. On the basis of the observations put forward, the welfare assessments recently provided by others in this context are criticised, the general contention being that since customs union theory concerns a multiplicity of cases and belongs to the realm of the 'second-best' there can be no unambiguous welfare conclusions without an extremely detailed empirical examination.

Finally a few words about welfare. Despite its title, the paper does not directly confront the whole issue of 'welfare' which is a highly complex one; an increase in welfare is assumed to take place when the gains outweigh the losses, whatever may have happened to the income distribution.

Part I

Do customs unions always lead to an increase in welfare? There is no a priori answer to this question and any general presumptions we may care to have about customs unions leading to an increase in welfare would depend on the assumptions we have made. In the context of Viner's model the following assumptions are made: two commodities, constant rates of transformation, perfect competition in all markets, a constant marginal rate of substitution, an income-distribution which is regarded as ideal and which remains constant, no external economies or diseconomies, and so on. Since there are only two commodities, any welfare conclusions we arrive at must be unambiguous. Either there is an increase in welfare or a reduction. With the other assumptions if we further assume that there is an overlap in the production patterns of the prospective union members then we have both a necessary and sufficient condition for there to be an increase in welfare.

The removal of only two assumptions - that regarding the two commodities so that we now have more, and that regarding constant costs so that we no longer require prohibitive tariffs if we are higher cost countries - would necessitate a modification of these conclusions. Welfare can either increase or decrease unambiguously and whether or not welfare does in fact increase would depend on the given empirical situation. Relaxation of the other assumption would mean that the overlap in production patterns would be a necessary but not a sufficient condition for welfare increases since there is now the possibility for trade-diversion*.

The theory of customs union is really an exercise in the theory of the second-best. This can be shown even under the highly restrictive assumptions of the three-commodity three-country model and a fortiori when these assumptions are relaxed.

*One major difficulty to be contended with in formulating the welfare-creating conditions for a customs union is the very large number of logically possible cases that have to be considered. In the three-country two-commodity model there are 2^3 logically possible cases when only the variations of commodities as exports and imports with respect to each country prior to union are considered, though these reduce ultimately to five cases which are economically significant. In the three-country three-commodity model should the classification adopted be extended so that we are interested as to whether the commodities enter as imports or exports or are not produced, whether or not complementary, whether there are tariffs or not and whether these are prohibitive or not, there would be found 2^7 or 128 possible cases though not all of these are economically meaningful.

Thus assume a three-country model containing three countries, A, B and C with at least three types of commodities: domestic commodities (A), imports from the union partner (B) and imports from the outside world (C).

Abstracting away from transport and other related costs the actual situation from the viewpoint of country A's welfare as to the optimum conditions which have to be fulfilled for her to maximize her welfare (making assumptions some of which are specified below) could be characterized by:

$$\frac{PA_d}{PB_d} = \frac{PA_i}{PB_i}; \quad \frac{PA_d}{PC_d} = \frac{PA_i}{PC_i} \quad \text{and} \quad \frac{PB_d}{PC_d} = \frac{PB_i}{PC_i} \quad - \quad (1)$$

where the subscripts A, B and C refer to countries of origin, d to prices in A's domestic market, and i to prices in the international market.

These three conditions in effect state the familiar requirement that domestic rates of transformation should equal foreign rates of transformation for trade to be maximized (which would only take place under free trade), and also imply (given certain assumptions) that domestic rates of substitution are equal to domestic rates of transformation and therefore to foreign rates of transformation, so that consumers are in equilibrium on their highest indifference curve at which point their welfare would be maximized.

Should now a uniform ad valorem tariff be imposed by A on imports from both B and C, the following situation would prevail:

$$\frac{PA_d}{PB_d} \neq \frac{PA_i}{PB_i}; \quad \frac{PA_d}{PC_d} \neq \frac{PA_i}{PC_i} \quad \text{but} \quad \frac{PB_d}{PC_d} = \frac{PB_i}{PC_i} \quad - \quad (2)$$

Abolishment of the tariff with B would then lead to the following:

$$\frac{PA_d}{PB_d} = \frac{PA_i}{PB_i} \quad \text{but} \quad \frac{PA_d}{PC_d} \neq \frac{PA_i}{PC_i} \quad \text{and} \quad \frac{PB_d}{PC_d} \neq \frac{PB_i}{PC_i} \quad - \quad (3)$$

A in having moved from the second to the third situation would have moved from one sub-optimal position to another and no unique a priori ranking would be possible.

With regard to the production-effect, both the trade-creating and trade-diverting forces would be involved and with regard to the consumption-effect both welfare-adding and welfare-reducing elements would be present. Only a detailed empirical examination of a given empirical situation would enable us to establish whether or not there has been a gain from A's viewpoint.

Lipsey² in his interpretation of these optimum conditions seems to be entirely concerned with the so-called consumption-effect. At any rate the general presumptions he puts forward are wholly based on the existence of this particular effect.

Thus he states "... that a customs union is more likely to raise welfare the lower is the total volume of foreign trade, for the lower is foreign trade, the lower must be purchases from the outside world relative to purchases of domestic commodities" and further "... that, given a country's volume of international trade (his italics) a customs union is more likely to raise welfare the higher is the proportion of trade with the country's union partner and the lower the proportion with the outside world." From these two propositions he concludes "... that the sort of countries who ought to form customs unions are those doing a high proportion of their foreign trade with their union partner, and making a high proportion of their total expenditure on domestic trade". There is, however, little basis for either the general conclusion or the propositions that gave rise to it.

Consider a simple example he uses to illustrate these propositions. Country A, in the pre-union state with an ad valorem tariff on all her imports, whatever their source, purchases only eggs from B and only shoes from C, producing and consuming all other commodities at home. A now forms a customs union with B and her imports of eggs would now be brought into the 'correct' (i.e. one which conforms with the real rate of transformation) price relationship with A's commodities. This by itself tends to increase welfare. On the other hand the correct price ratio between eggs and shoes would be disturbed (A's pre-union ad valorem tariff has no effect on the price ratio) and this would tend by itself to reduce welfare. The bringing of eggs into a correct price relationship with all the other commodities, e.g. bacon, butter, cheese, meat, etc. would lead to a higher gain relative to the loss suffered in distorting the correct price ratio between eggs and shoes (since the price relationship of shoes with all other commodities, e.g. socks, clothes, etc. could not be affected by the union with B). Thus the first proposition. Should the position now be reversed with A producing only shoes, and still importing only eggs from B but everything else from C, the post-union gains derived from establishing the correct price ratio between shoes and eggs would be negligible compared to the losses suffered from distorting the correct price relationship between eggs and all the other commodities. Thus the second proposition.

The fact that the production effect has been ignored makes nonsense of these propositions. Suppose that B while exporting only eggs to A was also producing shoes but less efficiently than C. On forming a customs union with A, B would now be able to export shoes to A and displace A's imports of

shoes from C. A's welfare would suffer a decline, at least to the extent of the tariff revenues she has lost as a consequence of importing from B. The overall result for A's welfare would be difficult to discern and unless we were to make certain extreme assumptions regarding the relative strengths of the production and the consumption effects we would be forced to reject the two propositions, or at any rate modify them so that the production-effect is also taken into account.

It can, however, be argued that in the context of the model assumed so far the consumption effect is irrelevant.

In order to show this we are interested in the following assumptions that are made:

- (1) No country can influence the prices of the goods in which it trades (assumption of perfect competition in the trade markets).
- (2) All individuals have identical and unchanging indifference maps with the pattern of income distribution assumed constant (essential if we are to make use of community indifference curves both in the pre- and post-union situations).
- (3) Production possibility curves are characterized by constant transformation rates (a result of assuming linear production functions and the assumption that country A is specializing completely in the production of A).
- (4) Trade is balanced (since we are only interested in static equilibrium positions).
- (5) Consumers adjust their purchases to the relative prices ruling in the domestic markets (with consumers always in equilibrium, with domestic rates of substitution = domestic rates of transformation)

and most important of all

- (6) "... the tariff revenue collected by the Government is either returned to individuals by means of lump sum subsidies or spent by the Government on the same bundle of goods that consumers would have purchased"²⁾ (my scoring).

These assumptions taken together render it absurd in the first place for Government to levy any tariff duty³⁾ at all. Neither is the duty being levied to improve the country's terms of trade (precluded by assumption 1), nor for changing the pattern of income distribution (assumption 2), nor to protect any domestic industry (assumption 3), nor to reduce an overall import surplus (assumption 4), nor to finance any

real operation (assumption 6). Assumption 6 has an added implication which depends on how the quotation provided is interpreted. There are two possibilities to be considered, both of which involve the extreme assumption that Government's spending behaviour is identical with that of other consumers. Either Government spends as consumers would have spent before the introduction of a tariff or as they would have spent after its introduction. The former is the position taken by Viner who assumed fixed proportionality in the consumption of commodities, irrespective of the changes in the structure of relative prices following the introduction of tariffs, whereas the latter is the position taken by Lipsey and others who assumed (5). If the tariff revenue collected by Government is returned to individuals by means of lump-sum subsidies then assumption (5) would cease to be operative since there would be a tendency on the part of consumers to regard the change in relative prices as entirely spurious. They would then remain at their pre-tariff equilibrium point on their given consumption possibility curve and there would be no consumption effect. The case where Government spends according to consumers' post-tariff valuations seems more plausible but is again similarly artificial since it would be the lump-sum subsidy case in reverse.

We may conclude that Viner's assumption of fixed proportionality in the consumption of commodities is not after all as special as is commonly made out. The consumption-effect would on theoretical grounds be irrelevant at least in the context of the model assumed. This would not, however, involve complete acceptance of Viner's assumption since in making it he also assumed that income changes would exercise no influence on the relative proportions in which commodities were consumed. But this latter assumption is not required since customs union theory as so far considered, is concerned mainly with the price implications of discriminatory tariff policies. Since empirical consumption studies have also shown that changes in relative prices exercise little influence on consumer spending habits we may safely disregard the consumption effect.

What sort of generalization can we now usefully make? If given that the previous arguments are correct, the generalizations would concern the production-effects of customs unions and would be of the following type - "the customs union is more likely to bring gain, the greater is the degree of overlapping between the class of commodities produced under tariff protection in the two countries and that this gain is likely to be larger the more dissimilar were the cost ratios in the two countries." This gives rise to the general conclusion

that a country should only form a customs union with those countries whose patterns of production overlap her own but whose cost ratios are dissimilar. The static world, however, is a world of instantaneous adjustments. The formation of a customs union may in real life lead to a substantial proportion of the total production of the country being transferred to the other member and as a consequence cause severe dislocations in the form of factor unemployment, balance of payments difficulties and so on. This, though, is the penalty to pay for choosing to specialize in that pattern of production for which the country is relatively poorly endowed. Abandonment of that inefficient pattern of production would through the release of badly utilized resources provide at least the potential wherewithal for more profitable patterns of production and resource-utilization.

Certain elements implicit in the above proposition would apply to the case of under-developed countries wishing to form customs unions amongst themselves or with more developed countries and this would concern the future location of production. The proposition may be regarded as stating a necessary condition for gains to take place without being sufficient since the sufficiency conditions would depend on the implications borne by the assumptions implicit in the proposition. The necessary condition could be regarded as holding at all points of time and that consequently not only would a customs union be likely to bring gain the greater is the actual degree of overlap, etc., but also where the potential degree of overlap is greater. The customs union would not only shift the existing sources of production but would also determine the location of future sources of production as to the country in which it is more efficiently produced. In economies of the East African type where stages of development are broadly similar, where markets are extremely small there is a limited range of manufactured commodities that can be produced. If in the absence of a customs union there is a strong presumption that unnecessary and inefficient duplication would have taken place and if the historical operation of the customs union has averted this then gains would have been obtained. Since there would also be some trade-diversion taking place any overall conclusion as to welfare would require a balancing out of these two forces.

The sort of procedure adopted by Ghai⁴⁾ in his assessment of the distribution of the East African Common Market gains and losses would therefore be inadequate. To assess

each member's welfare by comparing the 'members' within union exports and imports and the respective degrees of protection afforded them, on the assumption that these exports involve trade-creation but these imports, trade-diversion, is attractive in its simplicity. Suppose, however, that the two prospective members of the union started off in a position of balanced trade with each other. If we have net trade-creation then the trade-balance of the members would cease to be in equilibrium since one member would be importing from the other what it formerly produced inefficiently at home. In this case the use of Ghai's criterion would have shown a loss for the member whereas in fact there has been a gain. We cannot assume that imports under a customs union tariff is necessarily trade-diverting, especially amongst under-developed countries where it is not the case that existing, inefficient production is being knocked off, but the case that new patterns of production and their location are being influenced by the customs union (in what one hopes is a more efficient direction than would have been the case had there not been a customs union).

Part II

The proposition developed in the previous section now requires to be considered in the comparative static framework where short-run income effects would prevail. We shall now argue in favour of the following proposition:

"Granted that the process of development requires increased industrialization on the part of the under-developed economies and that this process would be essentially competitive with the production of the advanced countries themselves, the operation of the production-effect of customs unions would make for easier development (under certain assumptions)."

If we accept that industrial development proceeds largely through import substitution⁵⁾ then we must accept that economies at an early stage of development with very small markets can substitute effectively (i.e. without protective tariffs) only a very limited range of manufactures. The size of the market is one of the most crucial constraints on industrial development, since scale gains are generally precluded by very small markets, with the consequence that where domestic production is competing with imports high levels of protective tariffs are required with a social cost at least equivalent to the tariff revenues lost. The more efficient location of

industries in a customs union and the larger markets involved would prima facie increase the competitiveness of domestic production vis-a-vis imports with the consequence that relatively lower tariff levels would be required, with a reduction in social cost.

We shall consider these arguments in the context of Professor Brown's⁵⁾ model and compare the short-run income-effects of possible, initial, pre- and post-union positions where the essential differences are as to location and tariff levels. But first a few clarificatory remarks. Since we are interested in the short-run we are abstracting from shifts in factors of production as between the union members. Both in the initial and final positions to be compared the stock of productive factors is retained at the initial level. What is of interest is the use made of under or non-utilized productive factors. We shall consider three situations:

- (a) Where under-utilized resources could be used entirely in the production of those commodities which compete effectively with imports or for which there are no imports.
- (b) Where the alternatives in (a) are totally absent with only import-competing commodities capable of being produced.
- (c) Where a pattern of production involving both (a) and (b) is present.

The member countries could be differently situated with respect to (a), (b) and (c) in the customs union and thus subject to differing short-run effects. Given the degree of under-utilization of resources where a member is placed as to (a), (b) or (c) would define the gains to be derived from increased production. Given the similarity in import patterns the customs union would be most important for a member in (b), least important for any member in (a), and of varying importance for members in (c). In practice members would find themselves in (c) with a bias either towards (a) or (b).

Suppose that in country A there is an increase in production (P) which displaces manufactured imports which are subject to an ad valorem union tariff, (tc). The tax free value of the imports displaced will be $P(1 - tc)$ assuming that the price of the goods domestically produced equals the import price plus customs duty. Income would be increased in A via the multiplier subject to the marginal propensities to save and import. A's overall marginal propensity to

import is made up of a marginal propensity to import from foreign countries and her marginal propensity to import from the rest of the customs union. The increase in A's imports from the other members will, through an increase in member countries' incomes, increase further imports from A so there would be an added increase in A's income. On the other hand the extra production (P) involves the union in a loss in tariff revenue (Ptc). If we assume that of P, a proportion (x) is retained for domestic consumption in A and (1-x) is exported to the rest of the union the increase in A's income, subject to all these influences, could be written as:

$$Y_a = \frac{m^b r^y b + P(1-xtc)}{a(1-td) + ma}$$

where:

$$Y_a = \text{change in A's income at factor cost.}$$

The expression (mbryb) refers to that proportion of the increase in the rest of the unions income arising from the production of (P) in A which is spent on additional imports from A.

The expression S(1-td) refers to A's marginal propensity to save less the proportion of the increased savings (td) that are taxed, and assumed spent only on consumption, by A's Government.

And finally (ma) refers to A's overall marginal propensity to import.

Now assume the following values for the parameters in the above equation (taken from Brown in his discussion of the East African case) with (a) referring to Kenya and (b) to the rest:

$$t_d = 0.1; \quad t_c = 0.2$$

$$s = 0.15; \quad x = 0.75$$

$$m_a = 0.30 \quad m_u = 0.35$$

We can ignore (mbr Y_u) since the influence it exercises is marginal and since we are interested in isolating the influence (tc) or the ad valorem rate of customs duty on the imports for which P is a substitute, exerts on the creation of income in A. If we now insert these parametric values in the above equation:

$$Y_a = \frac{0.85P}{0.435} = 1.95P$$

Thus the higher the tariff rate required to produce the import substitute P and the lower the proportion of P exported to the other members of the union the smaller will be A's income increase. To take an example, suppose A in the absence of a customs union produced 0.75 P which was all consumed at home

but required a tariff rate twice as high as she would have in the union ($t_c = 0.4$) when producing P. Then:

$$Y_a = \frac{0.45P}{0.435} = 1.03P$$

which would be equivalent to 1.37 P had she produced the whole P under the same conditions. Clearly there would have been a drastic reduction in the increase in A's income following her decision to produce P outside a customs union. Suppose now that no protective tariffs are required to produce P, then the increase in A's income, assuming all the other parametric values, would be:

$$Y_a = \frac{P}{0.435} = 2.3P$$

(Note that A's income would have increased slightly more than the amounts shown to the extent that the induced increases in incomes of the other members (the spread-effect) would have called for more exports from A, i.e. the $mbrY_b$ bit.

Now consider in the same way country B who instead of importing 0.25P from A decided to produce it at home (assuming that it was a feasible level of production). Suppose that this would have required a higher level of tariff protection ($t_c = 0.8$). Then, assuming the other parametric values remain the same there would be an increase in B's income of:

$$Y_b = \frac{0.05P}{0.485} = 0.1P$$

which would have been equivalent to 0.4P had she produced P under the same conditions. Suppose that B is a higher cost source of supply than A and that B is producing the whole P but would require a higher tariff level ($t_c = 0.3$). Then the income increase enjoyed by the members would have been less than if the production of P had been located in A.

These examples give us some idea of the magnitudes involved in moving from certain pre-union to post-union positions. We can now consider the problem of whether or not we can satisfactorily answer any question such as 'who has gained or lost the most from the historical working of the customs union'? Ideally the question could be answered if we can compare how the economies would have performed in the absence of a customs union with their actual performances in a customs union. But this is essentially a matter of identifying the forces that emerge as a consequence of customs union and estimating their quantitative importance. In any case all we are entitled to do if we accept the reasoning in the paper is to compare the effects of a differing pattern of production a customs union gives rise to, both initially and

over-time, from the pre-union pattern or that pattern which would have prevailed had the customs union not existed. A distinction has to be drawn between changes in the pattern of production as a result of reallocating a given volume of investment to take advantage of the larger protected markets with no shifts in physical resources taking place (the short-run case) and changes in production where there have been shifts in physical resources (the long-run case). Both these aspects are important in giving rise to the so-called "polarization" or "back-wash" phenomena where members of the union, initially more favourably placed in the production of those manufactures requiring protective tariff barriers, take advantage of this in a customs union, and because of more rapid growth attract productive factors from the other members whose rates of growth may thereby be retarded. In attempting to assess the gains and losses that have arisen from the presence of the latter aspect, some way of calculating the economic position in the absence of these shifts in productive factors would be required.

It would be an illegitimate exercise to estimate these gains and losses by making use of a concept of 'shiftable industry' (and not only for the reasons put forward by Professor Newlyn⁶) and making the assessments on the basis of the consequences that would have followed had these industries been located with the other members and not concentrated in any one member. Only if we were to make the extreme assumption that these industries were established through a shift in capital and other factors with a deprivation for these members of their use would the procedure be a legitimate one.

There does not seem to be any presumption, as Professor Brown maintains, that given a marginal propensity to import from the other members higher than a certain critical level and consequently a positive and significant spread-effect, the other members would have gained. While his procedure is perfectly legitimate when used for assessing the 'spread-effects' it has to be used with great care in assessing customs unions gains and losses in the short run. There are two elements involved here and given the level of investment these are related to the nature of the investment possibilities present and the strategy of development pursued. If the given investment data requires higher tariff barriers in the pre-union situation, the lowering of tariff barriers post-union (because of the scale gains to be realised) would

to that extent involve an increase in incomes which increase constitutes a gain for the country in question. The spread-effect would have been present both in the pre- and post-union situations but the gain for the other members would consist in the increase in the spread-effect. In so far as the customs union induced the setting up of those industries which would not have been established otherwise, the appropriate procedure would again be to compare the respective increases in income and the respective spread-effects associated with the two differing patterns of investment, even if the pre-union pattern does not require any protective tariffs. Similar considerations would also apply to those members where customs union based production does not take place or only to a limited extent because of lesser efficiencies, at any rate in those lines of production. If in the absence of a union these members would have produced these goods but under higher tariff barriers, then the shift in location which takes place following union would be regarded as having conferred a gain on these members if the cheapening of the goods now imported outweighs the income losses sustained in having to invest in other and less profitable directions. This would be even more the case if the increase in incomes arising from customs union based development in the other member, over its pre-union possibilities, was to increase the spread-effect. Only in the extreme case where a member has no use for protective tariffs in production would she suffer an unambiguous loss if she were to import substantially from her customs union partner, though this would be reduced to the extent of the increased spread-effects. Losses would also be incurred if the alternative investment possibilities involved much smaller increases in income than the original investment possibilities which are now assumed to have been taken over by the other member. The latter case, however, would help to speed up factor movements towards the more rapidly developing member with ambiguous consequences for the other member.

We have rejected the general presumption of gains for the other members arising through the operation of the spread-effect released by heightened customs union based development in one member. This is so because we have to compare the post-union increase in the gross-spread effect with the tariff revenue losses that would now be suffered as a consequence of having to import from that member. This would affect the general presumption for gains in the long-run, in so far as it depends on higher investments brought about by the higher

incomes that the spread-effect is supposed to give rise to. A general presumption for gains in the long-run would require that those conditions, some of which were specified in the preceding paragraph, and which relate to the favourable operation of the production effect, be fulfilled. This general presumption would be strengthened by whatever scale gains are realized in the course of the customs union's operation.

The production-effect may in the long-run involve shifts in the productive factors to locations where they would receive the highest rewards in the customs union. This does not necessarily imply a reduction in welfare for those countries from which the shift has taken place. Income remittances and other transfers may even compensate for any losses sustained through the departure of some productive factors.

Concluding Remarks

The bearing to be had on the general problem of welfare and the East African Common Market by the preceding arguments is an essentially negative one in the sense that we are unlikely to arrive at any conclusive assessments regarding the distribution of gains and losses amongst the three member countries. Although it is true that Kenya makes more use of the common market only a detailed examination of what other paths of development were open to her historically could lead to the unambiguous conclusion that she has gained the most. And unless it can be shown that Kenyan predominance in the common market precluded profitable investment opportunities in the other two members, there is little presumption for a loss on the part of the others. And if Kenyan predominance had prevented unnecessary and inefficient duplication then there is a fortiori a presumption for gains on their part. The use of some such procedures as Meades⁴⁾ where the volume of common market exports and imports of any one member and the degree of protection afforded them are taken as a measuring rod of the gains and losses derived from the common market is a very simple but fallacious procedure in view of the multiplicity of possible situations that may have prevailed which would have led to different assessments. Some of these have been touched upon in the course of the paper.

There is a general presumption for gains to be derived from customs unions which is especially applicable to underdeveloped countries who are in that stage of development where further industrialization requires increasing import-substitution; and where there are sufficient investment possibilities so that the location of industries in a direction of comparative advantage is possible. It would seem to be the

case that (even if the East African economies did not meet the above requirements in the past) the East African economies do meet the requirements now.

Since we are currently placed in a context where planned development is in the forefront the more pressing and important problem would be that of determining the allocation of investment to common market based production taking into account their optimal locations, and scale gains to be derived and their spread- and income-effects. A calculus would be required for taking into account alternative investment possibilities (even if some of them are not common-market based) which takes into account the tariff levels required, points of location and the various other variables which affect the choice of investment projects. Only if a situation arises where there would be more growth generated by a common-market based industry, than any other alternatives for that member, and a loss is involved for the other members as compared to what their position would have been had the other alternatives been chosen would there be a requirement for compensating these other members.

Sheetal Chand

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R.H. Green.
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ECONOMIC UNION IN EAST AFRICA: Principles, Prices, and Proceeds.

by
Reginald Herbold Green, EDRP. EAISR*

Economic Union in East Africa has the advantages and disadvantages of being an exceedingly topical as well as an important analytical subject. At least since 1961 it has become increasingly apparent that maintenance of economic union by independent East African states would require basic alterations in aims, institutions, operations, and division of gains. The 1964 Kampala and 1965 Mombasa Conferences and the 1964-1965 increase in quota restrictions plus the decision to replace the Currency Board with separate Central Banks and currencies underline the failure to achieve these alterations to date. The present East African Commission in evidence of the continued will - of all three states - to continue the search.

One of the apparent failings of previous attempts to deal with the problems of economic union in East Africa has been their ad hoc and piecemeal nature. Both the Raisman "distributable pool" formula and the Kampala Agreement firm relocation of production, quota, and allocation short list provisions share this weakness. A firmer base for evaluation would appear to lie in an analysis of the principles which have underlain economic union in the past and those which should guide it in the future, of the historic and of the acceptable future costs of economic integration, and of the past, present and acceptable future proceeds of integration. The following sections of this paper attempt a first approximation to such a base.**

* This is the third in a series of papers analyzing principles, problems, and potentials of economic union. The first two: "Economic Integration and Economic Development: Toward a Generalization of Common Market Analysis" and "Customs Union Theory, Political Economy and Tiers Monde Reality: a Critique Toward a Revision of Economic Integration Analysis" have appeared as EDRP Paper No.81, Part I and Part II. The author wishes to express thanks to the participants in the University College Nairobi - Conference of Cultural Freedom International Seminar on Economic Coordination in Africa (December 14-17, 1965) and especially to Author Hazlewood, J.H. Mensah, and Miguel Wionczek for their valuable criticisms, comments, and suggestions on earlier formulations offered in discussion at the Seminar. They are not, of course, responsible for remaining errors and misconceptions.

** Four recent analytical studies make important contributions to this effort: A. Hazlewood "Economic integration in East Africa" (Nairobi Seminar, to appear in Studies in African Integration, RIAA, edited by the author; W.T. Newlyn, Gains and Losses In The East African Common Market" (EDRP Paper 79, 1965); J.S. Nye "East African Economic Integration", (Journal of Modern African Studies Volume 1, No.4, December 1963); and B.F. Massell East African Economic Union: an Evaluation and some Implications for Policy, (Memorandum RH-3860-RC) California, Rand, Santa Monica, December 1963. Each has a narrower focus than the present paper and treats the topics with which it deals in more detail than is possible in it.

The question of principles needs to be approached both historically - the bases for East African economic cooperation-- union have shifted over time even before independence - and topically in terms of why, what, where, how, where, and when. Why union? What economic sectors unified? How has union functioned institutionally and through market forces? Where have the gains gone? When have there been significant changes?

The case for economic union was originally part of the Kenya settler - Kenya government drive for a "White Dominion" in East Africa. Even following the failure of that attempt, the groups which had sought it remained the most influential in shaping East African policy with definite results both objectively on pre-1961 economic union policy and economic structure and subjectively on attitudes toward economic union in all three territories.*

Until 1956 the general line of argument was that Kenyan agriculture needed wider markets and Kenyan industry needed bolstering e.g by the partly politically motivated 1956 moving of half East African cigarette production from Kampala to Nairobi and by bulk sale of Owen Falls Power to Kenya at rates well below those charged to Ugandan industries.** The case was, in fact, by no means self-evidently weak at this time. Pre-war interterritorial trade never significantly exceeded £1 million with a rather small net trade balance to Kenya. Post-war trade until 1956 saw Uganda fairly regularly the leading interterritorial exporter and in surplus with Kenya on the basis of cigarette, sugar, and - in some years - maize exports. Tanganyika was consistently in the position of being far more a market than a source of supply to Kenya and Uganda but after 1950 her imports from Uganda rose to exceed those from Kenya until the 1956 cigarette factory transfer.*** While Kenyan industry did benefit by the 1924 Union Tariff **** and in manufacturing outside agricultural processing Nairobi early established a dominant position, it was processed agricultural products which then dominated East African trade in manufactures and Ugandan cigarettes and sugar came to outweigh Kenyan meat, dairy products and beer.

* Neither the policies nor a fortiori the structures and attitudes changed automatically with independence. A definite proprietary and status (or perhaps more accurately movendus) quo view has tended to remain in Nairobi, a well defined suspicion in Da es Salaam, with rather mixed attitudes in Kampala. Neither historically nor structurally are these views unreasonable, they represent a fairly acute - if not very precise - evaluation of what East African economic union has meant and of the short run effects of its present form on national economic interests.

** The rates were fixed by negotiation but the UEB failed to secure prices approximating either its average cost of generation or the opportunity cost of substitute power to Kenya.

*** See Annual Trade Reports, Kenya, Uganda, Tanganyika.

**** Cf T.A. Kennedy "The East African Customs Union: features of its history and operation", Makerere Journal No. 3 (1959).

Agricultural objectives of East African economic union have always been limited or vague. - Both the desire to protect Kenyan agriculture e.g. in maize and (now) in sugar and the colonial administration penchant for a variety of controls on production, pricing, and distribution have consistently prevented the common market from functioning fully in agriculture even in principle and and have even further limited it in practice.*

Joint planning of potential interterritorial and international export agriculture to create an optimal production, transport, and use pattern has been suggested in the case of sugar but has met a very mixed reaction effectively blocking joint development and raising the question of de facto protected higher cost production in one territory displacing the established (and probably lower cost) inter-territorial exports of another.**

Coordinated policy in regard to foreign market agricultural exports has operated in at least one case - coffee under the old 1961-1962 East African quota. In fact, by pooling national quotas gains can be made - and were in 1962 - through ensuring that the highest price grades are sold first and only lower price coffee left to the residual "free market." This potential use of East African economic union was ended - or at any rate interrupted - with the separate national quotas of 1963.***

* Would be exporters have contributed to this result as well - e.g. Uganda's 1962 export ban on maize which led to a breakdown in the 1955-1961 pattern of free and growing Uganda - Tanganyika trade in agricultural commodities. It is of course not the controls, e.g. Marketing Boards, in themselves, which prevent a common market in agriculture any more than it is planning per se which threatens the common market as a whole. The problem has been the divergence in institutions and policies, e.g. of prices in the different territories, the failure even to attempt to arrive at agreed quantities and prices to be traded in certain key commodities, e.g. maize, and the tendency to autarchic attitudes in the agricultural policies of all three territories.

** Cf: C.R. Frank "The Production and Distribution of Sugar in East Africa". East African Economies Review, No.2, 1963 and The Sugar Industry In East Africa, EAISR East African Study, East African Publishing House, Nairobi, 1966; D.G.R. Belshaw "Agricultural Production and Trade in the East African Common Market" in Leys and Robson (Editors) Federation in East Africa, Oxford University Press, Nairobi, 1964, pp. 96-97; P. Newman, "The Economics of Integration in East Africa" in ibid, pp. 67-68. Frank's production cost data have been challenged but, even assuming Kenya costs to be as low as Ugandan (a point not all Kenyan investigators would support), a case for joint planning to minimize transport costs and maximize sugar agreement quotas and export revenues exists. Certainly inducing Ugandan growers to develop new capacity in Kenya rather than Uganda is neither an inherently optimal planning device from the East African point of view (much less the Ugandan) nor a step well designed to solidify economic union, threatening as it does one of Uganda's major inter-territorial exports.

*** Cf. Belshaw, op cit, pp. 98-99.

Promoting the establishment of industry was always a goal of East African economic union policy but became more prominent after World War II.* The cases presented have been a) the East African market is large enough to attract industries which no one territorial market would interest and b) within the three territories advantages of location exist making for a more efficient pattern of industrial location than would be possible on an autarchic basis.

The 1945 proposals interpreted the second argument to call for an overall industrial licensing and location policy in the context of a joint industrial development plan. In fact, industrial licensing as introduced in 1948 was not only limited in coverage but also permissive rather than inducive and no attempt at overall industrial location or industrial development planning was again made until the 1964-5 Kampala - Mbale Agreements.** However, in general concern has centered on the inducement effect of the larger market with a laissez faire location policy favoured by Kenya, a direct state participation approach followed by Uganda through the Uganda Development Corporation, and a specific inducement cum subsequent exclusive scheduling procedure advocated by Tanzania. More active development planning has increased state involvement all round, but Kenya still supports a more competitive (or entrepreneurial free choice) approach to industry siting and Uganda as well as Tanzania a more pre-planned approach of allocating specific East African industries to each state to promote. These approaches probably do correspond to territorial interests. Because Kenya is located between the other two markets (in terms of transport links) and has the largest single market, purely marketing and imperfect competition considerations will tend to result in concentration of production there unless Uganda or Tanzania production cost advantages or the importance of transport costs is large. UDC has been the most effective of East African promotional bodies; Tanzania's main successes in securing regional market directed firms have come under the allocation section of the Kampala-Mbale Agreement.

Inducement of additional foreign investment as a goal tends to turn on the same concerns as industrial growth promotion. Other sectors are either not particularly dependent on East African economic union, e.g. export agriculture, or are likely to be made more attractive by economic union through its promotion of industrial production e.g. commerce, finance, road transport. This case is therefore not an additional why to promotion of production but a necessary condition for such added production and a probable result of the additional opportunities for profitable output opened by economic Union.

* See Inter-Territorial Organisation in East Africa, Colonial 191, London 1945; Revised Proposals, Colonial 210, 1947; HMSO; East Africa Royal Commission 1953-5: Report, Cond. 9475, HMSO, 1955. East Africa, Report of the Economic and Fiscal Commission, Cond. 1279, HMSO, 1961.

** Even then the list of allocated industries was short, the long term industrial study commission was not appointed, and serious problems have arisen in regard to national acceptance of the allocation provisions.

The argument for East African economic integration based on savings derived from more efficient operation of a wide range of services on a joint basis is primarily of post-World War II vintage. The 1945 Proposals put forth this case most strongly and led not simply to the High Commission institutional structure of 1948 but also to the actual consolidation of the services both self contained and EACSO.* Since 1945, this has been the one area in which there has been relatively little overall national divergence on the reality of East African and national gains although a series of overall and particular disagreements on the reality of national gains from joint operations (including tourist promotion) and the weakening of at least two more (including the University of East Africa).**

If the above examination of historic and present "whys" appears somewhat fragmentary, imprecise, and loosely organized this is precisely the impression left by official reports, the CIA debates, the public discussion as covered in the press, and - indeed - some of the academic analyses. A more unified set of goals to be sought from union is needed not simply for intellectual neatness but to provide a more satisfactory operational framework for policy and institutional formulation. The post 1962 focusing on the attainment of higher rates of development as the primary raison d'etre of economic union is a step in this direction although there has been a related tendency to center on the industrial sector to the exclusion, e.g. of agricultural raw products and processed goods and of tourism and a quite misplaced emphasis on bilateral trade balancing as a goal.

The attainment of the socio - economic goals set by all three East African governments requires both rapid growth in national output and the development of new structures of production and employment.***

* Some consolidation between Kenya and Uganda e.g. the Mombasa - Nairobi - Kampala Railroad did exist but the post 1948 scope of joint activity was very much broader both geographically and functionally.

** Arguments have indeed arisen over whether railroad route and rate policies have favoured one state at the expense of another. These controversies were perhaps sharpest in the 1920-1939 period when Uganda challenged the roundabout route of the Kampala extension and the low rates for Kenya settler products - particularly maize - as injurious to her interests. Tanzanian voices have, in recent years, sometimes queried the routing of some Meshi-Arusha area exports and most imports via Mombasa instead of Kenya. Controversy over the tariff structure is endemic but stems as much from a lack of data on what costs (and therefore subsidies and taxes to particular goods) are, as on territorial inequities. Nonetheless, the balance of opinion in each state since 1948 has been that it benefitted from railway unification. If A. Hazlewood, "The Co-ordination of Transport Policy", in Loys and Robson (Editors), Federation In East Africa, Oxford University Press, Nairobi, 1965, and Road and Rail in East Africa. Blackwell, Oxford, 1964 and M.F. Hill Permanant Way.

*** See EDRP No.81, Part I for a more detailed development of this point.

The most relevant "why" for economic union in East Africa today lies in the contribution it can make to increasing these rates of growth and development in the future for East Africa as whole and for each territory individually.

The potential growth rate gains - like the sectoral gains usually considered in static terms - flow from the increased economic size of East Africa as opposed to any one territory. These are not, however, the static comparative efficiency - economy of scale relocation gains central to most customs union discussion. Eight contributions - five primarily linked to creating opportunities for higher growth and development rates and three primarily to financing them - can be distinguished:

1. Certain lines of production which would not be economically feasible on a territorial basis become possible (demand passes minimum economic threshold) regionally;*
2. Advantages of location in the industry and agriculture (natural e.g. raw materials or created e.g. infrastructure, market, transport) will be greater within the union especially as some markets in each territory are logically served from another and certain inputs for processing and manufacture could likewise be traded advantageously;
3. Specialization - in particular industries or complexes of related industries and raw material producing units on the one hand and in particular sub-lines within broadly defined products on the other - is possible to a greater degree in the roughly tripled market. The cross trade in both textiles and shoes almost certainly flows from efficiencies of specialization. Within product lines, gains which for industry (and possibly certain types of agriculture) are more important than the broader static comparative advantage specialization gains. These created advantages of scale and of concentration of effort tend to become increasingly significant as industrialisation progresses;**
4. Increased efficiency in terms of speedily adopting new techniques - as well as incorporating efficient ones at the time of plant construction - becomes possible with larger absolute increases in annual demand for particular products whether from a larger base market or a higher growth rate;
5. The new product lines made possible under the first category and the types of change within product lines made possible by the second through fourth will result in a makeup of domestic market production with a higher than previous average income elasticity of demand and, by and large, a lower import component. On the one hand, this means that for any rate of growth of national product (including exports) there will be an increased rate of growth of demand for domestic market output and, on the other, that for any level of import capacity a higher level of national product is compatible with international balance.

* On the threshold concept in re protection Cf H. Myint "Infant Industry Arguments For Assistance-Industries In The Setting of Dynamic Trade Theory" in Horrod and Hague (Editors) International Trade Theory In a Developing World, Macmillars, London, 1963.

** Cf. B. Balassa "Trade Liberalization and 'Revealed' Comparative Advantage" Manchester School, May 1965.

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6. Greater efficiency in the provision of services can provide a flow of investible surplus (public via surpluses on services and greater auto-financing by them or private via lower charges) which would otherwise be required for public recurrent and private intermediate expenditures;
7. Changes in efficiency levels will affect, not only recurrent costs per unit of output but also capital costs per unit of capacity so that the new pattern of production possibilities will, in general, be characterized by lower capital-output ratios and thus a higher growth rate for any given level of investment;
8. Additions to economically viable lines of activity and increased efficiency in others should, by and large, attract certain types of foreign private capital and of project viability oriented public loans or grants on a larger scale.

The possibility creating and financing gains are not exclusive. Once lines of production benefit by gains two through four, their lower costs (presumably resulting in higher profits as well as - or more than - lower prices) result in additions to the flow of investible surplus for financing growth.

The question of what sectors to view as part of the East African union economy has flowed and presumably will continue to flow from the "why" case advanced.

Rail and air transport, the bulk of tax collection, and a number of research - administrative - economic - social services have been operated jointly since 1948 under High Commission and Common Services (broadly defined to include the self-contained services directly responsible to ministerial committees and the CLA) auspices. Clearly the reason has been the capture of expected gains in efficiency (scale, overhead spreading, seasonal scheduling, etc.) from East African as opposed to territorial operation. Almost equally clearly - albeit exact data have never been compiled - those gains have been of some significance.*

* What estimates there are of gains on joint services tend to be either purely approximations to cross-subsidization of particular territorial losses by the joint services (which clearly net to nil for East Africa) or mixed guesses as to subsidies and true efficiency gains. This unfortunate emphasis on redistributive effects netting to zero e.g. in trade balance and income effect of industrial location calculations, rather than the net gains to East Africa from greater efficiency or additional productive activity made possible, pervades the entire post - Raisman discussion with fairly obvious negative results in attitude conditioning.

Fiscal policy has been - increasingly from the 1917 creation of the Kenya - Uganda free trade area - coordinated because of its relevance to effective common market operation. A united - or at least a united minimum * - external tariff is necessary for protection ** and common (or at least approximately common) excise rates are needed to allow free interterritorial goods flows without tax evasion. The common company tax has been viewed as a necessary base for free location in accord with (laissez faire) economic principles within the common market and the common income tax as a parallel base for allowing market forces free play in attracting (basically expatriate) skilled and professional manpower.***

Common currency and - with the 1955 and subsequent broadening of currency Board Powers - closely coordinated though not identical monetary policy (the uneven use of fiduciary issue rights has already introduced some difference) have been operated to facilitate common market transactions and to preclude trade and payments disruptions caused by differing rates of cost and price changes.

Trade in industrial products and in several interterritorial agricultural exports of the Kenyan settler sector **** has consistently been free. Other agricultural trade - for reasons noted earlier - has been less uniformly treated with varying restrictions especially on the part of Kenya.

Modifications of industrial free trade have taken the form of location scheduling (both permissive as under the licensing system and active as under the Kampala Agreement), of more or less forced relocation of production by political suasion (as with cigarettes in 1956 and with cement, beer, shoes, cigarettes in 1964), and of quota restrictions (Kampala Agreement). The first, of course, alters the balance of trade but not necessarily the level (given a constant volume of production) while the latter two necessarily decrease interterritorial trade at a given level of output.

* At times duty surcharges - largely by Kenya for territorial market protection - have been allowed. These, in effect, represented a special Kenyan but not East African protected market and were thus fragmentary in impact. Revenue surcharges, however, would be possible without any market fragmentation especially on goods not produced in East Africa.

** As the previous note suggests it is by no means evident that a common external (revenue) tariff on products wholly imported into a common market is a logical or economic necessity. It is, of course, a requirement for G A T T approval!

*** Under free market and free selection of location conditions, the common rates fairly certainly have tended to polarize activity. To decentralize production and reduce the Nairobi - centric preferences of expatriate personnel within a basically free market mechanism lower company and income tax rates should have applied in Uganda and - a fortiori - Tanganyika.

**** For a more general view of the settler influence on Kenyan economic policy of which economic union policy forms a significant but secondary part see E. Brett "Economic Policy in Kenya Colony: a Study in the Politics of Resource Allocation", EAISR, Conference Papers, Kampala, 1965.

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Tourism was partially a joint sector but the East African Tourist Travel Association was limited to joint external promotion and did not undertake either coordination of territorial facility development or the creation of inducements to visit more than one territory. As a result, what unification existed ended in 1963 with Uganda's withdrawal on the grounds that she received 9-10% of the tourists but paid 25% of promotion costs.* In practice, East African Airways has kept a minimal joint tourist promotion service in being.

The future pattern of unified economic sectors will be shaped both by the minimum degree of joint economic action needed to achieve any of the gains cited earlier and by the willingness of East African states to unify greater or lesser portions of their economic sovereignty. The latter factor depends not merely on the gains they expect to accrue from such action but on the limits on desired economic policies they see as ensuing and on the overall climate of political relationships in East Africa.

Clearly if gains from new lines of productive activity are to be secured there must be - at the least - a designated product common market ** for those products and their raw and intermediate inputs. Further some degree of coordination (though not joint operation) of transport and communication is necessary to make trade physically practicable and economically viable.*** Similarly, coordinated monetary, fiscal, and exchange policies (but neither a common currency, a common central bank, nor identical taxes) are needed to maintain a common external protective tariff, to avoid monetary and clearing hindrances to trade, to prevent radically different overall price level movements, to limit factor and goods flows based on tax avoidance incentives, and to prevent one country serving as a channel for capital flight or other exchange control evasion by residents of another.

In the case of East Africa, certain additional areas of joint action are, if not necessary, highly desirable. Given the net gains from the joint services most - if not all - should remain in the unified portion of the East African economy. There is a strong likelihood of unequal gains from large scale industry. Further there are both locational and specialization advantages for industries which could, in principle, operate on a national market basis which are likely to be even more unequally distributed territorially.

* As the tourist revenue in question was £80,000 and the promotion contribution £6,000 while the minimum for effective UK tourist advertising appears to be £20,000, it is not clear the Ugandan decision was sound. Absolutely it may well have been a costly error.

** The concept was originally advanced by Prebisch in relation to Latin American Integration. It has been developed in East African context by J. Ilett in "Designated Product Common Markets", East African Economics Review, December 1962.

*** These economic union in production and trade facilitating roles do not, of course, constitute the bulk of EARRH operations. EARRH is basically an external export - import trade facilitating service and, indeed, provides distinctly patchy facilities for East African commerce, especially between Uganda and Tanzania.

In part these gains can be divided "more equitably" (on a "politically more acceptable" basis?) by a joint location planning policy. However, in addition, there is a case for adding more sectors in which net gains to East Africa are likely and in which substantial gains will be seen to accrue to Tanzania and Uganda. Two examples are coordinated tourism development - including joint East African tour package and facility planning - and selected agricultural specialization (a designated product union agricultural sector). Two obvious advantages of broadening union economic sectors in this way are that it allows greater attention to economic efficiency in the location of any particular productive unit and also the "evening" of territorial gains by increasing the total rather than redistributing it.*

It is not essential that each state gain on each individual union economic activity, nor that interterritorial trade be bilaterally balanced, nor that state overall gains be precisely equal. It is essential that each state gain significantly on the sum of union economic activity, that the productive location and structure imbalance of which trade imbalance is a symptom be reduced, and that there be an agreed division of gains much closer to equality than the present pattern.

The how of East African economic union has been largely laissez faire, albeit in the case of the services, public neo-laissez faire. This particular structure has created two problems: the visible and impressive EACSO - Currency Board mechanisms have created an illusory sense of overall economic control while the laissez faire basis of the union has become increasingly inconsistent with the growing commitment to planning in each of the territories.**

The Common Market - prior to the Kampala Agreement - had no institutional structure and still has no statute base (the draft treaties prepared following the Mbale continuation of the Kampala talks have not been seriously considered to date). Admittedly the CIA can discuss the common market but it cannot legislate about it and if the East African Authority were to act on it they would do so - as at Kampala and Mbale - as heads of state not within any ongoing institutional framework.

* For a somewhat similar analysis of necessary and desirable additional areas of union economic activity of Hazlewood op cit.

** The inconsistency is least in the case of Kenya for two reasons. First Kenyan industrial development policy is largely an inductive one aimed at maximizing private action and a laissez faire common market coupled to Nairobi's historic (and partly artificial) advantages is an inducement to Kenyan industrial development. Second, planning on the basis of Kenyan industrial leadership is possible within a laissez faire union framework because the centralizing tendencies allow fairly accurate predictions of additional demand for Kenyan manufactures resulting from Ugandan and Tanzanian development so long as these states do not hinder the laissez faire dynamic equilibrium pattern (as of course Tanzania has by its quotas and bans on Kenyan and, peripherally, Uganda manufactures).

At least in principle two exceptions exist - quotas and industrial licensing. In practice the quota committee set up to approve proposed restrictions allowed by the Kampala Agreement has not been particularly functional. None of the three sets of Tanzania restrictions (nor for that matter the very recent Uganda ones) actually went through the agreed process before imposition.* The industrial licensing - as noted above - has been passive not active as originally proposed in 1945. As a result it has not significantly affected location. Further, for over a decade before 1964 no new industries were scheduled because each proposed one was blocked by one of the states not having the initial plant (each of the three states appears to have vetoed one or more proposals). Recently the licensing board has been somewhat more active and, at least in textiles, may have approved - encouraged an additional capacity programme weighted toward Tanzanian and Ugandan industrial expansion.

One result of the laissez faire nature of the common market has been that all "amendments" to date have been either passive, e.g. licensing, or restrictive, e.g. agricultural barriers, cigarette plant move, Kampala quotas and production switching with the single exception of the 1964-5 industry allocations. Without a mechanism for operating a planned common market, this trend to death by attrition is almost inevitable as planning becomes more important and market force obstacles more apparent.

The late Currency Board was - until 1955 - a pure laissez faire body. It functioned adequately given colonial economic policy and British branch bank willingness to finance expatriate economic activity expansion. With the waning of at least the first and the lessening relevance of the second after the mid - 1950's, the Currency Board began to change toward a central bank with fiduciary and bank rate powers.** The basic problem was not that the Board could not be converted into a central bank, but that the original linking of Central Bank and Political Union created an atmosphere in which subsequent disagreements on degree of territorial vs central control over monetary policy, size and definition of fiduciary issue, and exchange control could not be resolved except by creating three separate banks.

* This is not to judge whether the restrictions were as envisaged in the Agreement or not. At least the bulk of the Tanzanian ones appear to be appropriate in principle but more sudden in incidence (and thus likely to lead to non-East African imports until Tanzanian capacity expands) than postulated. Further after the spring of 1965, the new Tanzania quotas have been linked to Kenya's non-passage of legislation on the scheduling of the Kampala - Mbale allocated industries; at least the fall 1965 restrictions apparently would have been withheld had such legislation been passed. Discussion of "responsibility" for the cumulating breakdown here is pointless - neither state wished it but both acted and reacted in ways contributing to it.

** Cf. W. Newlyn and A. Rowan, Money and Banking in British Colonial Africa Oxford, 1954; Mc. William; "Is There a case for an East African Central Bank", EAER, January 1959; Hazlewood, op cit, Section V.; Newlyn, "The Significance of Separate Monetary Systems In East Africa", this volume.

*** Cf. Currency Board Reports 1963, 1964, 1965; Paul Clark, "The Role of an East African Central Bank in Accelerating Development", EDRP 46, 1964; F. Blumenthal, The Present Monetary System and its Future, Government Printer, Dar-es-Salaam, 1963; W. Newlyn, "Monetary Systems and Integration", EAER, June 1964; Hazlewood, op cit, V and VIII.

No state wanted complete disintegration and each sought to avoid it, but each believed its own positions on degree of decentralisation, exchange control, and fiduciary issue to be incompatible with those of at least one other state.*

EACSO and the self-contained services do, indeed, have massive structures but almost wholly of administrative and autonomous business enterprise management natures. For the services this may well be appropriate and for EACSO's actual operations it is not necessarily inappropriate, ** but the result is that an impression of union economic organization results which does not correspond to reality.

EACSO has had an economic research and advisory unit for little over five years and even today it is far from adequate for presenting a detailed analysis of union economic problems, realities, prospects, and opportunities. Indeed, it is not really seen in that light but as a special study service body to the inter-territorial ministerial committees somewhat vaguely and peripherally linked to EACSO. The EACSO statistical department is less hampered by lack of staff but has no powers to secure adequate data - even from the self-contained services - to provide a base for economic analysis of union, let alone the authority to seek to develop a definitive balance sheet of East African and territorial gains and losses from union economic activity as a whole.

The CLA - despite its apparant powers - was created almost solely as a device for avoiding the difficulties inherent in enacting identical legislation in three parliaments.*** It was and is intended to formalize agreed inter-state decisions not to initiate nor substantially to revise legislation. While it has served a certain role as a "talk shop" for East African economic union its net legislative contribution is at best low and concentrated in the field of tax legislation marginal modifications.*** The facade of debate hides the absence of constructive substance and the technical possession of legislative authority the absence of any real territorial delegation of power to their CLA members.

* This judgement is based partly on press and Currency Board Report statements of position and partly on 1964 and 1965 interviews. It is not clear that the disagreements were as basic as supposed; the actual Tanzania Central Bank foreign reserve requirements and fiduciary issue limitations, for example, show how far from the truth it is to view Tanzania as a proponent of "development by printing press." What was (and is) basic was the belief that basic divergences existed and that in a unified Central Bank one could not always protect ones own national interests.

** In fact rather too much authority has been delegated to apolitical administrators with very vague "politico-economic" goal frameworks. Cf. Hazlewood, op cit, and "The Coordination of Transport Policy" in Leys and Robson, op cit. This is, of course, quite in keeping with the overall laissez faire pattern of East African economic union.

*** Cf. Hazlewood op cit; also discussion with one of legal experts involved in 1961 creation of EACSO and associated CLA revisions.

**** Conceivably it is negative, vide the recent amendments to the proposed 1965 Income Tax Bill passed over unanimous ministerial opposition, which will weaken the act so far as additional fund raising is concerned.

Green

Real agreement making power lies in the inter-territorial ministerial committees and the EA Authority. Composed of busy men, meeting rarely and briefly, and with inadequate East African advisory staffs, these do not constitute an East African Forum or even a channel for developing agreed union policies but only for at best compromising pre-formed nation positions or - at worst - sharp clashes preventing agreement.

To liken the EACSO CLA Ministerial Committee to EEC's Authority - Assembly - Delegates Council is dangerously misleading. The European Authority has the very real power to make proposals based on community joint interests and - equally critical - the technical and economic staff to formulate them convincingly and operationally. The national delegations have not simply pre-set positions but real leeway to negotiate and to reach decisions which - except in very unusual circumstances - will be ratified by their governments. Further the entire frame of operation is basically and increasingly that of a semi-planned, not a laissez faire, economic union.*

If East African economic Union is to be maintained - let alone expanded - a new outlook and an appropriate institutional structure will be needed. The outlook hinges in the acceptance of a simple, but apparently still imperfectly perceived,** premise: Any economic union must be based on an economic philosophy - policy structure consonant with that of its member states. A laissez faire customs union is appropriate only if the member states pursue (allow?) laissez faire internal policies.

The economic union appropriate to national economic planning focused on development is a planned economic union (including planned general levels and makeup of trade and of location for union market production) centered on union economic development and its equitable (acceptable) distribution.

An institutional pattern appropriate to this outlook could include:

- 1.) Coordination of national East African policy in each state under a Minister for East African Affairs with a staff to supercede the partial, uncoordinated (nationally), and part-time scattering of such affairs. Related to this could be an Assistant Secretary for East African issues in each relevant ministry;
- 2.) Revision of the Central Legislative Assembly to make it a genuine forum for decision making. National delegations - headed by the East African Affairs Ministers and composed of persons whose primary responsibilities were for East African (and presumably, at present, East African economic) affairs should be informed in detail on national goals and positions and given significant leeway to bargain and to reach agreed decisions without referral of all substantive issues back to their capitals.

* Cf. e.g. U. Kitzinger "Regional And Functional Integration", International Seminar of Economic Co-Operation In Africa, Nairobi, December 1965.

** Cf. e.g. the discussion of planning as a disintegrative force in A. Mazrui, "Political Commitment and Economic Integration", Nairobi Seminar. The logic of the position is sound only if the Union is laissez faire. Admittedly plan coordination is harder - by its nature - than laissez faire coordination but it is also potentially more rewarding.

A strengthened East African research and advisory staff could both service the CLA and submit studies directly to the governments via the Ministers of State. The revised CLA would substitute a more specialized, informed, and union oriented body for the present ministerial committees;

- 3.) Planning and policy coordination committees, a union market production location body, and all joint services would be responsible to the CLA. Basic frameworks for their decisions - especially a production location* - would be set by the CLA and their specific decisions reviewed and approved (or amended) by it;
- 4.) The East African research and advisory staff to service the CLA and the committees would be responsible for analysis and proposals concerning the union economy and its policies with particular reference to accelerating development. It would have the authority (and resources) to undertake an ongoing overall programme and to initiate specific studies as well as to carry out specific CLA or committee requests.

The where of East African economic union gains has probably changed over time. On the whole it is hard to locate any substantial gains either net or redistributive in the pre-World War II period. Common market trade flows were low. Kenya had a steady surplus and industrial leadership but at this stage the smallness of the market and the concentration of purchasing power in the Nairobi - Highlands area would probably have prevented national protective policies in Uganda or Tanganyika from working. Kenya then probably had a modest net gain in industrial output and resultant multiplier effects and Uganda - Tanganyika little or no net loss on this account. However, Uganda and Tanzania can hardly have gained substantially from added exports to Kenya and lost some tariff revenue through substitution of Kenya goods. Uganda and Kenya both gained by the joint operation of their railroad system.

From 1945 through 1955 Uganda improved her position and probably became the key gainer. Here sugar and cigarette exports were critical. Kenya continued to gain from her industrial sector's serving East African markets but at least vis a vis Uganda there was a balanced (or Uganda biased) division of union market operations. All three states benefitted from the joint services - at least on direct effects. The Kenyan concentration of expenditure and related income effects may have cancelled most of the gain for Uganda but not for Tanzania which received de facto transfers covering deficits in rail, post and telegraph, and - later - air services. Whether a Tanzanian industrial protection policy could successfully have been instituted at this stage is doubtful. Net gains to East Africa were - for the first time - significant but probably below 1% of combined territorial products.

* See the final section below for elaboration of this point.

After 1955 the size of Kenya's share in net gains rose steadily at least until mid - 1965. Direct service coverage of de facto territorial deficits benefitted Tanzania (and peripherably Uganda) but the expenditure concentration and income effects from the services redistributed income to Kenya. Net gains on joint as opposed to national service operations (EACSO and self-contained) were probably substantial and, of course, were net for East Africa unlike the deficit and redistributive income effects.

Since 1955 the Common market has been of significant value to Kenya and to Uganda. After 1969 it came to be of some significance for Tanzania. The basic question is how much of the Kenyan based East African industry could have been relocated in Uganda or Tanganyika under national protective policies and at what cost. As Professor Newlyn has pointed out,* industrial census data show very few industries dependent on regional markets. Typically the average plant size is below the consumption of any one East African State. Thus in the cases in which interterritorial exports are significant it would appear feasible to have located one or more plants in the importing territories without any significant loss of scale economies. Given the multiplier effect of the incomes generated in the industrial sector and the low Kenyan marginal propensity to import from Uganda and Tanganyika, a case exists for believing Kenya made quite significant, Uganda real but small, and Tanganyika negative gains from the Common Market.**

Overall, East Africa benefitted to some extent from economies of location and of scale in production. However, even in 1964 tentative calculations suggest only a 1.4% net addition to East African regional real product. This level raises the issue - considered in the concluding section - of whether the potential net proceeds of economic union are large enough to justify major effort to maintain it.

* See W. Newlyn "Gains and Losses" op cit.

** This argument is based on the assumption that protected national production - not substitution of extra regional import sources - was the alternative to the East African Common Market. In this case, value added and multiplier effects of "shiftable" trade measure transferred gains and losses between states while scale and location efficiency savings result in net regional gains.

If one assumes - as Tanganyika and Uganda did, at least in part, prior to 1961 - that extra regional import sources would be substituted rather than territorial protection, the importing state's transfer loss approximates the external duty which would have been collected if regional imports had come from abroad. The "transfer" gain calculation remains the same but may now be greater or less than the transfer loss. The conclusion of clear net Kenyan and East African gains, marginal Ugandan gains and clear Tanzanian losses remain true under this alternative assumption.

Kenya appears to have gained perhaps 3-4% of GNP by the overall effects of economic union and Uganda about 1½% while Tanzania may have lost 1% *. However, taking solely public revenue and expenditure gains all three states benefitted. The Kenyan dominance was in private production and income effects not cost savings or tax revenues.

The previous analysis indicates the answer to the last question: when? East African Economic Union history and effects fall into four major periods: 1917-1939; 1948-1955; 1956-1961; 1962-65. The first period was one in which the economic effects were distinctly limited. 1948 marks the beginning of joint services (following the 1945 proposals); 1955 marks the shift from Ugandan - Kenyan balance (or Ugandan leadership) in production for East African united markets to growing Kenyan dominance.

1961 is not significant for the creation of EACSO - which was a technical and derivative change - nor the Raisman Report which notably failed to lead to a reversal of the growing imbalance in division of gains. It did mark the advent of East African national states with active, territorially oriented development policies inevitably inherently in conflict with the laissez faire basis of existing East African Union. The pattern of growing tensions, recurrent attempts to reach solutions, and narrowing of union by erosion (e.g. tourism), major subtraction (e.g. currency), and growing attrition (e.g. quotas) has continued to date.

III

The price of economic union is partly economic and partly political. In both cases, the loss is partly in terms of limitations on freedom of choice and partly in specific transfers of economic benefits or power. Few of these are precisely calculable and none can even be approximated usefully without some idea of the alternatives to economic union posited and the range of seriously considered policy choices for closed by economic union.

* The gains are discussed in more detail in the concluding section. While the calculations are rough the overall orders of magnitude suggested are of interest as only very different assumptions about either economics of scale, degree of industry shiftability, or multiplier effects could alter them radically. The detailed sectoral calculations and the assumptions underlying them are presented in Appendix B.

Tanzania's loss appears fairly certain on a static basis. Given the very low spill over effect of Kenyan demand to Tanzania, the dynamic effect of earlier East African (Kenyan) industrial establishment can hardly have offset this. However the extent of the loss may be overestimated if one believes industrial census categories result in overstating the number of shiftable industries.

For purposes of this assessment it will be assumed:

- 1.) that the alternative to East African imports of "shiftable"* industry products is protected national production;
- 2.) that each state proposes to pursue semi-comprehensive development planning with a substantial public and a substantial private sector role;
- 3.) that no state intends to pursue "development by inflation" as a goal and that all regard relatively stable or, at most, slowly rising, price levels as a significant goal.

At least six areas need some attention: political sovereignty, economic sovereignty, economic coordination, economic disclosure, current national product maximization, growth of national product maximization. In each case the attempt should be to compare results with East African economic union to those plausibly attainable without it, recognizing the limitations of East African national action quite apart from (and very much more important than) economic union.

Political sovereignty in the abstract sense of nationhood is not substantially effected by economic union. In the sense that economic means vital to socio-political ends are limited by union, this issue becomes one of economic sovereignty.

On the other hand, certain real political limitations (costs) do exist. Radically divergent socio-political systems e.g. neo-laissez faire capitalism and even fairly revisionist Marxian socialism are probably incompatible with effective economic union on any broad front. However, the divergence of East African political systems does not appear to be of this order of magnitude nor likely to become so in the near future.

Internally, real problems may arise in explaining (justifying) decisions agreed to in a joint body when the individual decision does not benefit the country in question. The temptation is to shift criticism by blaming ones partners or economic union per se. Should this line of justification be taken, vide the Uganda government's reaction to 1962 tariff and excise decisions,** the entire union structure tends to be endangered. As a result certain limits on the handling of criticism directed to joint decisions are imposed and these may have fairly high short term political costs.***

* A "shiftable" industry is defined as one:

- a) in which typical East African plant size is below national demand; and
- b) for which production is physically feasible and economically viable given a protective tariff not more than 25%, or the present East African duty plus 10: ad valorum whichever is higher.

The latter point is highly arbitrary but some assumption on protection levels is vital to define shiftability and the ones made would still be relatively low vis a vis typical protective duty level in South Asia, Latin America, or West Africa taken as a measure of additional cost acceptable to secure national production.

** Cf. J. Nye, "Extent and Viability of East African Co-operation, op cit, pp. 53-54.

*** This is particularly critical today in Uganda with a multi-party system and substantial disagreements within the government party. Defending an unpopular East African economic agreement could conceivably cost an election either in the country or within the party and most certainly could result in the "responsible" minister being jettisoned. For any individual minister a parallel risk pertains in Kenya and possibly Tanzania.

Green.

More basic challenges to union stem from the belief that economic union is inseparable from full surrender of political sovereignty, e.g. in re overall foreign policy military and defense issues,* party systems, election patterns, press and information control (or its absence). This - as EEC demonstrates is not necessarily true at least in the short and medium run.** What is necessary - and can be confused with political union - is the necessity for a joint economic decision making machinery whose actions will have real, but limited, political implications.***

East African economic sovereignty is limited jointly and even more limited nationally. It is not at all implausible to argue that - defined as effective control over the nature and pace of economic decisions affecting their economies - national economic sovereignty can be effectively greater within economic union. However, at present, the costs are more in evidence or at least more immediately perceived by East African governments, particularly that of Tanzania with its less developed economy, more ambitions and state centred development plan, and unsatisfactory position vis a visa economic union gains.

Economic union imposes limitations on:

- 1.) Overall economic strategy in re programmes of industrial and agricultural development, public - private sector relationships and roles, redistributive effects of fiscal policy, and - probably - overall growth rate targets;
- 2.) Fiscal and monetary policy both as it affects specific commodity prices and overall rates of price change;****

* Indeed one common market (Central America) continued to function more or less normally throughout a period of de facto war between two of its members, admittedly a rather extreme case. In East Africa, Kenyan and Tanzanian relations with Somalia are distinctly different without apparent strains on economic union resulting.

** The present EEC problems do arise from a conflict of French nationalism with supranational economic proposal making (the European Commission) and decision adoption (the qualified removal of national veto power). However, the conflict is on the economic, more than the general political sovereignty issue and - vide the presidential election campaign and results - is not a necessity based on French public opinion but a largely personal choice by President de Gaulle which, on balance, reduces his internal political strength.

*** Some of the East African discussion on Federation and on economic union suggest such a confusion. however, for the separation to be valid one must assume that distributive controls to secure appreciable (politically acceptable) benefits to all participants are possible within the limited framework of economic - without political - union. At present, all three East African governments accept this assumption at least as an initial starting point although serious doubts as to its validity exist in Tanzania and possibly in Uganda.

**** The specifically economic union limit can easily be overstated. Given the porous frontiers, radically different tax and price policies would cause serious illicit trade problems under any circumstances - as they already do for agricultural commodities excluded from the Common Market e.g. maize.

- 3.) International economic policy especially in re bilateral agreements and counterpart aid based on the sale of granted or loan commodities and financing of public programmes with the proceeds.*

These limitations are real but how significant they are in East Africa today may be questioned for two reasons. First the cost imposed by Union is rarely identity of policy but only parallelism and avoidance of major discrepancies. This can allow considerable leeway on such issues as state role in industry, trade agreement use, nature of taxation and specific tax levels, overall growth rate goals, and income distribution objectives. Second East African economic policy choices - partly because of external constraints - are not radically divergent and are least similar precisely in the areas cited in which fairly considerable divergences can be compatible with planned economic union.

On the plus (proceeds or negative costs) side, to the extent that economic union augments the range of viable productive possibilities and/or external bargaining power available to East Africa, each state's effective economic sovereignty is increased. Two recent ECA reports ** suggest that very substantial gains may be found along the first course while a proposal by Dudley Seers appears relevant in regard to one portion of the second.***

Economic coordination and disclosure costs are real but more matters of personnel and time and of specific procedural changes than of overall conflicts of interest. Personnel and time are, in fact, one of the constraints on how broadly based an economic union in East Africa can be in the near future. The formulation of consistent, detailed national plans is still barely within national capacities; their total regional coordination remains beyond them. However only certain key economic decisions need to be coordinated i.e. large scale industry, major agricultural programmes, trunk communications, broad monetary and fiscal policy. Given the will, the manpower for such action either exists or could be recruited by the states for a central union research - advisory body while the time loss in coordination need not be excessive given the detailed discussions necessary internally in any event.

Coordination - by its nature - limits certain decisions. However, to the extent these concern production for the union market, ending the union would narrow not widen the choices available. E.g. if the East African economic union can support one efficient nitrogenous fertilizer factory, one integrated iron and steel industry, and one agricultural machinery plant, union plan coordination will probably mean that each state can develop only one.

* Again the limits are often overstressed. So long as the common external tariff is applied and commercial prices set (which most trade agreements including those of socialist states do) protection is not per se weakened. A problem does arise if credit terms are such as to cause substitution of such imports for common market production e.g. PL 480 grain in Kenya for Ugandan or Tanzanian.

** Report of the East and Central African Industrial Coordination Mission, E/CN.14/247, 1963; Industrial Coordination In East Africa: A Quantitative Approach To First Approximations, E/CN. 14/INR/102, 1965.

*** "Big Companies and Small Countries : A Practical Proposal" Kyklos, No.4. 1963.

However, if union dissolves each state can choose none not three because of their non-viability on a national market basis. To the extent "shiftable" productive units are concerned, an equitable distribution of gains should imply that choices of domestic production foreclosed, e.g. of Kenyan sugar, by coordination are balanced by choices of union exports, e.g. of Kenyan clothing and tinned foods, opened by parallel limitations of choice on other parties.*

Income level and growth maximization costs can be treated a) in the absence of and b) with effective mechanisms for allocating production to allow equitable distribution of overall net union gains. At present, the first situation pertains; attempts e.g. Raisman, Kampala, to rectify imbalances are marginal or attritionary, not effectively redistributive.

To the extent that economic union relocates production in a way resulting in the total direct output and income effects (including additional demand generated by the gaining state's higher income) in one state being negative that state loses by economic union. To the extent that the real costs of causing "shiftable" production to return to the loser state are less than its present loss, the state will make a short run gain by leaving the economic union and following tariff - tax policy (or a state investment - import quota policy) resulting in the shift. Tanzania believes herself to be in this position, almost certainly correctly.

if These losses are not readily evaluatable from overall trade returns. In the first place, additional raw material output demand plus industrial value added represent the initial gain to the exporter not gross export proceeds. Second multiplier effects (probably about 2 for industry and agriculture and 1.5 - 2 for services) increase the initial adjusted value added gains through demand generated for other products of the producing territory. Third these gains/losses will be partially offset/a portion of the resultant national product is spent on products of the territory away from which union has initially shifted certain productive units.

On a dynamic basis the territories away from which the most rapidly growing sectors of production have been shifted by union will find that with a given effort their national product will grow less rapidly than that of the territory gaining from the shift. As a result initial divergences will tend to become cumulative and apparant static gains may mask real dynamic losses through low growth rates.

Taking the present East African structures of production, positing a 6.5% overall growth rate for regional output, and applying plausible rates of growth in demand sector by sector suggests the growth rate cost of laissez faire economic union in East Africa may have become considerable for both Tanzania and Uganda. The territorial results consistent with Kenyan maintenance of its present share of East African industrial production and equal development effort by each state are Kenya 6.9%, East Africa 6.5%, Tanzania 6.35%, Uganda 6.1%.** As industry became a larger share of total output in the region, the divergence would increase. This effect is unlikely to have been significant before 1960 because of the low share of non-processing manufacturing in any East African state.

* In this case Kenya's limit is Uganda's new opportunity and vice versa.

** See Appendix B - Section V for a more detailed presentation.

With a production location mechanism designed to prevent radically unequal distribution of gains these costs are avoided.* "Losses" on imports are balanced by "gains" on exports (or on other sectors e.g. services, tourism) and the net advantages of additional viable production, scale, and location remain to accrue in some roughly agreed proportion to all participants. It should be emphasized that unless such net advantages are substantial no form of common market can be of significant value to one member except at the expense of the others.

In this case, the true costs of union in regard to income levels and growth collapse back to those of coordination. Certain particular opportunities are forgone, but are balanced by others gained. To attempt to "secure" the forgone opportunities will destroy the balance in gains distribution and, in the end, break up the economic union.**

IV

The most appealing aspect of any policy, programme, or institution is that of its proceeds. Discussion of gains from East African economic union has followed two conflicting - but equally analytically unsatisfactory - paths. On the one hand there has been a tendency to discuss overall gains in glowing terms leading to the impression they are rather larger than calculations suggest to be the case. On the other detailed discussions - partly because these have tended to be within the context of debate on equity of shares and partly because not efficiency, scale, location gains are difficult to quantify even approximately - have concentrated on transfer gains and losses (e.g. subsidies to Tanzanian services), production and trade effects of "shiftable" industry location, which net to zero for East Africa as a whole. Further the discussion both tends to avoid serious examination of production location and pattern influences on territorial growth rates.

* In the long run this is true even for the "gaining" state e.g. Kenya. Heavily unequal distribution of gains will eventually (if not much sooner) lead to breakup. At this point the "gainer's" regional market oriented industrial capacity will face a crisis. Certain Kenyan firms appear to have been confronted with precisely this situation as a result of Tanzanian quotas and some bankruptcies and falls in profits have been directly attributed to loss of free access to regional markets.

** This is the danger inherent in such actions as Kenya's apparent signing of an agreement to build an East African market nitrogenous fertilizer plant when the industry was allocated to Uganda at Kampala (and is apparently in the new Uganda Plan) and to import substitute for Uganda sugar. Unless specific new opportunities are provided for Uganda, her gains from the Common Market - expected re fertilizer, actual re sugar - will be substantially reduced and her national interest in remaining in it weakened. Further, the unilateral nature of the Kenyan decisions (as with the Tanzanian quotas) raises doubts - whether justified or not - as to her willingness to weight joint interest seriously enough to make continued economic union viable.

A definitive balance sheet cannot be drawn up on the basis of presently available (at least publicly available) data either for East Africa as a whole or for the individual territories. Drawing up such an accounting should be given high priority by the present East African Commission because without it rational discussion of how gains are divided - or even of what their total is - much less of how they might be more equitably distributed are extremely imprecise and subject to honest national differences of opinion which tend to deteriorate into veiled distrust or even open recriminations.

Existing net gains from the economic union appear to be on the order of £10.4 million a year, i.e. 1.4% of East African product. Somewhat over half of this can be attributed to lower costs of joint services and the income - profit effects of the airline (which could not exist as three separate bodies). Another third derives from the common market in industrial goods and an eighth from that in semi-processed and processed agricultural commodities. Both in industry and processed agriculture the scale effect appears much less critical than than the location effect. The only national industries clearly dependent on East African markets for their viability (as opposed to specific plants in multiplant industries with inter-territorial trade larger than any one plant's output) are blankets, aluminium products, and plastic shoes in Tanzania.

In all other national industries the typical plant size is below the consumption of each territorial market so that net gains - if any - result from internal and external economies of location. These industries are "shiftable", possibly - if the advantages of Nairobi are either overestimated or man made and resulting from industrial concentration itself - at relatively low costs. "Shiftability" means that the value added and domestic raw material content in imports of such goods plus the income effect associated with their production is a loss to the importing territory, and a gain to the exporting as opposed to a situation of territorial protection. In the latter case, however, both would lose the net gains from location and/or scale.

This analysis shows that "trade balancing" has a certain relevance: if trade is approximately equal "shiftable" gains and losses may more or less cancel out for each territory and net gains remain. However, it also shows that for there to be net gains one must seek trade balance by raising exports from deficit territories not by lowering those of surplus ones which tends to erode net gains to the vanishing point.

The "shiftable" of Kenya's industry and of Uganda's processed agricultural production (with rather different domestic base or price gain components) provides a basis for the conclusion that Uganda as well as Kenya draws a net gain from the Common Market but that Tanzania has a very large loss on the industrial side and a cancelling of gains and losses on the agricultural.*

The actual figures computed do not appear of the same importance as the sign and direction, thus their relegation to Appendix B. D.G.R. Belshaw, "Agricultural Production and Trade" op cit, calculates the agricultural sector gains as rather more favourable to Kenya and less so to Uganda than does the author. The overall "balance" would however not be changed, Uganda would remain a net gainer on processed agricultural trade and from East African Economic Union as a whole.

The services account shows substantial net gains, somewhat lesser "transfers" to meet what otherwise would be territorial losses, and income effect "transfers" resulting from controlization of expenditure intermediate in value. All three states gain on the first head, Tanzania on the second (at the expense of Kenya and Uganda), and Kenya on the third (at the expense of Tanzania and Uganda). Kenya therefore - perhaps suprisingly - gains most by the joint services (self contained and EACSO) Tanzania gains appreciably (but probably less than a third as much), and Uganda more or less breaks even.

Raisman formula direct transfers * benefit Uganda by about £.3 million and Tanzania by about £.5 million. Counting related income effects the total Raisman gains to Uganda are £.5 million and to Tanzania £.9 million. These are transfer gains at the expense of Kenya.

Total Kenyan East African economic union gains approximate £10.0 million (97% of the Regional net total), Uganda gains £2.6 million (25%), and Tanzanian losses £2.3 million (-22%). However, because almost all of the net gains on services (£5.8 million) as well as the direct Raisman formula transfers (£.8 million) are on government account either as cost reductions or revenue increases, each state gains approximately £2.1 million on government account.** The dominant role of income effects (only 20% of which can be assumed to end as public revenue) via centralization of service expenditure and "shiftable" industry location results in an £7.9 million Kenyan gain, a £.4 million gain for Uganda, and a £4.4 million loss for Tanzania in the private sector. Overall net government public sector gains are probably about £6.4 million and private £4.0, depending on assumed multiplier and marginal tax incidence assumptions.

The status quo is not viable for three reasons:

- a) The distribution of net gains is not politically acceptable;
- b) The growth rate effect outlined in the previous section makes the static imbalance even less acceptable;***
- c) The net gain is not large enough to justify the amount of political and civil service time, energy, policy, and focus placed on it. No redistribution of present gains could meet criteria a and b and yield any state enough to be an economic gain of first priority - two large textile mills or one oil refinery could add almost as much to annual product.

* See Appendix B - III for details of calculation. EACSO costs now met from the distributable pool are assumed to benefit the three states in the same ratio as total EACSO expenditures: 45% Kenya, 29% Tanzania 26% Uganda. Cf. A. Hazlewood, "Economic Integration" op cit, section IV for a more detailed discussion of the Raisman formula and benefit calculations on alternative assumptions.

** e.g. Uganda gains on the static balance. If, however, the dynamic loss is even half the .4% (vs EA "average") a year the data suggest the static gain is only equal to six years dynamic loss from lower growth rates.

*** See Appendix B for a more detailed presentation.

Should one then conclude that East African Economic Union is, at best, of secondary concern and that the major effort needed to maintain or expand it could better be spent elsewhere?

Probably not. The history of economic coordination in East Africa does suggest a steady rise in net gains and, indeed, that if the approximation of gains had been made in 1954 not 1964 the total would have been on the order of half the size. This record at least renders the hypothesis that net gains will rise (or more to the point in a planned union, can be raised) in the future, tenable.

If net gains are to be maximized and distributed on a politically acceptable basis, production, trade, and aid are the key areas for coordinated or union planning, and additions to current output and growth of output (nationally and regionally) the critical indices of success or failure.

1. Large scale industrial opportunities open to East Africa but not to one state appear likely to be significant in the future even if they are not so in the present industrial pattern. Economies of scale and location in agricultural production, processing, and external marketing are far from fully utilized. Joint tourism promotion and development could quite well yield net gains of £2,000,000 or more each year even if it resulted in only a 15% net addition to tourism.

Taking the value added and income effects of even a relatively modest large scale industrial sector (especially if financed largely by new capital not otherwise attainable), the gains from improved efficiency in agriculture - processing - marketing, and the net addition to tourism a 1971 net addition to Economic Union gains of £23 million * seems well within reach from these areas alone. This rate of increase would step up the Regional growth rate by .6% a year and, assuming the success of the joint industrial sector, lay the base for even more substantial gains thereafter (only 20% of the 1965-1971 investment in industry has been assumed to be in the joint or union market sector, a share which would tend to grow toward at least 40% judging by the ECA studies).

2. Trade and distribution of gains are integrally linked. Unless union market production location is so distributed as to result in substantial income gains to Tanzania and Uganda as well as to Kenya the potential regional gains is unrealizable because irrelevant to the economic national interest of two states. (As seen in the earlier evaluation, neither services gains nor the Raisman formula could be expected to provide adequate compensatory effects.)

* Industry	a	16,000,000
Agriculture	b	4,500,000
Tourism	c	2,500,000
		<u>23,000,000</u>

a. Capital invlved -say- £25,000,000. Output: £20,000,000. Value added (40%): £8,000,000. Multiplier: 2(8,000,000) = £16,000,000.

b. New markets from industry (10%) £1,250,000. Overseas marketing gains: £500,000. Multiplier 2(1,750,000). Cost reductions in location and scale: £1,000,000) i.e. 20% on £5,000,000 of additional interterritorial trade in this sector.

c. Net gain to tourist revenue from joint promotion (£2,000,000) less 40% import content (£800,000) times multiplier (2) plus additional East African airways profit (£100,000).

Clearly it is not vital that each state gain substantially on services, on manufacturing, on agriculture, and on tourism taken separately - the total net territorial gains are the critical element.* However, the structure of production built up must be such as to increase each territory's growth rate which implies division of high growth sectors (i.e. large scale industry, tourism) and avoiding having any one state (e.g. Uganda) depend solely on agricultural production gains unless a fairly comprehensive joint food and raw material policy to ensure rapid growth in her territorial exports of these goods is possible (a doubtful assumption given the need to improve rural production per capita possibilities confronting each state - an absolute need both on political and social as well as mass market creation and employment grounds).

Trade flows then become a matter of facilitating the realization of agreed gains and the question of exact balance drops out - after all the net gain on a pound of one export can be very different from that on another so that balanced trade would be far from ensuring balanced gains.** Similarly monetary and clearing policy becomes a matter of ensuring that neither widely divergent national price movements nor the technical process of converting different currencies hampers the trade needed to ensure realization of joint proceeds from economic union. In practice, given the growing importance of the planned joint sector and its need of market data, annual inter-territorial trade quantities and values by principal commodity could usefully be estimated for each coming year and on three to five year perspective. This would both provide an early warning allowing steps to avoid any danger of steadily growing imbalance and, more directly, a guide to the clearing levels to be anticipated by each state in planning overall external and interterritorial foreign and regional exchange budgets.***

3. Foreign aid can be made an instrument of cementing regional economic union if long run net gains are likely to be substantial and if aid sources are interested in increasing economic development in East Africa at the lowest long run cost to themselves.**** The first condition appears to be met, about the second there may be differences of opinion and of the policy of various aid sources.

* The gains on public account must be positive in each case too but this is a lesser problem as that criterion is met today.

** E.g. the value added in petroleum refining is rather low and in sugar growing and processing near 100%. If, then, Kenyan petroleum exports to Uganda balanced reverse sugar exports, Uganda would gain substantially more in both income and foreign exchange position than Kenya.

*** Imports from within the region save direct foreign exchange but - by clearing surplus reduction or deficit increase - reduce the foreign exchange available for extra-regional imports. i.e. if Tanzania purchases £1,000,000 of steel from Uganda not Germany her foreign exchange requirements are reduced by £1,000,000 (more or less depending on comparative prices) but so is the available supply of exchange for foreign purchases as her clearing balance with Uganda is worsened by the same £1,000,000.

**** This line of argument was stimulated by William Clark's presentation at the Nairobi seminar and has benefitted by Auther Hazlewood's comments.

The immediate problem confronting East African Economic Union is that Tanzania must receive larger (i.e. positive) gains on a static basis and Uganda and Tanzania on a dynamic to make its continuance viable. Further, the three national growth rates - at equal levels of national effort - should either be equal or inversely related to DDP/Capita i.e. Tanzania, Uganda Kenya in descending order of growth rates e.g. 7.0, 6.5, 6.0.

However, this cannot be achieved through larger fiscal transfers from Kenya nor sharp reduction of the Kenyan growth rate which Kenya can ill afford economically and its government not at all politically.*

While expansion with agreed location can bring all round gains it may not be able to do so fast enough to save the union - states, or more precisely their governments, necessarily have fairly high time discounts, because of the pressure for rapid development of services and income levels requiring a parallel rapid growth in production.

However, a joint foreign aid policy toward East Africa - based on joint East African advances - might finance the short run gap before overall gains and their allocation became acceptable. Additional funds could be sought to finance projects directly linked with union economic sectors and priority given to Tanzania and Uganda in the allocation of these additional resources to specific projects. This device, if successful, would provide additional short run static and growth gains to Tanzania and Uganda at no net cost to Kenya.

The mechanism of allocation presents problems because two criteria need to be fulfilled jointly:

- a) the location policy should result in acceptable gains (and ergo added productive capacity) for each state;
- b) so far as possible lowest cost (in medium or long run after purely historic or transitional cost disadvantages are overcome) considerations should guide location.**

To be effective, the allocating body would have the power to make decisions - based on detailed technico-economic studies - on specific location issues, subject to reversal by the proposed revised CLA. To be given such power for specific cases, the allocation commission must be given an overall framework with which the sum of individual decisions must be compatible.

* This is particularly true in that the average African cash income in Kenya is distinctly lower than that in Uganda and somewhat below that in Tanzania. Further, it has the most pressing urban unemployment problem.

** This may lead to a problem on location of allocated industries within states. For union market purposes, Tanga, Arusha, Moshi, and - with transport improve Mwanza are better sites for many industries than Dar-es-Salaam or a fortiori any central or southern interior town. In practice the balance of Tanzanian industry is already shifting toward a larger share in these areas and a lesser in Dar.

This might be a fairly simple formula stipulating e.g. that over each three year period the estimated value added of (or the investment in) union economic sector projects allocated to each state must represent a share of total allocations within the range $\pm 2\%$ of its population share * or a more complex weighted formula.

Ideally the commission would deal with all union market production facilities - including joint agricultural programmes and tourist development - but large scale industrial project identification, feasibility testing, location evaluation, and external finance promotion represent the essential core.

The most serious challenge to joint allocation - which is in principle accepted by all three East African governments - raised to date is that so long as substantial outside capital and management is required location must be left up to individual firms.** Two obvious historic - if partial - refutations of this thesis exist. Uganda - via the Uganda Development Corporation industrial cum large scale agricultural cum financial empire - has fairly clearly augmented the total industrial activity and foreign industrial capital in Uganda (not necessarily at Kenya's expense but probably partially so in textiles and cement for both of which the Kenyan market is larger than the Ugandan).*** Tanzania has secured all three of its Kampala - Mbale allocated industries with full or substantial private sector participation including new investment from abroad e.g. by Phillips in radio assembly.

In principle, the argument is not particularly sound on several counts. If the whole East African market is attractive and the choice is a site in a particular state or the loss of the market (quite possibly to a major competitor) it will require very uneconomic site selection to cause a rejection.

* Since Tanzania and Uganda have smaller GDP/Capita levels than Kenya this would give both - especially Tanzania - a relatively greater gain vis a vis GDP. Similarly, since Kenya is the largest single industrial market, it would tend to improve Uganda and Tanzania trade balances with Kenya. The latter point on joint allocation has also been made by Dr. Jelic of EACSO.

** Unfortunately this argument is heard most frequently in Nairobi voiced in terms of no private firms being willing to locate in Tanzania which - especially in the context of 28 substantial private or joint venture Tanzania plants under construction - results in suspicions as to the meaningfulness of the acceptance of joint allocation in principle by Kenya. This is not to imply that the author endorses these doubts; simply that they exist and represent a real threat to economic union.

*** The securing of Nyanza Textiles for Jinja - and quite possibly for East Africa was, in particular, a personal triumph of Governor Sir John Hall, architect of the Owen Falls Dam - UDC based Uganda industrialization policy.

Given technical competence on the allocation commission's part, this position would imply that there are no substantial body of large scale industries for which Dar-Arush a-Moshi-Tanga or Kampala - Jinja-Tororo costs are within 10% of Nairobi-Mombasa, a highly unlikely proposition.*

Private investment policies - particularly guarantees against the risk of nationalization sans compensation - are not radically different in the three states. The share of proposed state investment in industry does differ with Tanzania and Uganda significantly more active in state and joint venture participation than Kenya. Combined, these two policy trends should both ensure that some private capital and expertise will find Tanzania and Uganda allocated projects attractive and that a relatively higher share of public capital will be made available to complement them.

The structural reforms proposed may appear drastic. They are, in fact, the minimum likely to be adequate on the assumptions: a) in the medium run East African economic union can be of significant value to all participating states; b) to ensure this not only must distribution be improved but total East African gains to distribute must be raised rapidly; c) in the context of national development planning only a planned economic union can be a net aid rather than a hindrance to national economic policy; d) the critical issue, both of planning for growth and of distribution of static gains, is agreed allocation of major productive units selling on the East African market level. The projected gains by 1970 (as well as the 1954-1964 total gains trend) would appear to bear out a. The past 1961 history and the approximations of present East African and state gains support b and c and at least imply d in that only the possession of an acceptable share of union oriented productive activity can guarantee securing a parallel share in direct and multiplier income effect proceeds.

APPENDIX A: East and/or Eastern African; Alternatives or Complement.

In considering the future of East African economic union, the question of geographic expansion has become increasingly important. Rather vaguely it can be traced to certain of the Pan African Freedom Movement for East and Central African (PAFMECA later PAFMECSA) discussions and perhaps more critically to the habit of common viewing of issues built up by some of its participants. Similarly from at least 1962 on, the idea of economic cooperation between Zambia and Tanzania (within or as a substitute for East African economic union) has attracted recurrent and - especially with the Tanzania rail proposals - increasingly precise interest. In 1963 UNECA floated a rather more definite set of proposals for East and Central African industrial coordination.**

* Cf. E/Cn.14/INR/102 and E/CN.14/247 in re this point. They, in fact, find more large scale industries with cost advantages in Tanzania and Uganda than in Kenya - also perhaps a rather extreme position.

** E/CN.14/247, op cit.

Green.

However, the Greater East African Economic Union idea remained a concept rather than a real alternative until the October 1965, Lusaka Conference based on a much more detailed set of ECA proposals concerning industry *, transport and communications, and trade. The Lusaka Conference resulted in a resolution calling for an Economic Community of Eastern Africa with moderately specific proposals for a treaty and institutional structure and rather sweeping but vague descriptions of the economic areas to be coordinated or unified.** However, a series of resolutions *** on specific areas of joint action in industry, agriculture, transport (including airline amalgamation), tourism, and trade went some way both toward spelling out in what fields the Interim Council of Ministers and Interim Economic Council are to formulate practical proposals and to giving an indication of seriousness of purpose at least on the part of the states represented by senior ministers.**** Four questions arise:

- a) Is there a serious commitment to Eastern African action and if so by what date?
- b) Would a broadened setting ease tensions among the East African states?
- c) Are there significant gains in an Eastern as opposed to East African frame of joint action?
- d) Are East and Eastern African economic unions alternative choices or potentially meldable approaches?

The first question cannot be answered until there is more discussion of the joint industrial development plan. If the allocation proposed -- or some modified version of it -- can be approved then there is every reason to expect the EAEC to become a reality. However, this cannot be much before 1970.

While a qualified yes can be given to the second question, it is perhaps not so hopeful a point as at least one East African state believes it to be. Specific historic factors and personal misunderstandings would loom less large but present disagreements on productive unit allocation stem primarily from national economic interest not personal pique.

* E/CN.14/INR/102, op cit.

** "The Economic Community of Eastern Africa", E/CN.14/LU/ECOP/Res.1, November 1965. It is perhaps significant that the Kenyan delegation were strong proponents of a treaty rather than an agreement form for the community and of clear ratification methods and implementation responsibilities.

*** E/CN.14/LU/ECOP/Res. 2-25.

**** Apparently Kenya, Tanzania, Uganda, Zambia, Malawi, and probably Burundi and Ethiopia. Rwanda, Somali, Mauritius, and the Malagasy Republic were - at least in principle - represented but apparently were less enthusiastic according to some reports.

With more countries it is true that such conflicts between any pair of states would be less numerous (and joint interests possibly more numerous) but in total more, not less, positive balances of gains over losses would have to be achieved to satisfy each participant (any state not so satisfied would either not become, or soon cease to be, a participant).

There are, judging by the background papers and resolutions, quite real gains attainable in the Eastern but not the East African frame. Certain industries would require the larger market for efficient operation, some services gain by the greater scale. While very substantial transport development expenditures would be entailed, in part this represents a re-focusing of national transport development plans to serve regional goals as well rather than a net addition to transport capital costs.

However, there are also a number of fields in which East African cooperation is not competitive with Eastern African. For some productive units the larger market is not needed, in the case of other areas immediate East African links (e.g. in tourism, transport, power) could readily be broadened once EAEC became a going concern.

The logical approach would appear to be active promotion of firmer and broader East African Economic Union within a medium term perspective of broadening participation in an Eastern African production unit location and transport link plan if adopted (including of course specific major industries and routes not simply principles for selection). There is no inherent conflict. By its nature, the EAEC will for a number of years be a de facto or de jure "designated product" (not necessarily solely in manufactures) common market and its joint planning extremely selective.

So long as the broad paths of both EAEU and EAEC policy can be projected for ten to twenty years, there is no inherent reason the East African states cannot continue more extensive economic union among themselves gradually merging into the wider Eastern African Economic Community as its designated areas of activity become more inclusive. Certainly an EAEC as functionally comprehensive as East Africa's present economic integration can hardly be achieved before 1975-80 and nothing would be gained by marking time, on Uganda - Kenya - Tanzania economic integration until that time, even were the status quo viable and stable.

APPENDIX B:

EAST AFRICAN ECONOMIC UNION - AN APPROXIMATE BALANCE SHEET

The following estimates of regional, territorial, and sectoral gains and losses resulting from East African economic union are presented as approximations indicating orders of magnitude not precise calculations. The assumptions used in obtaining estimates are indicated in the notes to individual tables. These estimates seek to consolidate the various partial calculations of gains and losses which have been attempted * and to escape from the balance of interterritorial trade based approach which almost inevitably results in estimating only transfer gains and losses between territories, without taking account of the net gains to East Africa as a region which are the justification for economic union. They are intended to serve five purposes:

1. To provide a picture of total regional gains and their source;
2. To provide a parallel picture of the territorial divisions of gains (losses) both overall and divided between public and private sectors;
3. To supply a quantitative basis for evaluating contentions about the results of the economic union and their relative importance;
4. To illustrate the impact of different structures of production - at least partly the result of economic union - on territorial growth rates;
5. To demonstrate the possibility and hopefully the value of more detailed calculations by an impartial, official body with fuller access to statistical data and greater resources.

With the exception of the table illustrating the differential effects of production structure on growth rates, all of the calculations concern static gains and losses. They are based on the following assumptions.

1. That the alternative to economic union in the common market field would be three protected national markets not extra-regional importation of present interterritorial imports. This assumption means that "tariff revenue loss" calculations are irrelevant;
2. That in the service field the same levels of services would be provided on a national basis with the exception of the international operations of East African Airways which would be utterly unviable as three competing national units.

The conclusion that present breakup of economic union would lead to immediate territorial gains and losses as indicated is not valid. Substantial time and capital would be required to relocate production and service facilities. In the short run the regional and territorial costs of breakup would be substantially larger than present net regional gains.

* Among the more interesting of these are - W. Newlyn, "Gains and Losses in the East African Common Market", op. cit; A. Hazlewood, "Economic Integration in East Africa", International Seminar on Economic Co-operation in Africa, Nairobi, December 1965 and "The Territorial Incidence of the East African Common Services" in Oxford University Institute of Statistics Bulletin August, 1965; D.G.R. Belshaw, "Agricultural Production and Trade in the East African Common Market", op. cit; and D. Ghai "Territorial Distribution of Benefits and Costs in the East African Common Market", op. cit. Professor Newlyn's paper directly stimulated the present attempt to achieve at least approximate quantitative data on the overall level and distribution of gains from East African economic union.

Several important conclusions do emerge from the data:

1. The overall East African static gain, while not negligible, is only 1.7% of regional product. The basic reason for this is the limited number of industries which are regional market dependent as opposed to shiftable.
2. Substantial large scale industrial development in East Africa would radically increase the net regional gain and could - if appropriately distributed - reduce the inequality in territorial distribution. On the other hand if the present industrial location pattern were to continue, the inequality of distribution would increase absolutely and probably relatively.
3. All three states are substantial gainers on government sector account when cost savings and tax receipts are taken together.
4. Only Kenya is a substantial gainer on private sector account, while Tanzania is a substantial loser.
5. Overall Kenya has a substantial (3-4% of GDP) net gain, Uganda a marginal (1.3% of GDP) net gain, and Tanzania a marginal (somewhat under 1% of GDP) net loss.
6. The services sector fails to redress common market gains inequalities, because transfer effects resulting from location of facilities make Kenya the largest net gainer. Tanzania is a net gainer on services, Uganda breaks even.
7. The Raisman transfer effect - while by no means insignificant - is not adequate to provide net gains to all three territories, much less an approximately equal division of net regional benefits.
8. Uganda's net gain is dependent on the sale of textiles, sugar, tobacco, cotton-seed, oil, and electric power to Kenya. Kenyan self sufficiency in sugar, textiles and power would convert the gain to a loss of at least equal magnitude.
9. Tanzania has achieved a significant stake in regional market dependent industry, although not one large enough to offset losses on shiftable industry income effects. This stake will increase when the tyre and tube and radio assembly plants scheduled under the Kampala/Mbale Agreements come into production.

All calculations have been made from national or EACSO published statistics when available and from unofficial estimates in other cases unless specifically noted to the contrary. 1964 has been used as a base year with minor adjustments in cases for which 1964 trade patterns were markedly typical.

The net gains from the industrial common market are probably underestimated. Existing industrial statistics have very broad classifications which may result in some plants dependent on regional markets appearing to be part of multi-plant shiftable industries. Corrections for this factor would appear most unlikely to alter the overall regional or territorial gains (losses) from the industrial common market by more than 10-15%.

I. SERVICES (2)		(All figures in £000)			
	TANZANIA(1)	KENYA	UGANDA	EAST AFRICA	
A. Railroad and Harbour					
Main Line Losses	+1000	-500	-500	-	
Diversion of Traffic from Moshi-Arusha to Mombasa and from Tanga	-500	+250	+250	-	
Operating Expense Savings (10%)	600	600	600	1800	
Workshop Expense Savings (10%)	100	100	100	300	
Income Effect of Centralization: Headquarters	-100	+100	- 80	-	
(3) Workshop	-625	+1250	-645	-	
TOTAL RAIL AND HARBOUR	+475	+1900	-275	+2100	
B. Airline					
Territorial/Interritorial (4) Losses	325	-	125	-	
Profits	125	275	50	-	
Net Effect Consolidation	+200	-275	+75	-	
Overseas Operations (5) Profit	200	200	200	600	
Income Effect	100	200	100	400	
Internal Operation (6) Expense Savings 15%	240	210	150	600	
TOTAL AIRLINE	+740	+335	+525	+1600	
C. Posts and Telegraph					
Territorial Losses	250	-200	-50	-	
Current Cost Savings (7) (10%)	280	320	200	800	
TOTAL POST AND TELEGRAPH	+530	+120	+150	+800	
D. EACSO					
Services Cost Savings (8)	350	350	350	1050	
Income Effect of Centralization of Operations (9)	-1000	+2200	-1200	-	
TOTAL EACSO	-650	+2550	-850	+1050	
E. Hydroelectric Power					
Income Effect (10)	-	-400	+400	-	
Cost Savings (11)	-	250	-	250	
TOTAL POWER	-	-150	+400	+250	
SERVICES GAINS & LOSSES (11)	+1095	+4755	-50	+5800	
SPILOVER EFFECT (13)	115	-345	190	-40	
TOTAL SERVICE SECTOR GAINS	1210	4410	140	5760	

	<u>TANZANIA</u>	<u>KENYA</u>	<u>UGANDA</u>	<u>EAST AFRICA</u>
GOVERNMENT COST/REVENUE EFFECTS (14)				
Cost Savings	2520	855	1175	4550
Airline Profits	200	200	200	600
Power Sales	-	-150	400	250
Effect on Tax Revenues of Income Transfers (20%) (15) and Net Additions	-305	700	-325	70
GOVERNMENT GAINS	2415	1605	1450	5470
PRIVATE SECTOR GAINS/LOSSES (16)	-1205	2805	-1310	290

NOTES

1. Tanzania with the exception of certain EACSO services, refers to Tanganyika only. Zanzibar is not a member of the Common Market nor does it participate in the self-contained services.
2. Railway and Harbour, airline and post and telegraph data represent "Educated guesses" based on regional data and unofficial statements on territorial breakdowns. No official territorial cost and revenue data are available. Cf somewhat different "educated guesses" by A. Hazlewood, op. cit, p. 24.
3. Additional incomes generated are estimated at two times Headquarters Expenses (perhaps £120,000) plus Workshop Value Added ($\frac{1}{4}$ of £2,900,000 gross output). The transfer is computed as the difference between a 33-33-33 division and the present 0-100-0 distribution. The Workshop Value Added figure is probably estimated too conservatively. 1961 Net output was £960,000.
4. Losses are sustained on intraterritorial flights in Tanzania and Uganda and on the Entebbe-Dar service. Profits are earned on the Nairobi-Mombasa, Nairobi-Dar and Nairobi-Entebbe runs. The 1964 EAA report suggests that these profits and losses approximately net out and that the overall net profit of £600,000 is totally derived from international flights.
5. The alternative to one international airline is assumed to be none. The gain from joint operation is, therefore, the net profit plus the income generated by regional component of expenditure on behalf of international services. This is very roughly set at £200,000 divided 25-50-25 with an income multiplier of 2.
6. It is assumed that roughly .5 of total costs are incurred for intra and inter territorial services three territorial airlines would continue to operate. The savings rate of 15% is divided 35% (T), 40% (K), 25% (U) on estimate of share in these flights.
7. Savings divided 35% (T), 40% (K), 25% (U) on estimate of expenditure pattern.
8. Estimated at 10% on Social and Ancillary Services, 20% on Administration, 25% on Economic Services. The cost contribution transfer effects of Union are considered in analysis of Raisman formula effects.

9. The income effect is estimated as 2 times the difference between local expenditure incurred on behalf of a state and expenditure in that state. The difference is computed from the data in A. Hazlewood, op cit, P. 22 with adjustments for expenditures outside East Africa on behalf of each state, i.e. £500,000 of services to Tanzania and £600,000 of services to Uganda are carried on in Kenya and have their income effects there.
10. The income effect is treated as equal to net sales. This assumes Uganda has insignificant additional current expenditures from generating the power and uses the revenue to meet external obligations of the UEB.
11. The UEB charges Kenya approximately 60% (per unit) of its average internal rate for power. Kenyan generation costs would appear for substitute power to be at least equal to the Ugandan internal tariffs.
12. Cost reductions are treated as additions to real domestic product throughout.
13. Spillover effect results from the propensity to spend additions to domestic income on products of the other territories. It is here computed on transfer and net income effects only, not on cost savings, airline profits, or power sales. The estimated spillover gains are:
- | | | |
|----------|--------------------------------------|--|
| Tanzania | 3% of additions to Kenyan income | Negligible re
Uganda |
| Kenya | 10% of additions to Tanzanian income | 10% of additions
to Ugandan income. |
| Uganda | 5% of additions to Kenyan income | Negligible re
Tanzania. |
14. Airline profits (but not income effects) and UEB power sales are here included in the Government Sector.
15. Average territorial tax revenue slightly exceeds 20% of Gross Monetary Product. Marginal tax revenue from additional Gross Monetary Product tends to be below the average rate. However, the Union economic sectors appear to bear a somewhat above typical tax incidence. A 20% marginal rate is, therefore, used. This rate is applied to net and transfer income effects but not to cost savings, airline profits, or UEB sales.
16. Strictly speaking this sector is Private plus Autonomous Public Corporations not specifically included in the Government Sector. For purposes of the present analysis this lumping has no serious detrimental effects and the isolation of the impact of Union on individual autonomous corporation profits would be virtually impossible.

II. <u>COMMON MARKET</u>		(£000)			
	<u>TANZANIA</u>	<u>KENYA</u>	<u>UGANDA</u>	<u>EAST AFRICA</u>	
Industrial					
A. Inter-territorial Trade in "Shiftable" (National Market) Industries					
Income Effect (1)					
Tanzania Exports	1000	-700	-300	-	
Kenya Exports	-6500	13500	-7000	-	
Uganda Exports	-1200	-2900	4100	-	
Cost Savings of Present Location (2)	770	360	730	1860	
TOTAL A	-5930	10260	-2470	1860	
B. Regional Market Industries Not Viable on National Basis					
Tanzania (3)	1200	-	-	1200	
TOTAL A AND B	-4730	10260	-2470	3060	
C. Spillover Effects (4)					
TOTAL INDUSTRIAL	-4420	9540	-1955	3165	
Selected Foods, Agricultural Raw Materials (5)					
A. Inter-territorial Trade in Shiftable Production					
Income Effect (6)					
Tanzania Exports	1605	-1140	-470	-	
Kenya Exports	-1300	2290	-995	-	
Uganda Exports	-430	-4570	5005	-	
Cost Savings of Present Location (7)	190	635	160	990	
TOTAL A	70	-2785	3705	990	
B. Non-Shiftable Component of Interterritorial Trade					
Income Effect (8)					
Tanzania Exports	160	-85	-35	40	
Kenya Exports	-95	230	-75	60	
Uganda Exports	-30	340	500	125	
TOTAL B	30	-195	390	225	
TOTAL A AND B	100	-2980	4095	1215	
C. Spillover Effect (9)					
TOTAL FOODS, AGRICULTURAL RAW MATERIALS	10	-2560	3945	1395	
TOTAL COMMON MARKET GAINS/LOSSES	-4410	6980	1990	4560	
GOVERNMENT SECTOR					
Tax Revenue 20% (10)	-380	1390	400	910	
PRIVATE SECTOR (11)					
	-3530	5590	1590	3650	

NOTES

1. Shiftable industries are those in which viable plant size (typical East African plant) is below national market demand. The income effect from exports is calculated at 2 times industrial value added plus raw material production (e.g. for dairying, flour milling) dependent on industry; dairy and meat products are included in the industrial sector in these estimations. The capital employed in founding these industries is assumed to have been foreign or regionally mobile - East African in origin while expansion is believed to have come basically from re-invested profits.
2. Cost savings from present - as opposed to three separate territorial market location patterns are estimated at 20% of the adjusted value added of shiftable industry imports. This is, if there were three separate markets with tariff barriers against each other, selling prices of manufactured goods now imported from other territories would be higher because of higher cost.
3. Bata Shoe (plastic shoes), blanket factory, aluminium product plant. Income effect 2 times total value added.
4. See I - Note 13. Computed on A plus B.
5. Sugar, tobacco (unmanufactured), Maize and Millet, Wheat, Vegetable Oils, Animal Foodstuffs.
6. 80% of interterritorial trade is taken as shiftable production. value added ratio is taken as 90%. A multiplier of 2 is used.
7. Cost savings from present location pattern are estimated at 20% of shiftable imports.
8. The non-shiftable component of 20% is taken to be the share of products physically not produceable in the importing territory (e.g. lack of land, unsuitable climate) or produceable only at 50% or more additional cost. The same 90% value added ratio and multiplier of 2 are used.

The base gain to the exporting state is, however, assumed to be the difference between territorial proceeds and world market proceeds (less transport costs) estimated at 40% of non-shiftable exports. The base cost to the importing state is taken to be the difference between the East African cost and the world cost (including additional transport) taken at 30% of non-shiftable imports.

In this case the alternative to production for the Regional market is production for the world market and the alternative to Regional imports, world market imports.

9. See I - Note 13. Computed on A plus B.
10. See I - Note 15.
11. See I - Note 16.

Rounding

In Industrial A and B income effects have been rounded to the nearest 100 because of the extreme difficulty in making precise estimates of adjusted value added. Cost savings have been rounded

V. IMPACT OF DIFFERENTIAL INITIAL STRUCTURES OF PRODUCTION ON TERRITORIAL GROWTH RATES

A. Initial (1964) Structures of Production (%)

	<u>TANZANIA</u>	<u>KENYA</u>	<u>UGANDA</u>	<u>EAST AFRICA</u>
Primary and Mining (1)	61.2	42.2	67.3	55.9
Manufacturing (2)	2.4	9.6	3.9	5.7
Construction	3.1	1.6	1.8	2.0
Trade-Transport-Power	16.4	23.2	13.6	18.2
Services	3.5	8.1	6.9	6.2
Rents	2.1	3.4	2.0	2.6
General Government	11.3	11.8	4.5	9.6

B. Sectoral Growth Rates Consistent with 6.5% Annual Growth of East African Output.

Primary and Mining	5%
Manufacturing	12%
Construction	15%
Trade-Transport-Power	8%
Services	5%
Rents	8%
General Government	8%
TOTAL GDP	6.5%

C. Resultant National ^{Growth} Rates if Sectoral Imbalances within Region Persist on present lines and each State sustains an equal level of Effort toward growth.

Tanzania (3)	6.4%
Kenya	6.9%
Uganda	6.1%
East Africa	6.5%

D. Annual Gain or Loss from differential growth effects of structure of Production (4)

Tanzania	Loss	£ 360,000
Kenya	Gain	£1,110,000
Uganda	Loss	£ 810,000

Over time the divergencies in growth rates and structural dynamic gains or losses of product would tend to increase with the increasing relative weight of manufacturing. (5)

NOTES

1. Includes coffee curing, cotton ginning, sisal decorticating, and (except for Kenya) sugar manufacture.
2. Excludes primary processing listed in Note 1.
3. This rate rather overstates the relative Tanzanian position. The pickup in construction in Tanzania was more advanced for 1964 than in the other two territories where it remained at semi-depressed levels.

4. The difference between total gains and losses results from rounding in calculation of A and B.
5. It is not contended that this growth pattern is probable. Present plans call for distinctly unequal levels of effort and for structural changes. The attempt is to give a rough order of magnitude to the dynamic gains and losses resulting from the present structure of production and therefore to a substantial extent from economic union.

The Economical Use of Scarce Higher Level Manpower
in Zambia, 1964-1966

by

ALASTAIR HERON

INTRODUCTION

During the year preceding the achievement of independence by Zambia (formerly Northern Rhodesia), considerable attention was focussed on its resources of educated and trained manpower, relative to its size, wealth and potential for rapid development. Later in 1963, a UNESCO team surveyed the educational scene while preparing a report on education planning, and found it rather gloomy. Early in 1964, a more exhaustive and penetrating analysis was carried out by Jolly (in Seers, 1964) and for the first time it became fully apparent with what scant resources independence would be faced. In highly summarized form, the picture was as follows: in round figures, the new nation had about 100 African citizens with university degrees, about 1,500 who had completed a fully secondary education, and a further 6,000 with only two years of secondary schooling. Assuming that about 1,500 would be continuing in some form of full-time education or training as increased opportunities became available at home or overseas, this left about 6,000 at Form II and above to meet the needs of early Africanisation and of rapid expansion in the Civil Service and elsewhere. At the next level, there were an estimated 36,000 with a completed primary education. (Heron 1964)

EDUCATION

On the education front, the first problem to be faced was that of using to the best advantage the extra Form I places in the secondary schools in January 1965, resulting from integration of the formerly separate Federal (European) and territorial (African) systems and from some additional classes. This resulted in about 5,000 places being available to roughly 12,000 primary leavers of all ethnic groups. The problem was to produce an examination which could be seen by the public as an honest attempt to give equality of opportunity to all candidates, whether African or otherwise. It could not be more than an attempt, since culturally and linguistically if not also educationally, the child whose first language in home and school was English was bound to have some advantage over an African child of equal ability. All one could do was to minimize it.

This examination consisted of objectively-marked papers in English and arithmetic achievement, a non-verbal reasoning test of the matrices type, and a verbal reasoning test. All candidates took a practice examination one week before the real one, to familiarize them with the new type of paper and method of recording answers. The raw marks were converted by computer to standard scores with a fixed mean of 100 and standard deviation of 15 points, thus permitting legitimate adding of the four marks to form a total. The totals were printed by the computer in rank order from highest to lowest within each secondary school of first choice. This greatly facilitated the allocation of places, leaving provincial meetings of headmasters only to discuss acceptance of cases not accepted in the school of first choice.

Considerable satisfaction was expressed with this examination, and a similar one was constructed for the 1966 secondary school selection procedure, which was carried out in September 1965. On this occasion, 34,000 primary leavers were competing for about 8,000 secondary places; the large entry

was occasioned by the shortening at one stroke of the primary system from eight years to seven. To achieve this, the two top classes both took the same examination, but raw marks were standardized within each group so that the two groups did not compete with each other. A proportionate quota of secondary places was allocated to each group.

Research on the 1964 examination results has been proceeding during 1965 and some preliminary observations can be made here. (See Appendix). A 100 per cent follow-up is planned at Form II level at the end of 1966, and at the end of secondary education in 1969. Without such carefully-designed follow-up evaluations, it is of course impossible to effect improvements in selection procedures.

THE PUBLIC SERVICE

It will readily be appreciated that no young country can feel itself to be independent until its Civil Service is manned by its own nationals. Prior to independence in Zambia, very slow progress was made in the preparation of African civil servants for rapid promotion, though a Staff Training College was in operation by early 1964. By the beginning of 1965, it was becoming clear that candidates for training courses for promotion to the administrative and executive grades were no longer coming forward. With Cabinet approval, the chairman of the Public Service Commission set up a Civil Service Examinations Board, with the author as chairman and Mr. Colin Lancaster of the Staff Training College as secretary.

It was agreed to set a promotion examination for which all Zambian members of the Civil Service below executive grade would be eligible, provided they met one of three combinations of education and service, viz., Form IV and 2 years service; Form II and 4 years; post-primary and 6 years. This produced 2,184 candidates; the task was to identify 30 people for admission to administrative grade training and 90 for executive grade training. One may wonder whether so massive an exercise was necessary to produce so small a return: but the circumstances fully justified the effort, since once successfully carried out, there could be no reasonable doubt in the mind of anyone that all the available talent had been located and brought forward.

This examination was carried out on the same day at 41 centres throughout the country, teams of invigilators having been previously briefed at provincial headquarters by the author and Mr. Lancaster, when they delivered the examination papers with the aid of the Government communications flight. There were four papers. One involved writing a letter to one's Permanent Secretary putting forward a case, based on the brief provided; one was an objectively-marked test of English comprehension; and the two other papers were Zambian versions of objective reasoning tests used by the Civil Service Commission in the United Kingdom.

The raw marks were processed by computer in the same way as for the secondary school examination, but only the best 240 results were printed, in rank order. A second stage selection procedure was then mounted in respect of the best 60 candidates. This consisted of leaderless-group discussions of selected civil service topics and current issues; each group contained six candidates, each of whom had been given the topic to consider privately for 15 minutes before coming into the discussion room. The three examiners were senior African civil servants: the author acted only as a convener. The third criterion for selection was length of service since date of first appointment.

The ranks (out of 60) obtained by each candidate on the written examination, the leaderless group discussion, and length of service, were added

and the total ranks re-ranked 1 to 60 to give a final position. Assignment to administrative grade courses at the Staff Training College was then made by the Public Service Commission in consultation with the Chief Establishment Officer. Those candidates not assigned and not already of executive grade, then went to the top of the list for executive training.

A second similar examination was later carried out, involving 1,640 candidates for the Civil Service from the teaching service: this is also intended to produce a further 30 administrative and 90 executive grade trainees. Assuming that one-half the total of 60 administrative grade trainees pass, that the other half drop back to executive level, and that two-thirds of the executive trainees pass, the net gain to the higher levels of the Civil Service from the two exercises would be 30 new administrative officers and 150 new executive officers. This would average 2 and 10 respectively per Ministry. As in the case of the secondary school examinations, the trainees are being followed-up to the end of their training course, and thereafter in service. Methods of assessment of training and in-service performance have been developed and are being improved following earlier experience.

A UNIFIED PROVISION

We have considered the large-scale exercises: there have been many smaller ones, but it would be tedious to describe them in detail. Suffice to say that assistance has been rendered in the selection for training of Army and Air-Force officer cadets; nurses; punch-operators; bank clerks; meteorological assistants, etc.; for further education in evening classes, teacher training etc.; and for promotion in the broadcasting system and in local government. Recently a quasi-governmental Educational and Occupational Assessment Service has been started, with full Cabinet backing. This is a tri-partite undertaking: the senior staff (of three psychologists) has been seconded from the U.K. under the technical assistance programme, the Zambian Government has provided a local budget to cover junior staff, vehicles etc., and the University serves as a physical base for the Service (at the Institute for Social Research). The Service is administered by a Working Party responsible to the Office of the President.

This assessment Service is available to all branches of the public service and to the private sector. By special arrangement, the mining industry is contributing to the staffing and operations of the Assessment Service in such a way as to enable it to meet that industry's special and considerable needs, without weakening the general provision.

MANPOWER UTILIZATION

During 1965, efforts have been made by the Ministry of National Development and Planning (which incorporates the Directorate of Manpower) to ensure as far as possible that all Zambian graduates and secondary school leavers are employed, continue education or start training, in such ways as will best serve the needs of the country. To this end, a specially-prepared "careers" booklet was put in the hands of every secondary school leaver during his last term, together with a "careers preference schedule". The latter contained a second part which asked head-teachers to indicate their estimate of the probable success of the school-leaver in each of the O)level or A-level subjects for which he had been entered as a candidate in the 1965 examinations. This estimate was simply '+' (probable), '?' (doubtful) and '-' (improbable).

Since secondary schools close in early December and examination results do not become available until mid-February, "direction" by the Manpower Committee must at present be based on an attempt to match national need on the one hand to a combination of expressed preferences and the head-teachers' predictions on the other; that is, so long as it is regarded as essential that leavers are "brought into the fold" immediately the session ends. This was recognized as unsatisfactory, and the author was asked to devise a set of objectively-marked papers which might - if successful - be sufficiently good predictors of O-level success to improve on head-teacher predictions or at least to enhance their value. If an experiment this year was sufficiently successful, a similar specially-prepared examination could be taken in 1966 by all O-level school leavers in the middle term of their final year, results would then be available for use concurrently with the career preference returns and the head-teachers' predictions.

The experimental examination was taken by 700 Zambian secondary-school leavers in early November 1965, and results will shortly be available. The papers used were as follows: Use of English; two reasoning tests (one verbal, one non-verbal); mathematics (two parts, one purely numerical); a mechanical reasoning test; and a two-dimensional shape visualization test. All these papers, like those used in secondary selection and in the Civil Service, have been specially adapted or prepared for use in Zambia.

Mention has been made of the Career Preference schedule, issued by the Ministry of National Development and Planning; it has already been appreciated that there is much work to be done in improving the content and format of this. Such work falls within the terms of reference of the Educational and Occupational Assessment Service, and is already under way.

CONCLUSION

As things stand at present, this paper is of necessity more a progress report than a research document. The research these empirical studies have generated is already in train, but for results we must allow time to pass until evaluation is possible. Meanwhile, the process has commenced of ensuring that evaluation will be possible: this means the devising of suitable criteria of performance - in secondary schools, in the Civil Service, in training institutions, in commerce and industry - by which to judge the procedures here described. If experience elsewhere is anything to go by, this exercise will itself contribute substantially to the economical use of Zambia's higher-level manpower. The present paper is offered in response to the interest shown in East Africa in what Zambia has been doing during the past two years: we in Zambia look forward to learning of recent developments along similar lines in East Africa, following on the pioneer work of Silvey (1933) during his association with the East African Institute of Social Research. Our own progress owes much to the work in our own Institute of Irvine (Macarthur, Irvine and Brimble, 1964).

Appendix

Preliminary Analysis of 1964 Secondary School
Selection Examination Data

I Evidence on level and spread of difficulty

	<u>Possible score</u>	<u>Mean</u>	<u>S.D.</u>
English	60	35.02	9.39
Arithmetic	30	18.58	5.06
Non-Verbal Reasoning	35	19.00	7.50
Verbal Reasoning	25	11.91	6.03
(Form Perception	49	17.78	8.94)

II Inter-correlations between papers: on individuals (1 in 20 sample)
above the diagonal, on schools below the diagonal

	English	Arith.	Non-v.Reas.	Verb.Reas.	Form Perc.
English	-	.48	.48	.27	.34
Arithmetic	.52	-	.51	.37	.30
Non-v. Reas.	.45	.48	-	.35	.47
Verbal Reas.	.43	.56	.60	-	.22
Form Perc.	.29	.27	.42	.45	-

First centroid: Individuals - Non-verbal reasoning, arithmetic
Schools - Verbal reasoning, non-verb. reasoning

Hypothesis: Individuals - some form of 'g'
Schools - "sophistication"

III Provincial differences in school performance on test of English

	<u>Best 27%</u>	<u>Middle</u>	<u>Worst 27%</u>	<u>Total</u>
Total Schools	71	119	70	260
<hr/>				
<u>Best</u>				
Prov. 1	10	16	9	35
4	17	12	0	29
5	12	19	4	35
7	13	24	5	42
Total	52	71	13	141
<hr/>				
<u>Worst</u>				
Prov. 2	5	10	9	24
3	9	27	15	51
6	1	6	8	15
8	3	5	21	29
Total	18	48	53	119

Misclassification: $\frac{(18 + 13)}{260} \times 100 = 13.8\%$

E.A.I.S.R. CONFERENCE, KAMPALA, JANUARY 3-8 1966.

PRELIMINARY RESULTS OF A LINEAR PROGRAMMING ANALYSIS
OF PEASANT FARMS IN MACHAKOS DISTRICT, KENYA.

Judith Heyer

(Institute for Development Studies, University
College, Nairobi)

Introduction

The model used in this study was discussed at length at the last EAISR Conference in December 1964¹. Similar models have been used in West Africa by A. McFarquhar and A. Evans², in Kenya by E. S. Clayton³, and in Rhodesia by R.W.M. Johnson⁴. My greatest debt, however, is to J. L. Joy who has developed the model for peasant agriculture in unpublished reports and papers, and at post-graduate seminar groups which I attended at the London School of Economics in 1963 - 4. The more general versions of the linear programming technique, with applications in many other fields, both in economics and elsewhere, are treated extensively in the literature. In addition to numerous articles and papers, standard texts are growing in number. This study draws most heavily on E. O. Heady and W. Candler "Linear Programming Methods", which has specific agricultural applications from the United States. But I have also drawn ideas from many other sources in the body of literature available.

The linear programming model used here maximises farm production from a given set of alternative production possibilities (activities), subject to labour and land resource constraints on the farmer, and in some variations subsistence and drought insurance constraints as well. Thus the model chooses the best combination of activities to maximise production on the farm. The alternative activities open to the farmer include both crop and livestock activities, farm and non-farm activities, which compete for the limited labour and land available to the farm.

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1. J. Heyer: A Linear Programming Model for Peasant Agriculture, EAISR Conference Paper, December 1964.
 2. A. McFarquhar & A. Evans: Linear Programming and the Combination of Enterprises in Tropical Agriculture, Journal of Agricultural Economics, Dec. 1957.
 3. E. S. Clayton: Economic Planning in Peasant Agriculture, Wye College, University of London, 1963.
 4. R. W. M. Johnson: The Labour Economy of the Reserves, Dept. of Economics, Occasional Paper No. 4, Salisbury, 1964.

Computations involved in finding the optimal solutions were carried out on the ICT 1500 computer in Nairobi.⁵ A standard linear programming routine was used. Much of the interest of the model lies in the changes that take place in the optimal solutions as one or more resource levels are varied. Unfortunately it was not possible to make the relatively minor adjustments that the linear programming routine required for continuous parametric variations in resource levels and other variables. A more lengthy process of varying resource levels at discrete intervals, and running series of programmes, has been used instead. This means that the exact points at which changes take place are not identified, but close approximations are obtained instead.

Typical v. Individual Farms.

There has been some discussion in the literature about programming typical or average farms⁶. In this study, programmes that are in some sense typical of the group of farmers studied, programmes based on modal input-output coefficients, have been taken first, but programmes based on individual case-study farms are being run as well. This paper discusses results that are based on typical activity vectors (with a wide range of resource combinations), but a more detailed investigation of individual case-study farms will follow. There are objections to the use of these modal figures, particularly in the present study in which the sample is not random, but rather a series of case-studies that were chosen to get a wide range of the different farm situations in the area. Some unusual farms were chosen deliberately and have a disproportionate influence on the sample; those that are more representative of the majority of farms in the area are less heavily weighted in the sample. Nevertheless, the group may behave much as a random sample as far as the input-output coefficients are concerned. With the present statistical knowledge of peasant farming areas in Kenya, a well-stratified sample is unlikely to give much improvement here. To get homogeneous strata as far as activity coefficients are concerned, it is necessary to stratify by resource combinations, including soils, topography, capital, etc. as well as land and labour, and also by efficiency of resource use, particularly labour. Taking averages without regard to these factors may result in solutions that ignore many of the important differences that get lost in the process of averaging. Simpson, in the article

5. I would like to acknowledge the generous assistance of ICT in providing free computer time for this study. I would also like to acknowledge the invaluable assistance given by Mrs. S. Levine, Institute for Development Studies, who channelled much of the information to and from the computer and sorted out many of the computational problems that arose.

6. I. E. Simpson: Farm Economist 1960: A. McFarquhar: Farm Economist 1961.

referred to above, argues that there is a case for using average input-output figures because anyone below average efficiency ought first to improve to the average level. He does not deal with the above-average farmers, though the advice offered as a result of typical farm programming may be far from optimal for them.

This study is continuing with a series of case-study programmes which recognise differences in labour efficiency, capital endowment, soils, topography, etc. reflected in the different input-output coefficients. The case-study programmes will also recognise the particular resources available to individual farms, different consumption requirements depending on the size of the family, and different non-farm possibilities such as woodwork, petty trade, and beer brewing not all of which are open to everyone. The results should differ from the average case, and it will be interesting to see how important the difference is. This will be some sort of test of the value of the average programmes given the data used here, and may help to decide whether typical farm programmes might have their place after all.

Annual Crop Activities

The results presented here are still of a preliminary nature and concentrate on annual crop activities which compete for a limited amount of labour and land. Taking the major rains alone, the limiting factors are land, labour for planting (2 constraints), labour for weeding (2 constraints), and labour for harvesting at different times (3 constraints). Crop activities are defined according to the crop mixture planted, the time at which it is planted, and the time and quantity of weeding it receives. These four factors are considered to determine output, and variations in these form the basis of the many different activities that face the farmer, representing the decisions he has to make. The farmer chooses both between different crop mixtures and between different intensities of operation for each.

The crop mixtures considered are maize/beans, maize/peas, maize/beans/peas, maize alone, beans alone, peas/millet, peas/sorghum, and peas/wimbi. All of these are planted in the major rains; the beans and the millet are harvested before the second rains; the maize just before and during the second rains; and sorghum, wimbi and peas continue through both rains to be harvested late in the year. For each crop mixture there is a choice between planting early, medium, or late; between weeding early, medium, or late; and between weeding a little, a medium amount or a lot. The total number of possible combinations is thus 243, so theoretically the farmer can choose between 243 possibilities in the major rains. In practice, of course, the choice is much narrower. Many of the theoretical possibilities can be rejected at once, as unattractive under any resource conditions. The process of rejection, however, is not as easy as it may first appear. Some activities can be rejected outright, because they use all scarce resources less efficiently than other activities.

But there is still too large a number of possible activities that remain. The present practices of farmers together with technical knowledge of the area were used as guides in the rejection of activities. Thus it is known that millet suffers less from being planted late than does maize, so more late planted millet choices were included than maize. But with the narrowing down of over 200 possibilities to between 35 and 50, (more would be unreasonable since the maximum number that can appear in the optimal solution with 8 constraints is 8), it was sometimes found that important choices had been left out. For example, the optimal solution might include a maize/beans mixture that was poorly weeded because weeding labour is scarce, and it might want that mixture early planted. The narrowed range of choices might only include a poorly weeded maize/beans mixture that was planted late, so the optimal solution would include this instead of an early planted one which would increase the value of the optimal solution found.

Much the most difficult data in activities is the yield or output data. It was suggested at a recent conference⁷ that as long as one had good input data one should be content with rough estimates of the yields that go with it, because of the difficulties of getting the kind of yield data one wants. The difficulties come with the need to associate particular yields with particular inputs, as well as the need to know how yields behave over the years. It might be possible with a large enough sample to get statistically significant relationships between yields and inputs, but that does not solve the problem of the variations from year to year. In this study 1962 - 3 yields were collected and provided interesting information on the range of yields obtained by different farmers under similar climatic conditions. But the data was insufficient to get meaningful statistical relationships between these yields and inputs. The 1962 - 3 yields, together with the technical agricultural knowledge in the area, provided the basis for estimating the output coefficients. The only factors taken to affect yields were the crop mixture, time of planting, and time and quantity of weeding, as mentioned above. Factors such as soils, topography, plant populations, manure and fertilisers could not be included from the data in the field study. Manure is used on a very small scale, and fertilisers are not used at all, so any investigation of the effects of these would have to rely on data taken from outside the area studied. This may be explored in this study at a later date.

Most of the programmes that have been run have been based on 1962-3 yields, but modifications are being tried to get closer to the long-run average yields. These are discussed below in the section on the objective function.

There was a problem with the estimate of the effects of mixed cropping compared with pure stands. Experimental work in dry areas of Tanzania, similar areas to the one

7. East African Agricultural Economics Conference, Nairobi, January 1965.

studied here, suggests that mixed crops give better yields per acre than crops planted in pure stands.⁸ An acre of mixed groundnuts and maize, for example gave a higher yield per acre than half an acre of each crop planted separately, and the difference was greater the poorer the soils and the rains. There appeared to be complementarity between the two crops in the use of water and soil nutrients at different times and different root depths. In Kenya, the assumption has been that pure stands always give higher yields. Programmes were run using both assumptions for comparison, and even with the Kenya assumption of higher yields the pure stands did not appear very much in the optimal solutions. It seems that even if pure stands give higher yields per acre, they are not chosen because they do not spread the labour peaks. With $2\frac{1}{2}$ acres of land and $\frac{1}{2}$ man of labour, under the Kenya assumption that pure stands give higher yields, only $\frac{1}{4}$ acre of maize in pure stand replaced some of the maize/beans/peas mixture in the optimal solution. With more labour, $1\frac{1}{2}$ men, when the necessity to spread labour peaks was less, $\frac{3}{4}$ acre of maize replaced $\frac{5}{4}$ acre maize/beans/peas in the optimal solution of the Tanzania assumption. When there is some doubt about assumptions, or coefficients, it is always possible to compare two series of programmes like this.

Major Rains Programmes

Programmes including crops planted in the major rains alone, and not including cotton which is becoming a major crop in the area, were run, varying land and labour available to the typical farm. The results are illustrated in the diagrams.

Diagram I shows how the limiting constraints change with different land/labour ratios. More labour constraints become operative as labour gets scarce and vice versa. In the first segment, (1), labour is not scarce at all and its marginal product is zero; in the last segment, (8), land has a marginal product of zero. Most of the case-study observations lie in the middle regions, segments (2) to (5). None lie in the segments (6), (7) and (8) where land gets plentiful. The few that lie in and near to (1) where the marginal product to labour (given the possible enterprises considered in the programmes) is zero, all have substantial outside occupations which have not so far been included as options in the programmes. The labour they devote to farming is much less than the labour they have available, and if their farming labour alone were considered they would lie in one of the middle segments instead. Similarly, the two case-studies at the other extreme, in segment (5) are rather special cases, both being rich widows with plenty of land.

Diagram II shows how the crop mixtures in the optimal solutions change with the changing constraints. In the first three segments maize/beans/peas mixtures are grown at different intensities of operation; in (4) some maize/peas is added as

8. EVANS: Experiments with Intercropping in Tanzania, East African Agricultural and Forestry Journal, July 1960 and July 1962.

weeding labour becomes scarce, (because beans require more weeding than peas); in (5) maize/beans mixtures are added as peas harvesting labour limits; and (6) and (7) bring in sorghum as the beans harvest limits as well. Finally (8) discards maize/beans/peas mixtures altogether and brings in some maize alone. As long as land is scarce relative to labour maize/beans/peas mixtures are important; as labour gets more and more scarce maize/beans and maize/peas mixtures come in, and eventually, beyond the range of observations studied, sorghum is included as well. When 1962-3 yields are used as the basis for output coefficients, millets and sorghums are not attractive because 1962-3 was a year of exceptionally good rain. When long-run subsistence considerations are introduced millets and sorghums will take their proper place.

Diagram III shows the values of the optimal solutions at different combinations of labour and land. 1962-3 yields and prices form the basis of these values.

This model is still rather far from reality with only one rains, no cotton, and 1962-3 objective function. More realistic models will be considered in the sections that follow.

The Addition of Minor Rains Crops and Cotton

The major rains model was extended to include the minor rains crops and cotton, whose labour requirements conflict with those of the minor rains crops. The extended model was first explored with the addition of minor rains crops alone, and later with cotton as well. When minor rains crops were added to the major rains crops, the change in both the optimal production patterns and the value of the optimal solutions was relatively small. This is shown in Diagram IV which compares the two total product curves as land is varied, and Diagrams VI and VII which compare the changing production patterns for the major rains crops in the two cases. The increase in the size of the matrix, to include the second rains crops, is however, large. The number of constraints is increased from 8 to 17: two additional labour constraints for minor rains planting, which conflicts with the major rains maize harvest; one additional labour constraint for minor rains weeding, which conflicts with maize and wimbi harvests; and two additional labour constraints for cotton harvesting which is included later. It is also necessary to add 4 new land constraints to deal with the sequence of major and minor rains crops. Land is available for second rains crops early or late, and clear, or with peas, among which new crops are interplanted. The major rains crops, together with the timing of the maize harvest determine the availability of minor rains land. The major rains activities are multiplied, with varying assumptions about the timing of the maize harvest, and new activities are added for the minor rains. The total possible number is increased from 243 to about 700. The total selected for the matrix is increased to about 150. The addition of one more variable in the activities, in this case the choice of when to harvest maize, enormously increases

the size of the matrix, as does the addition of a few more constraints to deal with the minor rains crops.

There is an interesting problem that arises with the consideration of minor rains crops. Labour that is not limiting has been treated in the model as free. The minor rains crops have very low yields, but as most of the labour they use is otherwise idle, many second rains crops are brought in, which only marginally increase the value of the optimal solution. For this reason it might be necessary to put a price on labour, below which people do not think it worth while to work. Then second rains crops will only be included if they give a high enough return to the labour used. If this is done, second rains crops should probably be valued differently as well. One of the main reasons for planting crops in the minor rains is for fresh seed for the major rains again. If this is so, a certain amount of the minor rains crops might be valued at a high price for seed purposes, leaving any surplus over this to be valued as before.

In the same way, it would be possible to remove the fixed limits on labour available to the farm, and allow for the possibility of hiring labour if necessary. In this case a price equal to the local wage would be given to labour, and unlimited quantities would be used provided labour productivity exceeded the wage. Unfortunately this is not a realistic proposition for farmers in lowland Machakos, because cash is seldom available at the right time. In some of the case-studies, where cash is often available as working capital, the possibility of hiring labour will be explored. But for the typical case it is more realistic to exclude it, except perhaps for harvesting cotton which is discussed below. Credit is not available in this area as working capital for annual crops, because the risk of crop failure is too high.

The addition of cotton changes the situation considerably. Diagram V shows the shift in the total product curve, as land is varied, when cotton activities are introduced. Cotton raises the total product curve, as one would expect, opening up new levels of income for the farmers concerned. The advantages of cotton are less as labour becomes scarce in relation to land, but even then they are quite significant. Diagram VIII shows the change in major rains optimal production patterns, with the introduction of cotton. Production patterns change much as one would expect, with a shift from peas into beans because of the conflict between the peas and cotton harvests and the competition for labour at that time. In the minor rains, following the shift in the major rains which leaves less peas to be interplanted, there is a similar shift from crops interplanted with peas to crops planted on cleared land, with some peas mixtures coming in as labour gets scarce in relation to land. The minor rains changes are dictated by the changes in the major rains.

The quantity of cotton grown is determined mainly by the availability of harvesting labour in these programmes. As land varies, the acreage planted to cotton remains at a nearly constant level for this reason. The shadow price of harvesting labour is shs.7-8/- until land reaches 5 acres,

and beyond but it declines to shs.6, 5 and 4/- as the yield per acre becomes less important and the yield per man more crucial, on the farm as a whole. It might be possible to consider the hire of cotton harvesting labour, as some crops have already been harvested by the end of May when the cotton harvest begins, and cash is more likely to be available to pay the wage. Once the first cotton sales have taken place, there should certainly be enough money to pay hired labour, provided it is worth its price. Labour is most limiting in August and September, when the peas harvest also takes place, and this is after the 1st cotton sales. The local wage is between 1 and 4/- and is certainly well below the shadow price. Some programmes will be run to explore the possibilities of increasing the acreage of cotton and hiring labour to help. But as cotton acreage is increased, labour may not be so readily available for this work. Perhaps a sufficiently high wage could be paid to attract the unemployed of Nairobi to pick cotton in this season. The distance involved is small and this might be a real possibility. The problem is that cotton picking is only a seasonal form of employment.

Changes in the Objective Function

Alternative objective functions are being maximised. The first programmes, discussed above, have simply taken the 1962-3 yields and prices and maximised cash returns on the basis of these. This can be seen as a case-study of the year 1962-3, and the solutions are optimal if all years are like 1962-3, or even if 1962-3 represented an average over the years. 1962-3 was taken because the data had been collected for that year, but it was a year with unusually good rains, in which the crops were well above average, so it is misleading as a basis for farmers' decisions. Years such as 1962-3 occur perhaps two or three times in ten years. Programmes are being modified both to take account of the longer-run position, and to treat subsistence requirements separately from cash returns, of course.

Subsistence requirements are added to resource constraints as further limitations on the system. The production of subsistence crops then has to be at least enough to satisfy the subsistence requirements stipulated. The programme chooses how to satisfy the requirements, and then maximises cash returns above this. Two extra activities are also added to allow for the wide differential between the buying and selling price of maize in Kenya. Subsistence maize requirements are satisfied either by producing or by buying maize at the high price of shs.50/-. Any surplus maize is sold at the producer price of shs.20/-. The subsistence requirements stipulated per adult - equivalent to be fed were: 1.66 bags of maize, 0.80 bags of pulses (beans or peas), 0.07 bags of wimbi, and 0.07 bags of sorghum. In addition, one drought insurance requirement was included: 0.12 bags of millet per adult equivalent had to be produced as a famine reserve. Many farmers in lowland Machakos produce millet for this.

Programmes have been run with subsistence and millet requirements, and 1962-3 yields, with $4\frac{1}{2}$ and $2\frac{1}{2}$ acres of land, varying labour between $\frac{5}{8}$ and 3 men, and adult-equivalents to feed between 1 and 5. More programmes will be run to get the complete pattern, and the solutions so far obtained are insufficient to give more than a brief summary. In all cases tried with $4\frac{1}{2}$ acres, families were able to feed themselves without buying maize, and produced a surplus of maize and pulses averaging about half the total value of production on the farm. Sorghum, wimbi and millet requirements were always met, but a sacrifice in production was involved here, as they would not otherwise have appeared in the optimal solutions. The sacrifice involved per adult-equivalent was normally about sh.11/- for millet, with occasional values of 7/- and one or two very high. For sorghum the sacrifice was usually about sh.5/- and for wimbi about sh.8/-. The sacrifice involved in introducing subsistence requirements was surprisingly small in a total of between sh.400/- and sh.700/-. The surpluses of maize and pulses produced varied between $1\frac{1}{2}$ and 10 bags of maize and $4\frac{1}{2}$ and 10 bags of pulses.

When acreage was only $2\frac{1}{2}$, the surplus averaged only about $\frac{1}{4}$ of total production, with 1962-3 yields, and there were one or two cases where maize was bought at the high price of sh.50/- although a small surplus of pulses could probably have been replaced by home-grown maize. It was more profitable to buy maize and produce the pulses for sale. This occurred only in a few exceptional cases. In most cases there was a surplus of both maize, (varying from - 1.8 to 4.5 bags this time), and pulses, (varying from 1.5 to 5.25 bags). The sacrifice involved in satisfying the subsistence requirements of wimbi was between sh.4/- and sh.13/- per adult-equivalent sorghum between sh.4/- and sh.17/-, and millet insurance sh.4/- to sh.13/-. Again this is not very large.

These subsistence programmes will be developed further, more with estimated long-run average yields than with the exceptionally good yields of 1962-3.

Two approaches are being tried, to get a closer approximation to the long-run position which determines farmers' decisions in practice. First, rough estimates of long-run average yields, increasing the relative positions of the drought resistant crops compared with 1962-3; and second, a combination of "good year" and "bad year" figures, a weighted average reflecting the incidence of each.

A programme based on the long-run average estimates has been run. With 5 acres of land, and 2.5 men, 3 acres of maize/peas mixtures replace maize/beans/peas when average yields are used, because in the long-run peas are more favourable than beans. But still no drought-resistant millets or sorghums appear, probably because their yields and prices are so low, that it would need very drastically changed assumptions to make them worth growing. An explanation is still required, however, to show why these crops are grown so much at present.

Livestock, Sisal and Non-Farm Activities

Annual crop activities are not the only alternatives open to farmers and the labour and land resources of a farm are not confined to these. The two most important competitors on the farm are sisal and livestock. Off the farm there are numerous possible activities such as beer brewing and casual labour for the women, petty trading for the women or the men, & woodwork, ox-carting, brick making, building, etc. for the men. The discussion of optimal labour use is incomplete without the inclusion of possibilities such as these, which offer very real alternative uses for labour. But alternatives such as permanent businesses and shops, and permanent employment are not included here, as they involve a substantial long-term commitment that cannot be marginally adjusted if it is more or less profitable than activities on the farm at any time. If farmers are involved in long-term enterprises such as these, labour available to the farm is correspondingly reduced to allow for this. But when the farm position is analysed, the profitability of farming and engaging in short-term peripheral activities is compared with the profitability of the long-term business or employment concerned, to see whether the farmer should stay in business, or come back to full time occupation on the farm.

The criterion for including alternative possibilities in the programme, is whether they compete with the annual crops for scarce resources or not. Sisal is grown everywhere as a hedgerow, to mark boundaries and give some (rather ineffective) protection against livestock. It does not do away with the need to herd cattle. Because it is there, people exploit it, cutting it back and decortivating it by hand, using very primitive methods, pulling each leaf through a narrow gap between two pangas stuck in an old tree stump near the house. Decortivation is a very time-consuming process, and very hard on the hands, and it only brings in a meagre return to the labour involved. It is an occupation for labour that is otherwise idle, undertaken only by women and children, at times when there are no other urgent jobs on the farm. No one has hedgerow sisal sufficient to occupy his family for more than a small part of the year, and it is almost certainly uneconomic, given the shortage of land, to plant sisal anywhere else. Some families do not use their sisal leaves, and in these cases close relatives are usually allowed to use them instead. Where there are people interested in decortivating sisal, which is true of the majority of families, hedgerows are planted to the fill, but where there is no interest there is often room for a little more. Occasionally poor families that are fully occupied sell sisal leaves, but there is not much of a market for these.

Sisal decortivation fluctuates considerably with the price, the time of the year, and the food position, as the Machakos Sisal Scheme of the 1950s found to its cost. When food is short sisal provides some cash with which to obtain food. Otherwise, it is a useful supplement at times of the year when labour is idle, and it provides substantial amounts of cash for children for buying clothes, chickens, or even sheep

and goats, and for women who have few outside occupations apart from the farm. The opportunity cost of labour, and the price below which people are not prepared to work, might usefully be measured in terms of sisal returns. But sisal can hardly be considered for inclusion in the linear programme because it does not compete for resources that are scarce.

Livestock activities raise some different issues. The main limit on livestock activities is undoubtedly cash. Livestock are treated as savings bank, bought when there is surplus cash from a good harvest or a profitable business transaction, and sold when there is a pressing need for cash such as for school fees, sickness, or food. If there is no room on the farm, they can be lent to friends; if there is grazing to spare they can be borrowed. Livestock ownership depends on the availability of cash, but livestock services depend more on the availability of grazing land.

It is useful to make a distinction between returns to capital and returns to grazing land, here. With cows it is easy to separate the two: calves are regarded as the return to capital, and belong to the owner when they are born; the services of milk and manure are regarded as returns to grazing and belong to whoever is keeping the cows. With oxen the distinction is not so clear. Oxen depreciate with age, and the only returns they give are in the form of ploughing and sometimes carting services and manure. Both the returns to capital and the returns to grazing land come mainly from their ploughing use. Thus oxen are nearly always kept by their owners, while cows are often lent. Where oxen are grazed by friends from time to time, there is usually some arrangement for sharing their services for ploughing.

Sheep and goats are treated in a similar way, but where they are lent out, some payment is given for grazing in the form of meat when they are killed, or offspring, since the services they render to the person grazing them are negligible.

Livestock activities thus enter the programme as competitors for limited land. They use land that is unfit for cropping up to a point, but beyond that they compete for arable land. They also compete for labour, but much of the labour involved in herding them does not depend on the number of cattle that are kept. Spraying labour varies with the number of cattle, but if cattle are to be kept at all a fixed amount of labour is withdrawn from the farm for herding regardless of the number of cattle kept.

Non-farm activities that are considered are: casual labour at weeding time for women; beer brewing for women; petty trade for men or women; woodwork, ox-carting where oxen and a cart are available, and brick-making for men; and special activities where there is a skilled person in the family to whom special possibilities are open, such as on one farm where there is a semi-skilled builder who earns substantial sums by building houses and schools whenever there is work. These all appear as extra activities, with given claims on labour, some of them sporadic, whenever labour is more profitably used on them than on the farm, at different times of the year, others more constant

because they cannot be operated discontinuously without the risk of loosing the business altogether, or under-utilising the capital involved. Casual labour, and petty trading can be operated sporadically at will; ox-carting and beer brewing need to be operated more continuously if at all.

Other Limiting Resources

The major resources investigated throughout are labour and land, because these are considered to be by far the most important in the lowland Machakos situation. However, other resources such as fixed capital and managerial ability are not entirely neglected here. Fixed productive capital consists of oxen, ploughs, ox-carts, sisal fencing, land improvements and other smaller implements that are not generally in limited supply. Improvements to land are difficult to quantify and no attempt was made to measure them in the field. They simply appear as descriptive background to case-study results. They consist primarily of soil conservation works which were carried out in the 1940s and 1950s under strong Government pressure, and which vary enormously in quantity and quality, and also in the extent to which they are maintained now that Government pressure has been reduced. Improvements in the form of manure and good crop rotations are also part of what makes for efficiency differences in the case-study results.

The most important capital differences are in oxen and ploughs, and while these are not treated as resources in the programmes, the results of sharing or not having them will be investigated instead. People without oxen and ploughs either have to hire them, or wait until very late in the season to do their ploughing and planting work. People who share oxen and ploughs often find their planting gets delayed.

Managerial ability similarly enters in the discussion of individual case-study farms. Some farmers are considered to be able to deal with more complex farm plans, and more complex innovations than others.

Conclusions

The results presented here are still fairly far-removed from reality, and the programmes remain to be modified quite substantially to represent a good approximation to the true position. However, it is hoped that the results shown so far have indicated the possibilities of the technique, and the degree of realism that can be obtained in using the linear programming model to analyse peasant farm situations. Once the data have been collected and processed into a suitable form for analysis, the programming formulation is probably superior to any other possible method of treatment. Budgeting uses the same information to give far fewer results, and any purely descriptive analysis can hardly get to the root of the problem at all. Once the linear programme has been set up,

it can be used to identify important relationships and provide much normative information that can be useful in the planning process.

The main interest of the programme solutions lies in the series of results that show the changing patterns, rather than in any one result alone. One result, giving an optimal farm plan to be accepted or rejected for one type of peasant farm, is neither reliable enough nor of sufficient interest to be worth all the work that is involved in getting the result. But the comparisons and relationships brought out by running series of programmes are what increase our understanding of the farm situations, and what give us the basis for the planning of development that we need. Relationships some of which have been demonstrated in this paper, between land, labour and production; the relative scarcity of labour and land; the implications of greater pressure on the land for the production pattern; the sacrifices involved in producing one's own subsistence food needs; the position of farm as opposed to non-farm occupations; etc., etc. all throw new light on farm production in the area under study, which can be of value to planners, giving real guides for future development policy. This paper has not followed the analysis far enough to demonstrate all of these factors, and it may be argued that the possibilities considered should be extended further to include more radical change, but it is hoped that the paper has shown enough through the preliminary results to indicate the immense possibilities of the method that has been used.

Judith Heyer
Dec. 1965.

DIAGRAM I: LAND - LABOUR COMBINATIONS

CHANGES IN LIMITING RESOURCES

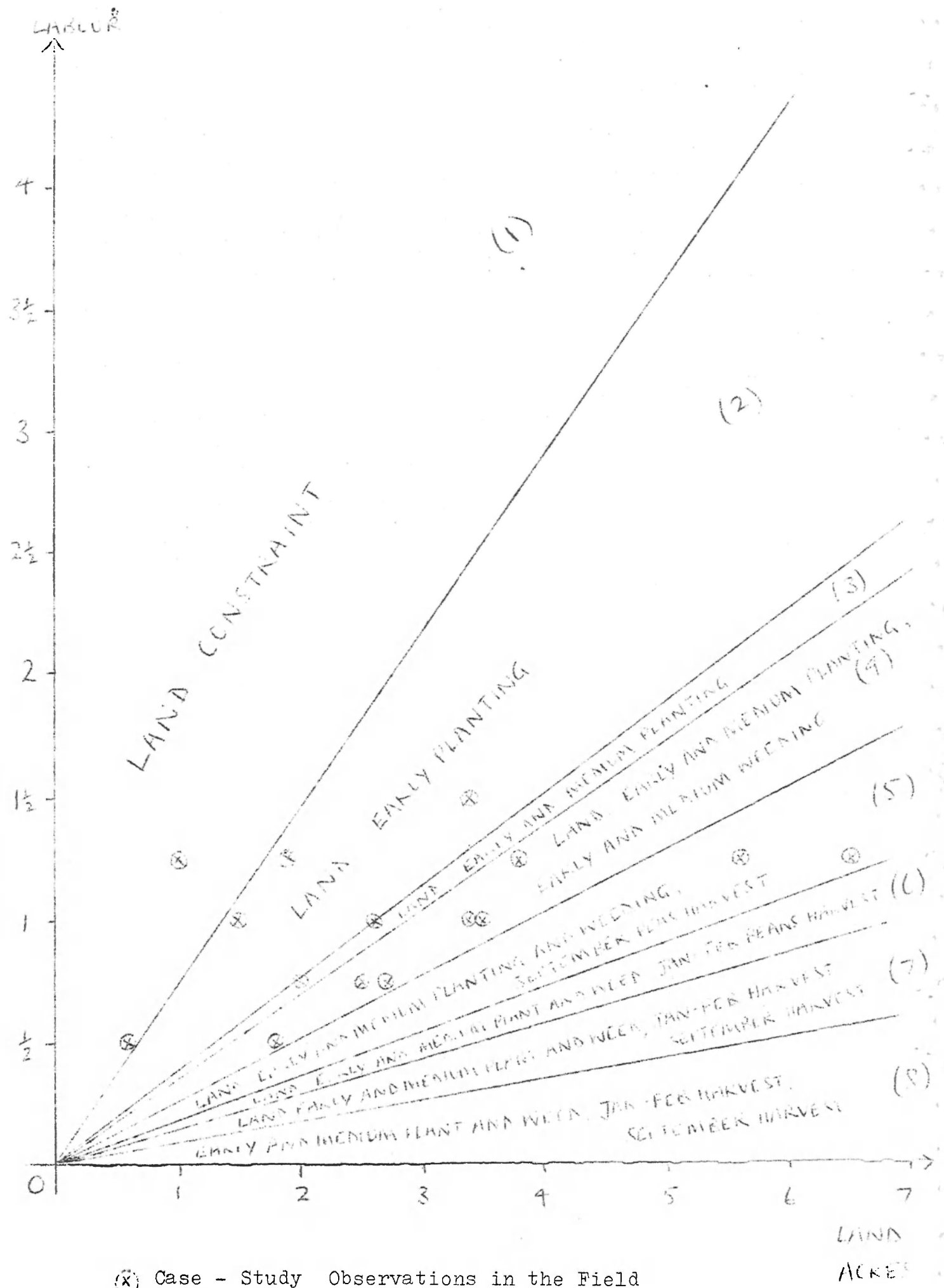


DIAGRAM II: LAND - LABOUR COMBINATIONS

CHANGES IN CROP MIXTURES

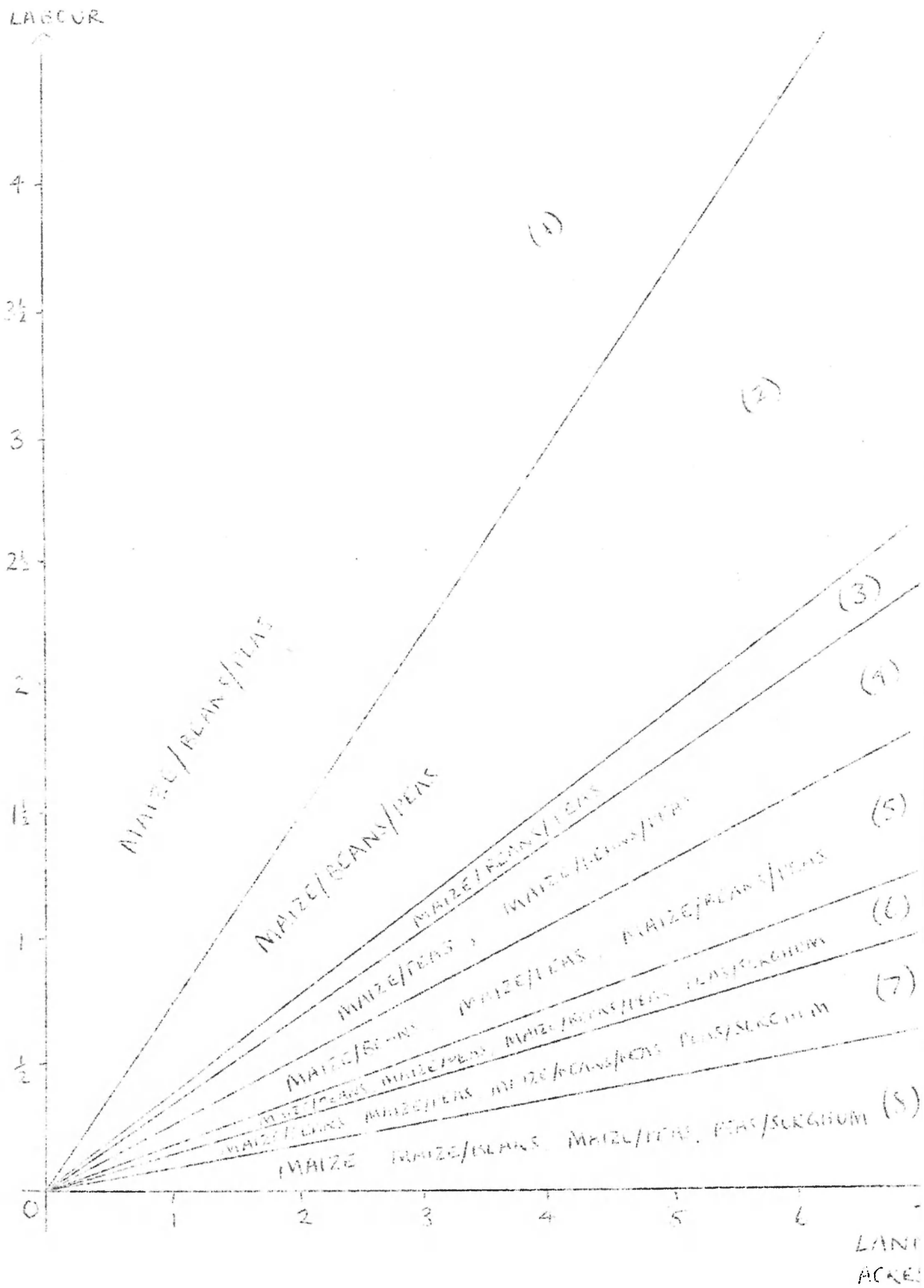


DIAGRAM III: LAND - LABOUR COMBINATIONS
VALUES OF OPTIMAL SOLUTIONS (Sh.)

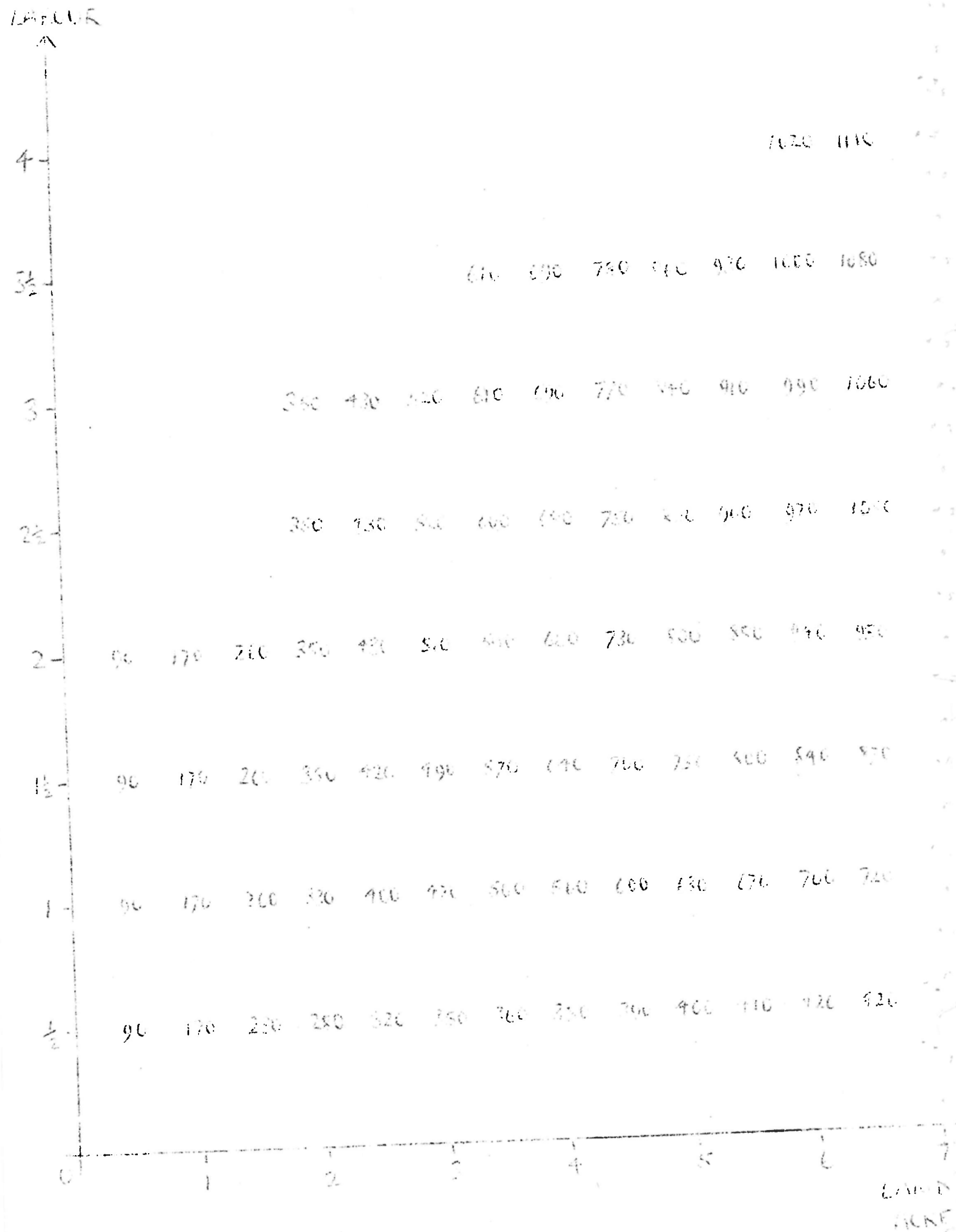


DIAGRAM IV: TOTAL PRODUCT CURVES

I Major Rains Crops Only

II Major and Minor Rains Crops

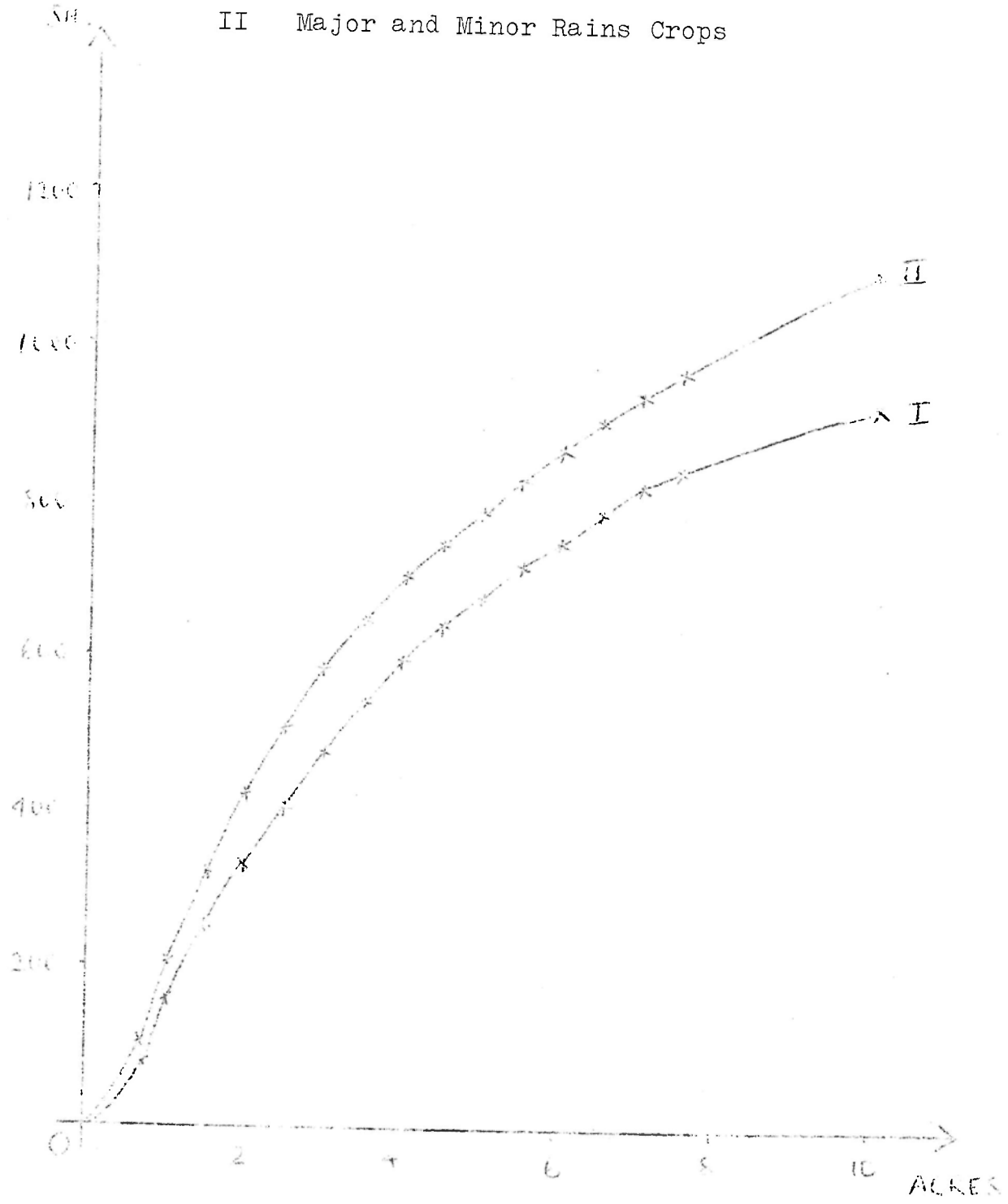


DIAGRAM V: TOTAL PRODUCT CURVES

II Major and Minor Rains Crops, No Cotton
IIA Major and Minor Rains Crops, With Cotton

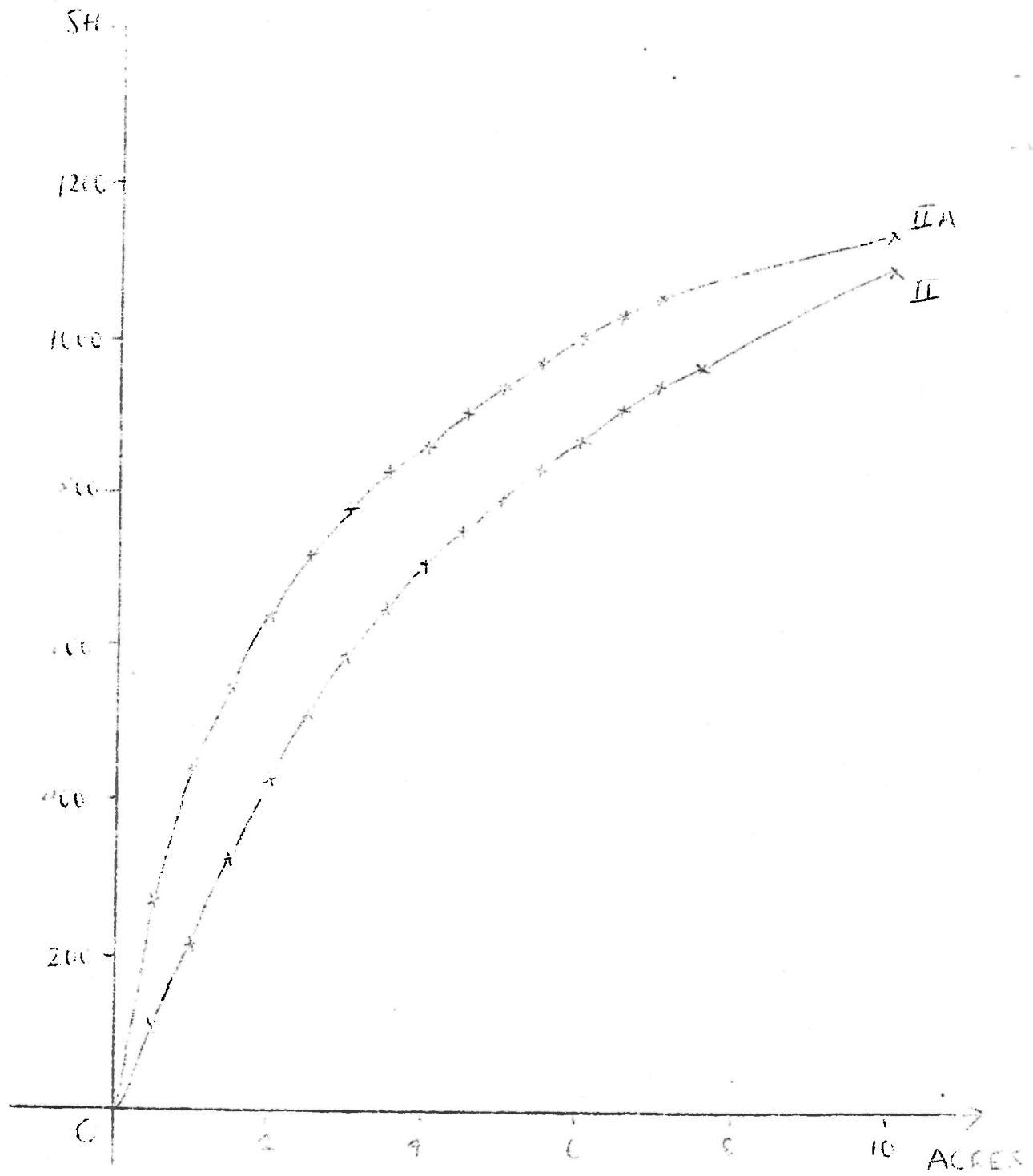








DIAGRAM VI: MAJOR RAINS ONLY

PROGRAMME CHANGES, VARYING LAND. (1 1/2 MEN LABOUR)

ACRES OF MAJOR RAINS CROPS

-  MAIZE/BEANS/PEAS
-  MAIZE/PEAS
-  MAIZE/BEANS
-  PEAS/SORGHUM
-  Boundary of crops weeded in middle time period
-  Low weeded crops

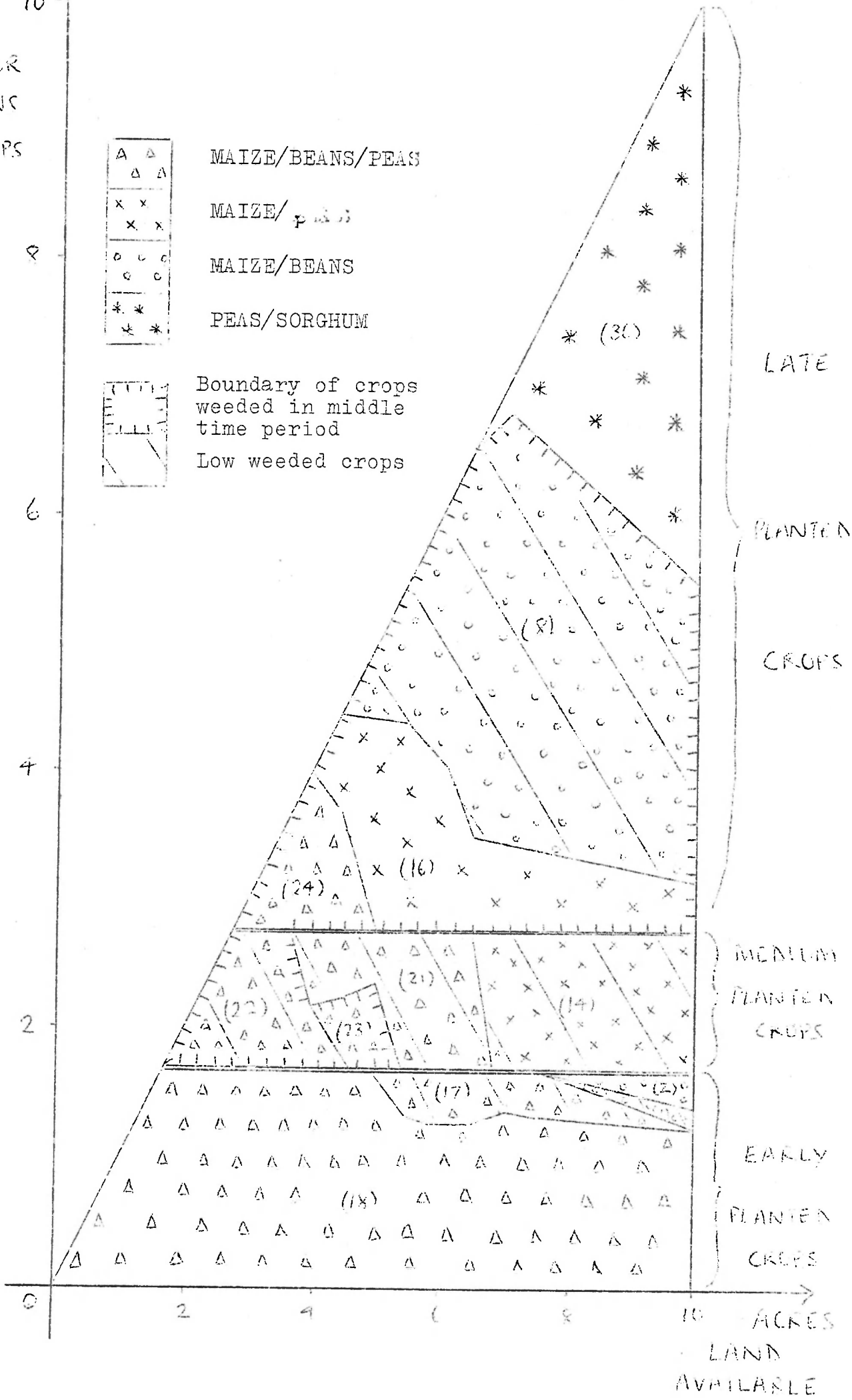


DIAGRAM VII: MAJOR & MINOR RAINS, NO COTTON
 PROGRAMME CHANGES, VARYING LAND, (1½ MEN LABOUR)

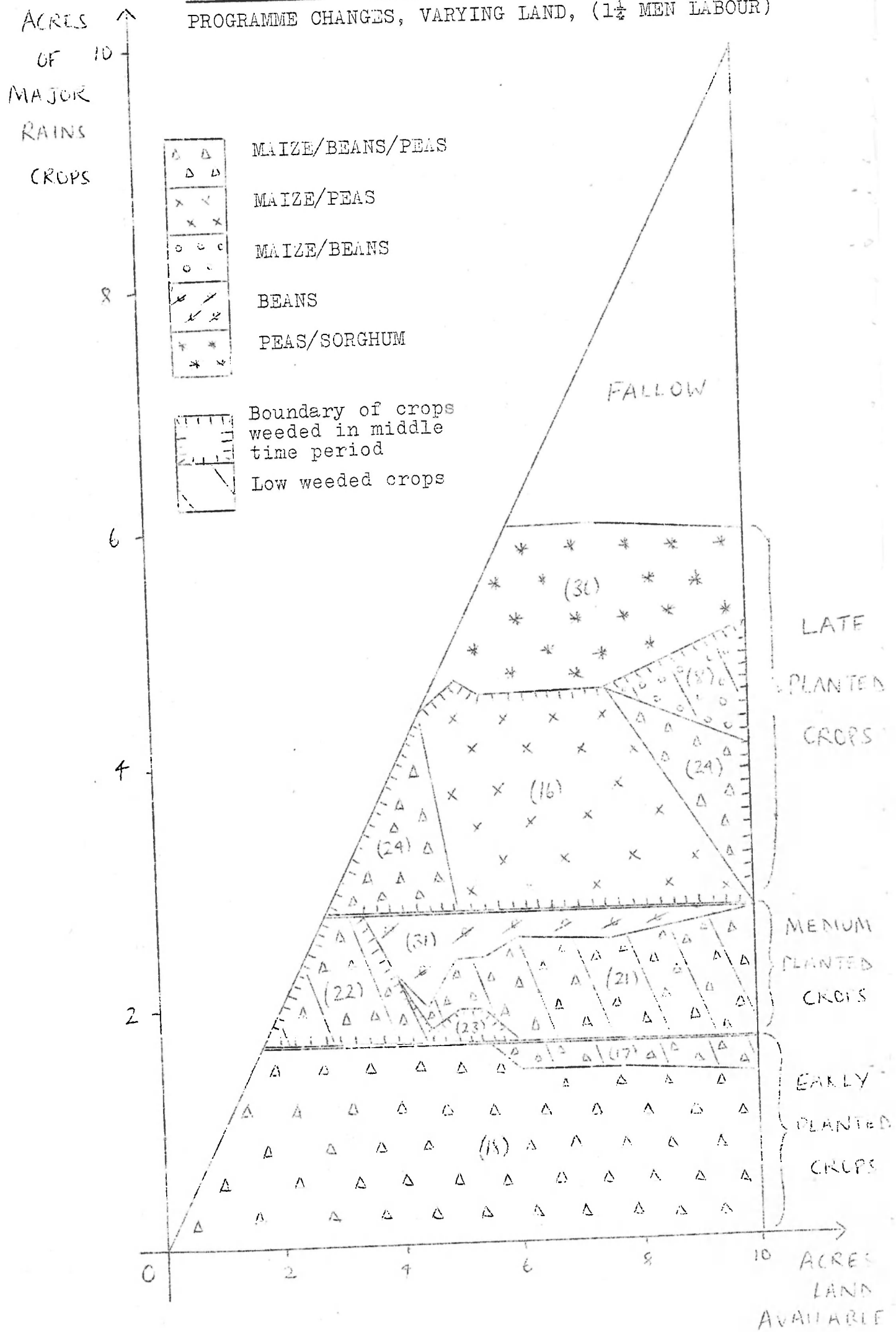
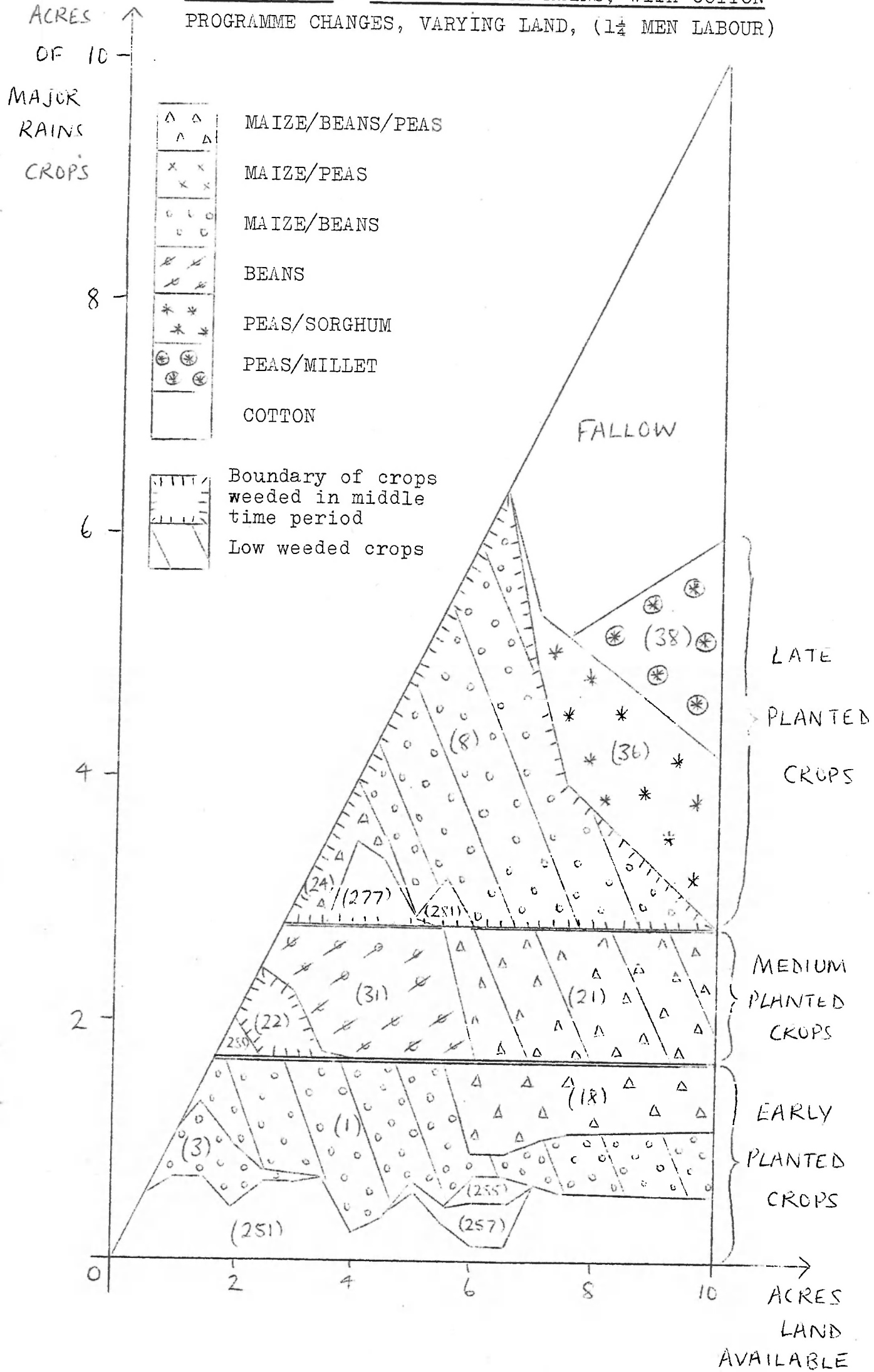


DIAGRAM VIII: MAJOR & MINOR RAINS, WITH COTTON PROGRAMME CHANGES, VARYING LAND, (1½ MEN LABOUR)



THE CASE FOR COOPERATIVE LOAN ASSOCIATIONS IN KENYA

N. O. Jorgensen

For the sake of those genuinely interested, the main points of the paper, which are listed below, should serve as a guide. For those only remotely concerned, the same points together with "conclusions" on the last page might serve as an outline of the topic.

Introduction:

- (a) Part of a study on financing of small scale enterprises.
 - (b) Limitations of the subject as treated here.
- A. The need for credit:
- (a) Is there a need, - and if so, how is it determined?
 - (b) Existing credit institutions and their scope for expansion.
- B. Cooperative financing in Principle:
- (a) Criteria for membership and the creation of credit.
 - (b) The principle of collective collateral.
 - (c) Maturity terms and ways of repayment.
 - (d) Conversion and renewal.
- C. Cooperative financing adapted to local conditions:
- (a) Where applicable: Industry, Commerce, Agriculture and Housing.
 - (b) Administration and cost.
 - (c) Its part in development.
 - (d) Legislation and money market effects.
- D. Conclusions: (points for discussion)

Introduction:

It is very likely that this discussion paper is premature from more than one point of view. First of all, the study on which it is to be based is only three months old and actually much too young to give birth to a new offspring of such complex nature. Secondly the local environment into which this concept of cooperative financing is to be delivered might not be at all ready to receive it. This is what I don't know, and that is why this is a discussion paper in the true sense of the word. The fact that I have worked with cooperative financing before is mentioned only to serve as an explanation for conceiving the idea and does not in any way preclude a critical treatment of the subject here, because not only was it operating in a much more sophisticated economy, it was also quite evident to some of us that the system could be improved.

As far as I know cooperative loan associations, such as I am going to outline in this paper, have not been attempted in any other country which might reasonably well be compared with Kenya. I am therefore limited by not being able to refer to past experience in developing the system. Whether or not the implementation of such financing will, in fact, be one of the recommendations flowing from my study of "Financing of small scale Enterprises" can only be determined by the research itself and after a critical analysis of the implications. But, as in any research, you need to have your theses viewed from all angles and at the earliest possible stage. I am therefore vitally interested in having this idea subjected to discussion among those who have a much longer and more practical experience with conditions here.

The extent of this paper does not allow a listing of all the details in the practical implementation of a cooperative of this sort. Likewise there are monetary policy aspects of this, which are only touched upon lightly and, admittedly, out of proportion to their significance in the long run from a macro-economic point of view.

A. The need for credit

"A shortage of capital is usually considered one of the most immediate and pressing as well as one of the most fundamental obstacles to domestic and private investment and thus to economic growth in the less developed countries." This quotation from Sayre Schatz¹⁾ expresses something which may not be as undisputed as it seems. In the same study he himself points to what is now known as the Capital Shortage Illusion by suggesting that in the case of Nigeria the situation (1956-62) was such that "rather than a large number of viable projects vainly seeking capital, capital has been vainly seeking viable private projects". He found that even after a liberal appraisal of loan applications to the Federal Loan Board of Nigeria only 18% were recommended for loans, and out of these only about half of the enterprises were successful.

Other similar studies seem to indicate that the percentage of viable and successful projects is higher in some other developing countries²⁾. It soon becomes obvious

¹⁾ The Capital Shortage Illusion: Government lending in Nigeria. Oxford Economic Papers Vol. 17 No.2 July, 1965.
²⁾ Nathaniel Engle: Industrial Development Banking in Action pub. in Pakistan Industrial Credit Corporation 1962.
Shirley Boskey: Problems and Practises of Development Banks. publ. for IBRD by Johns Hopkins Press 1959.

that in order to compare, it is essential to know what type and size of projects apply for loans and to ask what the criteria for viability is. Schatz uses the term very broadly saying that "if for any reason a project is considered unlikely to be commercially successful, is badly conceived or the applicant has insufficient entrepreneurial ability or because conditions external to the enterprise are unfavourable, such as the whole economic environment, then the project is not viable."

This definition clearly has many implications, - and the more it tries to qualify the reasons for potential commercial failure the more implications arise. To arrive at the right answer it is important to know whether, for instance, the reason for rejection of an application is due to "economic environment" or to being a "badly conceived project", just to mention two of the very general terms, which in themselves might proffer an equally useless answer, namely in the first case: a shortage of capital, and in the other: a shortage of viable projects.

Before embarking on an analysis of present conditions in Kenya we need to have a clearer frame of reference. The simple criteria of commercial success would have to be supplemented with the availability of collateral from the commercial banker's point of view, whereas government agencies, on the other hand, may disregard collateral and make their financing of enterprises a matter of policy. In fact, the concept of commercial success may be entirely lost, as in the case of farm subsidising (settlement schemes) housing and social welfare programmes.

How can the effective need, for credit if any, be measured in regard to magnitude?³⁾ Rather than go into an academic discussion here of the criteria for viability, let us turn to the local capital market and simply ask how the situation looks as viewed by the decision-makers of various financial institutions. My research has not yet progressed far enough for me to give/conclusive presentation, but it has soon become obvious from interviews that answers are consistent enough to justify some generalisations, which in turn will be supported by some relevant figures from available statistics.

In spite of the fact that deposits in commercial banks had been moving thus:

	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>May-June-July-65</u>		
Mill.£	56,9	50,2	52,4	59,2	62,5	65,0	60,6	61,0	61,9

the most important concern was lack of domestic savings, because total loans had gone up 9% from 1963 to -64 (as compared to 4% rise in deposits). The three major commercial banks indicated that they have to turn down otherwise profitable and creditworthy projects.

³⁾ To be sure, there will always be a need for credit, whether imagined or real. The effective need would then be those projects rejected for the reason of lack of capital by the existing outlets, given that all projects were aware of these outlets and their conditions and had made application. Another way of trying to determine the effective need for credit would be to make a survey of borrowers. These would necessarily include present as well as potential seekers of credit, which in theory would be close to the numbers of households. In order to determine what was an effective need one would have to apply to these answers a test of viability.

In the case of building societies, only one is at the moment making loans. The others are functioning merely as savings banks, because of the crises of 1960-61 with a large outflow of capital, which forced them stop their financing of mortgages. Here again deposits have been increasing at an even faster rate since 1963, apparently because the public - especially Africans - are now saving more than before and are becoming "interest-conscious". This is especially true of the East African Building Society, which has decidedly catered for Africans and has seen a 35% rise in deposits and investment shares from 63-64. Still the number of applications for loans "wait-listed" is growing.

The Stock brokers have experienced an increasing amount of funds flowing through their business to invest in local shares. They ascribe this fact to the effects of the exchange control and therefore it is perhaps temporary, but the rise in stock prices, which this has brought about, may attract other funds not formerly interested in this type of investment.

The wholly owned government agencies such as I.C.D.C.⁴⁾ and D.F.C.K.⁵⁾ are largely based on capital from abroad. The same is true of A.F.C.⁶⁾ and the new housing development corporation. In contrast to the commercial banks they engage in longer term loans for investment and development purposes. Their criteria for viability are different from other agencies and they do not have to rely on local savings.

⁴⁾ Industrial and Commercial Development Corporation
Revolving fund of £50,000, - Total assets £2 Mill. in shares
£3 Mill. in loans.

⁵⁾ Development Finance Comp. of Kenya. Authorised capital £2 Mill
Total assets £4 Mill. in shares £5 Mill. in loans.

⁶⁾ Agricultural Finance Corporation.

It is difficult to get statistics for the rate of defaults they encounter but it is quite clear that the smaller the venture the higher the risk. In the case of I.C.D.C. the function of the agency is not only to finance small scale indigenous enterprises but to suggest such projects and to assist them once they are established. Unlike the D.F.C.K., which invests on a more strictly commercial basis the former finds itself with a much higher rate of default. Experience from Uganda seems to indicate a shift from pure development aims to more commercially sound projects in the field of industry and commerce.⁷⁾

The survey of financial institutions has not yet produced a concrete figure for the present need for credit, but its stand was clear. Another way of approaching an exact expression, though perhaps not as realistic because of uncertainties, is to look at the proposals set forth in the Kenya Development Plan 1964 - 1970, where a growth rate of 6% per year is established as a desired minimum. The question is then: How much investment is needed to attain this goal and how much is going to be available?

Without going into a critical analysis here of the figures in the plan, suffice it to state the following:⁸⁾

Investment for the 6 year period total	£330 Mill
Government will plan to invest	£80,6
Public non-government bodies	£51,6 132.2 Mill
Balance = investment of private sector	£197,8 Mill.

7) The Uganda Credit and Savings Bank has turned into a fully fledged commercial bank.

8) Kenya Development Plan page 38 and 123. (It was recently announced that a revised plan will be published at the end of this year.)

We shall only concern ourselves with the private sector, - thus £197,8 Mill. over six years equals £33 Mill. per year. Looking back through the period of 1954-62 private capital formation has amounted to 62% of the total, which corresponds to 16,5% of GDP. Carried over from nominal figures for 1962 this would mean a private capital formation of £20,7 Mill. Let us assume that the recent rise in domestic savings will facilitate an extra 4 to 5 Mill. in loans, - still 8 to 9 Mill. are needed.

This figure of about £10 Mill. has been verified by the planners and we will take it to mean a challenge to the local money market to expand.

Is there sufficient and immediate scope for expansion in the existing institutions? The subject needs further study, but it seems apparent that in the case of commercial banks their physical facilities for attracting savings are limited by a less attractive interest rate. In addition commercial banks are by tradition confined to the short term loan market with emphasis on collateral, and this is not where the immediate demand is most urgent.

The Savings and Loan Association along with the other Building Societies - save one - are still greatly handicapped by having to channel their deposits to the bodies which assisted them with funds during the crises. True, some of these bodies make local investments, but that is not the most efficient way of utilising these savings.

The government-owned agencies could of course try to get more capital from abroad or from local government issues but this becomes a matter of policy rather than economic efficiency.

It just may be that the capital market has reached a point where there is a call for new ways of financing. Indeed the coming establishment of a central bank is an indication of this. Legislation enabling Trust Funds to come into being - and this is on the way, is another indication of a maturing market. From an investors point of view, a regular supply of securities is as important as acceptable terms and interest rates. It is therefore important to cater for the supply side as well.

B. Cooperative financing in principle:

As the name suggests the principle of cooperative financing is one of forming a group of people, who have at least one thing in common, that of seeking credit. Whether the object for financing should be decisive as to their membership of the group will be taken up later, as will the size of the group and other prerequisites for membership.

The main idea behind this particular form of cooperative is the way in which financing is provided. Unlike many other cooperatives, which will provide short term credit to their members out of their reserves obtained from their primary function as a marketing coop. or the like, this one does not need these reserves, because its way of creating credit is by issuing bonds to be sold on the open market by the members themselves, at whatever price they can get. Since bonds are issued at nominal values and with a nominal rate of interest, the price at which they can be sold determines the real rate of interest for both seller and buyer. This is trivial. What is much more vital are the determinants of the price. Clearly enough the price will adjust to the

pattern of interest rates as prevailing at any given time. The crucial matter, however, is how much confidence the buyers will place in the form of security or asset, which the bonds represent to them, competing with all other forms of available assets.

This is where the collectiveness of cooperatives is important, because it serves as security or backing for the bonds issued. In short, the members are responsible one for all and all for one. This might be a drawback from the members point of view if the group is too small or too "one-sided" in its composition of members. The cooperative finance institution should therefore be thought of in terms of large heterogeneous groups joined together administratively in one cooperative.

The extent to which defaults and settlements of bad debts are encountered is, of course highly dependent on the way in which applications for loans are scrutinized, The rate of collateral required and the diversification of the groups will influence the extent to which the association is affected.

It may be argued that if a cooperative of this kind is going to succeed, especially when starting off in an environment unacquainted with this form of financing, it will have to be so careful in admitting applicants to the society (= granting loans) that these individuals might as well obtain the same amount of credit in the existing institutions, and without having to share in a collective risk. This may be true, though it often is not. But the point is this: Assuming there will always be credit available

to people who are prepared to pay the price asked⁹⁾, our problem is not just to make credit available but to do it on reasonable terms. When the differential in interest rates on the local market is around 4% and 8% maximum there is a case for getting demand and supply of credit in "closer touch". This is the function of the cooperative loan association.

Another couple of points need to be touched on. One of them is the question of the time limit of the loans and hence the maturity of the bonds of the cooperative. It is evident that this will influence the price of this type of credit. The nature of the cooperative would be to provide long term loans of larger sizes, because not only are they cheaper to administer, but their purpose is to serve the function of creating investment capital, which in turn solves the problem of collateral in that the object for financing itself serves as collateral. The maturity terms should then be closely related to the economic life of the object being financed, - more than that would hamper the collateral, and less would not be in the interest of the borrower. It is only reasonable therefore that the association viewing the individual loan application should have the right to offer alternative loan proposals to the potential member in regard to maturity as well as nominal rate of interest.

⁹⁾ Evidence from the field of agriculture suggests that as high as 180% is being charged by the local financier. A more typical rate in the Nairobi area is within the range of 24% on hire-purchase loans, over 10% on housing, 9% on short term bank loans down to 3% on certain government sponsored loans. Savings rates on the other hand reach 6½% with 4% being normal.

Another point is that of repayments. The association determines the sequences of repayments, whether annually, monthly, etc. and whether in annuity form degressive or progressive form. The important thing being that it is uniform. The borrower should naturally be permitted to make payments in the shape of bonds from his own group (bought in the market) or to repay the balance in full at any time.¹⁰⁾

In addition to the actual downpayment and the interest it is necessary to charge a fee on the order of 1% to be divided between the cost of administration and a reserve fund of a limited size for each group to meet the individual defaults, which will invariably occur.

The question of repayments can also be considered from the lenders point of view. He would naturally expect to get the full nominal value of his bonds at the time of expiration, but it is also conceivable that he might get it before, namely by way of a "lottery". This is not purely to attract attention to the scheme by catering to the need for gambling, but as repayments are coming in from members at an increasing rate from the time the first loan is granted and since they can only be used to repay the actual lenders¹¹⁾ (i.e. buying back their bonds) then there are good reasons for buying them back at the same rate loans are repaid. This can be done in two ways, either by buying them back in the open market as long as the price is below par¹²⁾ or by buying back at par the number

¹⁰⁾ A one month notice might be appropriate.

¹¹⁾ It is not the purpose of the association to engage in any other form of business or to take on investments other than stated.

¹²⁾ If above par it would be difficult to "make ends meet".

of bonds, which the association is in a position to purchase at any given time. The individual bonds to be bought are determined by way of a strict random selection from each of the groups of bonds and corresponding to the repayments from that particular group of members. Of the two ways the latter seems to be preferable, since it tends to keep prices at par and is neutral to buyers as well as sellers, it is easy to fit into a budget and it provides for a faster flow of funds.

One last aspect of the principle on which this cooperative works should be mentioned here. This strictly concerns the member himself in the position of having obtained a loan from the association at a high nominal interest, which he of course would be compelled to pay for the duration of the loan. If the general level of interest had moved downwards, it would affect him adversely and he may want to pay back the loan and try to obtain another. Since prices on bonds have gone up he would not choose to buy bonds in the market for repayment and if he had originally sold under par he would also lose by paying back in cash. In such cases the member should be allowed to convert his original loan into another with a lower nominal interest. The price mechanism of bonds of this kind works in the following manner: When the interest level is declining prices will move up and bonds with a high nominal interest will first move above par, thereby changing the advantage of being redeemed by chance to a disadvantage, which is mounting as the declining level of interest encourages a larger number of conversions. Demand (lenders) will consequently seek the lower nominal interest bonds levelling out the price difference between high and low interest bonds. This, in turn, makes it

advantageous for suppliers (borrowers) to repay their high interest loans with bonds which they purchase in the market by simultaneously selling low interest bonds from a new loan, thereby facilitating the conversion and eliminating the ill effect to the borrower, without hurting the lender. In line with conversion is the renewal of loans. This simply means that a member, who has already repaid a major part of his loan should be free to obtain additional loans (or new higher one) provided the collateral justifies such a renewal¹³⁾.

Finally, there is nothing to prevent a member of one association from becoming a member of other groups in the same association and likewise several associations could be formed giving preference to certain categories of loans (such as land purchase, building construction, land improvement, breeding stock, production facilities. In the case of housing, there might be associations taking only 1st mortgages and others taking 2nd., the latter requiring a higher rate of collateral¹⁴⁾.

C. Cooperative financing adapted to local conditions:

The main argument against this concept of cooperative financing and its implementation locally will, no doubt, be its sophistication. But working under the fair assumptions that credit is needed, that local funds exist waiting to be exploited and that new institutions in the money market are urgent in order to facilitate a further creation of local credit for the purpose of development, - then it appears

¹³⁾ In the case of real estate in an urban area this is often the case.

¹⁴⁾ A rate of 200 to 250 per cent is the order on which collateral should be present.

worth while trying to modify the above concept to fit into our present setting.

There are always good reasons for building on-existing institutions rather than establishing new ones, although at a later point it might be advisable to separate functions, such as has been the case with commercial banks and finance companies (owned by the banks). In this case we shall move through the sectors of industry and commerce, agriculture, and housing and see where and how this type of credit creation can be adapted.

In the field of industry and commerce it is especially the locally based smaller scale enterprises, which are in need of capital. The banks are in the picture, but as stated before, mostly with short term working capital and high collateral. The other institution tending to development in this field is the I.C.D.C.

Space does not allow a closer evaluation of its functions other than what has already been said, but it is quite apparent that it is suffering from lack of funds, partly because foreign sources are reluctant to tie up larger amount in something which is not very profitable; nor is it a strictly educational matter, which could attract such funds.

The idea of raising money in the local market is not at all alien to this Institution. In fact tentative plans for a bond issue are on the way. The idea is to turn the issue - if approved by the government - over to local banks and let them serve as a unit trust handling the collection of payments and interest, taking subscriptions and redeeming coupons as well as bonds at maturity.

The question is whether cooperative financing will fit into the existing framework or whether there is a case for a separate body. The immediate reaction would be to turn to the building societies, but the nature of their business is more like the American Loan and Savings Association, or, naturally, like building societies in Britain. They might not be interested in setting up a scheme, which in effect will be competing with their present business.

For the sake of competition and to give the new type of financing a secure backing the proper agent would be the new Housing Development Corporation, which can count on government support. It is essential however that here again strict economic efficiency in granting loans to members be kept in mind, - and separate from any other development schemes this organisation may undertake.

The advantage of having existing institutions taking on this new financing medium is not only their familiarity with the market and vice versa, it is also a matter of keeping down administrative cost, because, as is especially true in financing, economies of scale are very important. Certainly, if existing agencies each took on a third of the estimated issue of approximately £10 Mill. it would be possible for them to handle it within the suggested cost of 15.000/- ($\frac{1}{2}\%$) whereas this would be impossible for a separate institution.

It is taken for granted that the administrative body as well as the members make full use of the commercial banks, stock brokers and others who are there to transact such business. It may even be that the banks would want to engage in advertising to this effect, since they have the needed capacity and are widely spread.

When circulation grows and new issues from one agency reach around £10 Mill. there is scope for the formation of a separate body. It will then have reached a yearly revenue of 1 Mill.

There is perhaps an argument for following the example of the past (and for that matter of other developing countries) of leaving the creation of such finance to the government, thereby securing automatically the guaranty and legacy of the whole matter and not worrying about cost. This is again a political issue: but I would venture to say that this seems not to be the policy of the present Kenya Government.¹⁶⁾

This leads us to another point regarding government's involvement in the bond issues of other agencies. As Nevin points out¹⁷⁾ it is in the governments interest to support such new developments in the finance sector, because they are instrumental in developing other sectors of the economy. It should therefore serve as guarantor for such bonds in the beginning and until the issuing agencies become sufficiently well established not to need such support.

Further it is to be expected that the government-owned central bank will be encouraged to take up such issues along with other "gilt edged" and that the establishment of a national provident fund, which is on the way, will also serve as an investor in these assets.

As has been said about the development of industry, government should also provide in this field new avenues of

¹⁶⁾ The present market situation could then have been much more exploited because there is, in fact, a surplus demand for "gilt edged".

17) Edward Nevin: Central Funds in underdeveloped countries
McMillan and Co. London 1961.

educating people to think in terms of modern techniques and there is no more effective education than that of being exposed to these techniques. One of the ways this can be done is by supporting new private developments, and in this case, the very effort of advertising and popularizing would also serve the purpose of attracting the funds now being hoarded or not saved at all.

The question of new legislation for cooperative loan associations to function is beyond the scope of this paper, but it is essential that such faces as collateral rates and reserve funds be stated. The rights of members as well as bondowners must be established, likewise the rights and responsibilities of the governing body.

The limitations on the amount one or more of these cooperatives can float may be considered since, in abnormal situations, their capacity to create credit per se is unlimited, and they might very well have to be under the same kind of regulation by the central bank as is customary for the commercial banks. This danger is not an immediate one, because the amount of bonds floated will not reach such levels for some time, - and even at that point, properly regulated, the cooperative loan associations through their bonds become a very direct medium for a country's monetary policy.

D. Conclusions (points for discussion)

1. The need for credit in Kenya seems real and not temporary. It is estimated at a magnitude of about £10 Mill. which is expected to come from the private sector.
2. The existing financial institutions are handicapped by their traditional pattern of operation and the lack of local savings in meeting this demand. Though deposits have gone up and have become more interest conscious there is still a span of about 4 - 5% between deposits and loan rates.
3. A cooperative loan association would serve the purpose of getting supply and demand for credit closer together, and would not have to have funds of its own. This is accomplished by forming groups of "loaners" who pool their collateral and receive bonds issued by the association equal to the amount they have been granted in loan.
4. To obtain liquidity the members have to sell these bonds in the open market through the normal channels. A "lottery" system of redemption will tend to keep prices stable and make it attractive to investors as long term paper as the bonds are of longer maturity, roughly speaking equal to the economic life of the collateral involved.
5. The cooperative loan association would be applicable in the fields of Industry and Commerce, Agriculture and Housing as the basis for long term investment borrowing.

One existing body has already thought long these lines, but there are other agencies in these fields who could serve as the administrative body to this form of financing. This is especially important to start with as the cost of administration would be high per unit of loan granted, also they have the experience and apparatus to scrutinize applications for loans.

6. Government should guarantee these bonds to start with and should encourage the central bank, the provident fund and the like to invest in these bonds, thereby giving them "prestige" and making them attractive to the general public, insurance companies and commercial banks.

N. O. J.

PRICING AND MARKETING OF MAIZE IN KENYA.¹

By

H. Karani

Maize poses a unique problem in Kenya, a problem that has been the subject of several commissions of inquiry during the past few years; their experience has shown that it is difficult to devise a simple solution to the complex issues posed by this problem. In this paper I intend to look broadly at the structure of maize production and marketing in Kenya and see what aspects of it, if any, need modification.

I. Production Strategy.

From the domestic view point, maize is the most important crop grown in Kenya for it is the staple food of the African population. Because of its important role in the Kenyan diet, other available foodstuffs do not seem to be attractive substitutes for it as far as the African consumer is concerned, and it is mainly for this reason that the Kenya Government has tended to attach much weight to the way it is grown in the country.

The main characteristics of maize production in Kenya spring primarily from the strategy of self-sufficiency which the Kenya Government has adopted. This policy has been reiterated in the most recent official statement as follows: "Maize is the staple food in Kenya and it is important that the whole of the country's requirements should be produced internally".²

The amount of maize needed for Kenya's internal consumption is currently estimated at between 15 and 16 million bags; of this amount, about 90 to 95 percent is produced on small farms in the African areas, while the remaining 5% is produced commercially by large farmers. The bulk of the maize crop grown on small farms is used for family subsistence, and only a small amount of it, about 9%, is offered for cash to the Maize Marketing Board. The larger amount of maize produced on the large farms is for commercial purposes, and about 90% of it is marketed through the Board; the remaining is used for feeding livestock and labour on the farms. The amount of maize surplus offered to the Board, at present estimated to be about 1.5 million bags has, curiously enough, largely determined the mode of maize production in Kenya for government policy has tended to encourage maize production on large farms on the assumption that they offer most of their crop to the market. Loans have been given to large farmers to grow maize but not to small farmers whose contribution to the market has been reckoned to be small and liable to wide fluctuations from season to season according to weather conditions. This view was clearly stated in the Food Shortage Commission Report as follows:

"Since the Colony cannot safely depend on native grown maize to satisfy its internal requirements, it must look to the European farmer to produce a certain amount of maize. The European farmer cannot afford to produce

¹ It is with pleasure that I gratefully acknowledge the help of my colleagues at the Institute, Dr. B.F. Massell and Mrs. Judith Heyer, whose criticisms have done much to remove some of the shortcomings of this paper.

² Kenya Government: Development Plan 1964-70; Government Printer, Nairobi, 1964, Page 54.

maize for sale unless he obtains a return at least equal to that obtainable from other farming activities".³

This policy is contained in 'The Increase of Crops Ordinance' of 1942 (which applied to non-Africans only), and its main features were repeated in the 1955 Agriculture Ordinance. According to this Ordinance, the following assistance was given to the farmer to grow maize (and any other crops that were considered to be 'essential' like wheat, oats, barley and sunflower, etc.):

- (i) A plant order was issued by the Board of Agriculture which entitled the farmer to a guaranteed fixed price by the government for his crop delivered to his nearest station;
- (ii) he was guaranteed a minimum return sufficient to cover actual expenses in case of crop failure due to factors beyond his control, and this entitled him to short-term finance to cover expenses of planting, cultivation and harvest.

Government policy has, thus, been geared to encouraging the expansion of a highly subsidized maize industry on the large farms, but available evidence given in Table 1 indicates that these farms do not always seem to have contributed most to the market as has been alleged.

Table 1. Maize Produce offered to Market: 1960 - 1964. ('000 bags).

	<u>1959/60</u>	<u>1960/61</u>	<u>1961/62</u>	<u>1962/63</u>	<u>1963/64</u>
Large farms	822	880	850	1117	582
Small farms	788	706	768	1206	502

(Source: Annual Report of the Maize Marketing Board, and Statistical Abstract).

There appears to be little difference between the large and the small farming groups in year-to-year variation in deliveries. With the departure of many large farmers it is the small farmers who are going to uphold the future of the maize industry in Kenya. Government seems to have realised this fact for it is encouraging maize production in the small farm areas by promising to give a guaranteed minimum return of £6 an acre to maize growers who organise themselves into farming groups and cultivate more than 10 acres to cover the cost of hybrid-seed and fertilizer. In fact, if production on small farms could be stepped up by about 15 - 20%, it could replace all the maize produced on the large farms.

³ Food Shortage Commission of Inquiry Report, 1943, page 46.

⁴ East Africa Standard, May 3, 1965.

The gradual introduction of hybrid seed is likely to have a profound effect on the maize picture in Kenya. If government continues to encourage the use of the seed the effect may be to reduce the cost of producing maize over time as a large number of farmers intensify its use and thus obtain substantially greater yields per acre. If this happens, there is every possibility that Kenya might have enough maize to feed her population which is reckoned to be increasing at the alarming rate of 3% per annum. The use of the hybrid seed has already produced impressive results - ranging from 20 to 35 bags per acre, as compared to the performance of the ordinary seed which gives between 4 to 8 bags per acre on small farms. It is believed that the intrinsic potential of the seed has contributed between 30 - 50% to the increase, and the rest is due to improved husbandry. The use of the seed seems to be gaining popularity quite fast; for example, rough estimates show that in 1964 about 30,000 acres were planted with hybrid varieties, and in 1965 acreage increased to about 70,000; future acreage expectations are reckoned to exceed this figure. It is, therefore, possible that Kenya could substantially increase production with a much smaller acreage than in the past and may, in fact, have a sizeable maize surplus in the near future.

If this happens, Kenya can respond to the change in technology in a number of ways: cut back acreage; increase output and plan to enter export markets; and explore possible avenues of utilizing a maize surplus internally.

(i) Perhaps it may pay to cut back acreage under maize in some marginal areas in order to leave production to be done in relatively economic regions. But I would not press this point very far because such a policy presupposes that there are suitable alternative crops which can be grown more economically in such marginal areas than maize, or that there are alternative forms of employment for people in those areas. It makes little sense to advocate for reduction of maize production in any area if the only alternative is widespread unemployment.

(ii) Output may still expand quite considerably even with a reduction of output in marginal areas as a larger number of acres is planted to hybrid. If maize thus grown can be economically exported, then Kenya should take steps that encourage production for export. It is not easy to predict at present whether this is likely to be the case. Much will have to depend not only on what happens to domestic maize costs of production, but also on the trend of world market prices. If a number of maize producing countries throughout the world begin to use hybrid seed, as seems likely to be the case, then maize prices may fall to the point where it is uneconomic to produce for export, even with substantially higher yields than are obtained today, as the Matthews Report has shown.

⁵ Report on the Kenya Maize Industry, by G. V. Matthews, page 11 - 14.

(iii) It may be possible to use surplus maize domestically in a number of ways. First, as indicated above, the domestic demand for maize as a foodstuff can be expected to continue to increase for some time. Second, there may be opportunities for industrial processing as the price falls. Kenya might explore the economics of producing such goods as starch, breakfast cereals, maize germ and alcohol. A third possibility is to expand the use of maize as an animal feed as its price falls.

Closely related to the basic strategy of maize production in Kenya is the question of establishing a suitable price policy that will ensure continued production of maize at a satisfactory level from year to year. Price policy has been determined entirely by past trends of conditions prevailing on large farms because of the rather untenable belief that it is these farms which contribute most to the market; the ease with which information concerning production costs can be obtained from such farms as compared to small farms has also been another factor in favour of large farms. About 88% of the total costs of producing maize on one acre by large farmer represent fixed costs as compared the costs of the small farmer which are almost entirely the labour costs of himself and his family alone. There is need, therefore, for future price policy to be related to conditions prevailing not only on large but also on small farms in order to ensure a reasonable price to the small farmer.

Another question that is closely related to the policy of self-sufficiency as far as production strategy is concerned is that of the issues concerning storage, exports and imports. It is all very well to strive to relate supply to demand as closely as possible, but this may be difficult to achieve at times in practice due to unpredictable weather conditions. Shortfalls in bad years and excesses in good years will be inevitable.

Surpluses in good years have been quite common, and have, at times had to be exported at a heavy loss to the producers. For example, the export cess for the 1958 crop was sh.10/- per bag for large farmers and sh.8/- for small farmers out of a guaranteed price of sh.35/40 per bag. Such export losses occur mainly because the internal guaranteed price to the producer in Kenya is higher than export price parity on the world market, and Table II below shows that the magnitude of such losses can be quite substantial at times.

Table II. Export losses for the years 1952 - 57

	Maize exported (bags of 200 lb.)	Total Deficit on Local Guaranteed Price
		£
1952 crop	253,673	35,421
1953 crop	-	-
1954 crop	1,101,802	527,341
1955 crop	140,168	106,045
1956 crop	297,160	236,497
1957 crop	868,000	1,066,000

(Source: Sessional Paper No. 6 of 1957/58; P. 7).

It is in order to avoid such heavy losses being incurred on exports whenever surpluses occur that government policy has been not to encourage the production of maize for export.

Imports just like exports, involve heavy losses and it has been government policy not to rely on them. Another reason for this policy is that imported maize would cost as much as domestic maize at current subsidized prices. This view appears to be correct as far as maize from overseas is concerned; for example the price of the current U.S.A. yellow maize f.o.r. Mombasa costs about sh.52/70 per bag at Mombasa, compared to sh.47.10 per bag of maize of locally grown maize, or to sh.50.75 per bag of local posho at Mombasa. The same cannot be said of maize imports from Uganda and Tanzania; the main reason given for not relying on them is that supply there is variable. This has been a subject of controversy and people like M.P. Miracle have suggested that imports from these countries could be cheaper than internal maize in Kenya, and he has alleged that "Only a protectionist policy by the Kenya Government stands in the way of imports from Uganda at a lower than currently prevailing Maize control fixed prices when domestic supplies are inadequate"⁶ I am not in a position to justify the validity of this statement because I have not had time to look at the maize question in the E. African context.

Maize shortages have been quite common in Kenya and the situation has, thus, necessitated imports at a great cost. For example, the current maize crisis in Kenya has necessitated the importation of yellow maize from U.S.A. of the order of 1½ million bags to be delivered between August, 1965 and early 1966 at the cost of £4½ million to the government. Thus, when either maize surpluses or shortages occur in Kenya, it is an expensive affair.

An alternative to the above arrangement is storage. In principle, a storage policy can be adopted that will provide complete self-sufficiency for Kenya in the sense that it would store all surplus above domestic demand in good years, and draw from these stocks in bad years, and so cut Kenya's dependence on the world market. Such a policy would, however, necessitate the maintenance of an uneconomically large storage capacity; a more economic approach would be to aim at storage a capacity that would aid in smoothing out fluctuations in supply to some extent, but rely on foreign trade from time to time. The storage capacity of the Maize Marketing Board was about 1.66 million bags, in 1960, and whether this capacity is sufficient for storing Kenya's crop is not easy to tell; it is not even clear to what extent the existing capacity is being used effectively. For example, it is surprising to look back to Kenya's exports of maize to Japan of 23,000 tons in 1964, and then to think that the same produce had to be imported later from the U.S.A. If these exports were due to the lack of adequate storage capacity at home, then it is imperative that a bigger storage capacity be provided.

⁶ An Economic Appraisal of Kenya's Maize Control, by M.P. Miracle, E.A.E.R., 1959, Vol. 6, page 19.

Table III: Consumer Price Structure in Nairobi, 1965.

	<u>shs: per 200 lb. bag.</u>
Producer price, 200 lb. net Grade II maize, without bag, f.o.r. growers' nearest railway station or delivered to railhead stores	32.50
Cost of bag (new)	2.65
Maize Marketing Board handling costs....	4.00
Railage, producer areas to Nairobi, fixed by Maize Board's transport pool regulations	<u>3.45</u>
Subtotal: price to millers, f.o.r. sender's station carriage paid	42.60
Milling allowance.....	<u>3.50</u>
Subtotal: price to traders of 200 lb. bag, ex-mill in 10-ton lots, including cost of bag	46.10
Retail traders' margin allowance, on 200 lb. bag sold whole	2.30
(Subtotal: retail price of 200 lb. bag)	48.40
On amount of 1 - 199 lb., weighed out and packed by trader.....	3.90
Total: retail price of posho	50.00
	(= 25 cents per lb.).

III. Some Effects of Maize Control on the Economy.

The full impact of the effects of the Maize Control system on the economy cannot be assessed with certainty until details of the economics of its various aspects are clearly known. Nevertheless, some inefficiencies, tending to raise costs of the Control to the producer and consumer, seem to be connected with its operations, and on account of this some effects of the control on the whole economy can be observed.

- (i) Economists like Miracle (in his article referred to above) and Y. Kyesimira⁹ who have had a close look at the operations of maize control in Kenya may be right in suggesting that it has led to inefficiency in resource allocation, and even misallocation, especially as far as scarce resources such as capital and manpower are concerned. Subsidies given to large farmers may have had the effect of encouraging the sub-economic production of maize by this group. This suggestion is supported by the fact that even large plantation owners have been tempted to grow maize in areas where maize production would normally be uneconomic, in order to feed their labourers.

⁹ The Production and Marketing of Maize in Kenya, E.D.R.P., 65; Jan. 1965.

In the African areas, the opposite effect is likely to have occurred; county council cesses which have been deducted from each bag of maize delivered to the Maize Board stores up to maximum of sh.3/- may have had the effect of making maize production look relatively uneconomic compared to the other crops on which cesses are not levied. Cess imposition might even have had the effect of increasing black marketing in maize in order to avoid its payment. It is true that maize control is not responsible for cess imposition, but it makes its collection easy. It is encouraging to note that cess rates are now levied at sh.1/- throughout the country, and one hopes that they will be abolished altogether in the future.

- (ii) The operation of maize control has had the effect of raising consumer prices quite substantially. Maize is the staple food of the African population in Kenya; it is also the basic ration for labour, and at times, a portion of wages. The consumer price of maize has, therefore, a marked effect on the cost of labour in all sections of the economy. The high consumer price in Kenya has, probably, increased wages and so affected labour costs adversely. This is a trend which should be avoided because rising labour costs may tend to retard the rate of economic development and also create a serious unemployment problem.
- (iii) Maize control has been responsible for the wide differential between producer and consumer prices and its effect on the incomes of a large section of the Kenya community must be considerable. High consumer prices of maize tend to lower the incomes of people who have to buy maize both in towns and non-maize producing areas of the country. Such a tendency may even be aggravated by the recent 5 cents increase in the consumer price of posho, which has had the effect of increasing the cost of living index¹⁰ by 2 points from 101 to 103. Low prices, on the other hand may tend to lower incomes in rural areas where maize is produced and sold. To what extent this may be the tendency in Kenya is not clear because the gradual use of the hybrid seed will increase efficiency almost sufficiently to overcome the disadvantages of low prices. Furthermore, the effect of the recently announced increase of sh.4/50 in the producer price per bag of maize as from early this year may be to increase incomes in rural areas in the long run.
- (iv) Maize Control operations may also be having a marked influence on the population balance between urban and rural areas. This is because low incomes in rural areas which result from low producer prices, have a tendency to encourage drift of people from these areas to the towns, just as high consumer prices, by inflating the urban cost of living, tend to discourage the drift of people from maize producing areas to the towns but not from non-maize producing areas where an increase in the

¹⁰ Wage Earners Index of Consumer Prices in Nairobi, March 1960; E.A. Stats. Dept.

cost of living hits them just as much as people in towns.

The effect of maize control on the economy is very far-reaching indeed. Miracle points out in the article referred to above: "In short, it would be difficult to devise a more costly price policy; or one more unfavourable to economic development". The alternative policy which he and Kyesinira advocate, is that of a free market where no control operates. I personally think this view is rather extreme for it seems to put a lot of faith in the virtues of a free market. The issue, as it appears to me, has various aspects to it which need to be carefully separated in order to view the complexity of the maize problem in its proper perspective in the Kenya setting.

This is the maize problem in Kenya:

- (1) The domestic demand for maize in Kenya is highly inelastic and changes in the local supply result in little adjustment on the part of consumers. If the situation were left to the free market, local prices would fluctuate sharply.
- (2) Maize is a staple food which forms a large part of the total budget of most Kenya Africans. Changes in the price of maize thus result in comparable changes in real wages and may further have a marked effect on the population balance between urban and rural areas.
- (3) Maize yields per acre are subject to wide annual fluctuations due to unpredictable weather conditions; this means that output varies from year to year. Thus, if the country strives for self-sufficiency with a high probability, it may find itself with surpluses in some years. On the other hand, if it strives to avoid surpluses it will have shortage in some years.
- (4) Maize is a bulky crop with a high weight-ratio to value, and this raises its transport costs quite sharply. Thus, there is a large spread between the world market buying and selling prices. It is, therefore, possible for a country to find local production cheaper than imports but too expensive to export competitively.
- (5) There are likely to be high storage costs, and so it is uneconomic to aim at holding large surpluses from year to year.

These separate issues, when taken together, pose a unique problem. For example, because of the highly inelastic domestic demand for maize and the very important role it plays both in the diet and incomes of the majority of the African population in Kenya, the government naturally feels inclined to provide some price stability for maize. And because of high storage costs, a buffer stock policy may not accomplish this satisfactorily. Furthermore, because of variability of maize supply due to unpredictable weather conditions, and also because of the high transport costs involved with maize shipments, the free market may not work very well. The problem

is complicated even further by the fact that there are large fluctuations in the world market price for maize; hence, any attempt at setting a local price will mean that over time, the local price may be far above or below the world price.

IV. Government Control.

It is quite clear to me that the problem presented above call for some form of control over the various aspects of the maize industry. The form of control this should be seems to lie somewhere between the extremely strict control policy as applied by the Kenya government at present, and the free market approach as advocated by the opponents of the control policy. The proposals for this other approach are outlined below.

- (i) It is quite possible to retain the degree of control that is needed without regulating all stages of marketing as at present. The proper role of the Government should be that of exercising a stabilizing influence on the marketing of maize, but not that of monopoly buyer and seller. This can be achieved by allowing a free internal market for maize, in which there is a floor price for the producer and a ceiling price for the consumer, maintained by the Government (probably through the Maize Marketing Board). Price fluctuations would be allowed between these limits, and commercial transactions would take place without going through the Board. When the producer price falls too low, the Government should be prepared to buy to maintain the producer price; and when the consumer price rises too high, the Government should provide maize for sale to maintain the consumer ceiling price.
- (ii) The Government would thus be keeping the producer price above the export level, and the consumer price below the import level, thus insulating the local market from world conditions. The supported producer price, fixed by the Government, would in effect determine the amount of maize which should be produced locally and hence the degree of dependence on exports and imports. The Government would have considerable room for manoeuvre in fixing the support price at the level they wanted. In years of surplus production, the Government would then buy maize to maintain the price, and either store or export this maize. Export would inevitably involve some losses; storage might or might not involve a loss. In years of shortage, the Government would import maize or release stored maize to keep the consumer price down. Importing would involve losses; releasing stores might not.
- (iii) The Government should have ample storage capacity to store surpluses against seasonal variations, and some capacity to store from year to year. Government would almost certainly not find it economic to cover all surpluses and deficits with storage capacity, and would have to bear import and export losses from time to time.

Funds could be found for this by taxing the people who gain from the new scheme. The scheme should result in a lower price to the consumer, and hence a gain in real incomes, part of which could be taxed to help pay for the scheme. Any loss in local council revenue, through less complete collection of the market cess, could if necessary be compensated as well.

- (iv) The scheme could go a long way towards removing the present incentive for black market operations which take place in Kenya because of the heavy controls. It would also do much to reduce the costs of distributing maize, and hence the spread between consumer and producer prices. It should result in a reasonable price to the producer and a lower price to the consumer for neither would have to pay for the large and expensive marketing organisations in existence at present, and both would hope to benefit from increases in efficiency in the marketing system resulting from the scheme.
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SOME ASPECTS OF CHANGES IN KENYA'S IMPORT
STRUCTURE

By

P. MAITRA

Changes in the structure of imports in a developing country are closely associated with the level and progress of industrialisation. Industrialisation in these economies at the initial stage tends to be restricted by the available level of skill and organisational ability, to the simpler processes which are typical of non-durable consumer goods. At this stage obviously imports of intermediate and capital goods increase, but it is also evident from the empirical studies that the imports of consumer goods increase, even those which are now manufactured domestically, but to the expansion of the size of the market. Income elasticities of demand for consumer goods at the initial stage of industrialisation appear to be high in these economies^{1/}. With the progress of industrialisation new skills and organisational abilities emerge, while the expanding markets allow new industries - in course of time intermediate and capital goods producing industries. These would naturally lead to changes in the composition of imports.

It is also to be noted that with the progress of industrialisation the import content of total supplies (i.e. $M + D_p$) would go on declining, particularly of consumer goods. Growth of industries, or in other words import - substitution, in these economies is expected to result in the declining share of imports of total supplies, particularly of consumer goods, and may cause at the same time a rapid increase in imports of these goods at the initial stage because of the high income elasticity of demand for consumer goods. Domestic industrialisation, or import substitution, is also expected to result at the beginning in the increasing share of imports of producer orientated products (i.e. intermediate and capital goods) of their total supplies, for obvious reasons.

Kenya has started industrialisation, which is expected to have effects on the composition of her imports of manufactures. An attempt has been made in this paper to examine the changes in the composition of Kenya's imports.

The study covers the period from 1954 to 1963. During this period, it appears that manufacturing production (excluding mining and construction) has increased by 72.4%, while total gross domestic product has increased by

^{1/} A. Maizels observes on the basis of estimates of apparent consumption of manufactures per head in a wide variety of countries, for selected years back to 1899, that regression analysis shows that in most countries consumption of manufactures rises at an appreciably faster rate than real income. A. Maizels: Industrial Growth and World Trade. ch. 6.

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64.5%. The share of the manufacturing sector in total G.D.P. has also increased from 23.3% in 1957 to 28.7% in 1963 (based on gross manufacturing production data given in the Censuses of Manufactures, 1957 and 1963). This expansion of the secondary sector has been mainly concentrated in the final stage manufacturing and processing of consumer goods.

The manufacturing industry in Kenya enjoyed an increasing but small share of total capital formation in the form of machinery and transport equipment during this period (e.g. 17.3% in 1954 and 25.8% in 1963).

It is to be noted, however, that there has been a decline of £6.3 million in the growth of capital formation from 1954 to 1963, and that the extent of the decline appears to be much greater when compared with 1957 (e.g. a decline of £16.6 million)^{2/}. There has been an absolute decline in capital formation in the form of machinery and transport equipment to the value of £1.7 million and £0.6 million respectively over the period. The decline has been most remarkable in the case of building and construction which amounts to £14 million from 1957 to 1963 (i.e. a decline of more than 111%). This decline appears to be due to the^{2/} 1958 slump in export prices and political developments.

During the period 1957-63, the total supply (i.e. import + domestic production) of manufactured consumer goods (e.g. processed food, clothing, footwear, etc.) increased by 52.3%, and per capita supply of these products from £5.1 to £6.5 i.e. by 27%. Kenya's domestic production of consumer goods enjoys a major share of the total supplies (Tables 2a and 2b).

The total supply of capital and intermediate products (i.e. import + domestic production) has shown an increase of 15.7% and this small increase is due to the fall in capital formation. The supply of intermediate good (e.g. textile materials, metal products, glass, paper, rubber etc.) shows a much higher rate of increase. (Table 2a.).

With these facts of Kenya's progress in industrialisation in mind, we would examine the changes in the composition of imports of manufactures in relation to the growth of industries, or in other words, import substitution that has taken place in Kenya during this period.

^{2/} Statistical Abstract, 1964.

^{3/} I.B.R.D Report on Kenya, p. 15.

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Import substitution can be considered either as an absolute magnitude meaning entire increase in home output of manufactures and substituting for imports^{4/} or as a relative concept. According to the relative concept, only a "greater proportionate increase in home output than in home consumption of manufactures would qualify as import substitution".^{5/} We have used both these concepts separately. We have used the first one to assess the progress of import substitution in different sectors and the second concept to measure the effects of import substitution on imports and of expansion in demand on imports.

We shall concentrate our study in the following aspects:

- (a) changes in the composition of imports of manufactures (Tables 1, 2a, 2b).
- (b) changes in the domestic industrial production or, in other words, the import substitution that has taken place in different sectors of industrial production. (We have considered import substitution in the absolute sense in this context). (Tables 2a, 3).
- (c) Effects of import substitution on imports and demand expansion on imports (Table 4).
- (d) An attempt to forecast the composition of imports for 1970 on the basis of trends observed during the period from 1957 to 1963 (Table 5).

II

(a) Changes in the Composition of Imports of Manufactures.

In the present section an attempt has been made to examine the changes in the share of imports of manufactures distributed by end use. In an industrializing economy it is normally expected that changes in the import structure will be revealed not only in the greater share, but also in the increasing share of imports of producer oriented products (i.e. intermediate and capital goods).

Table I shows the changing share of imports of manufactures in Kenya. It is evident from the table that no pattern of structural change in imports during the

^{4/} I am indebted to Professor W. Newlyn for valuable suggestions. I am, however, responsible for any error in the paper.

^{5/} Maizels: Industrial Growth and World Trade, p. 150

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period 1954 to 1963 is discernible. The share of imports of consumer orientated products has in fact increased from 14.6% in 1957 to 18.4% in 1963 (while compared with 1954 it appeared to have remained constant), whereas that of producer orientated products has declined from 60.4% in 1954, and 59.0% in 1957 to 58.0% in 1963. It is to be noted, however, that the increasing share of imports of manufactured consumer goods has been mainly due to an increase in the import of processed food, while the fall in the share of imports of producer orientated products has been caused by the fall in imports of metal products, machinery and transport equipment. Imports of these items are a function of the rate of gross capital formation which has declined during this period as stated earlier. It is to be noted in this connection that shares of most of the items of intermediate products included in the producer orientated goods, appear to have increased. That no change has taken place in the structural pattern of imports, relevant and normal for an industrialising economy, may be explained as having been due to abnormal conditions in gross capital formation associated with the end period i.e. 1963. Due to depression in capital formation (in terms of imports in these economies) the share of consumer goods imports of total imports may be said to have gone up. Under these circumstances increasing shares of imports of most of the items of intermediate products may be considered as a feature to indicate some structural change in the composition of imports. This may be supported, although indirectly, by the fact of the changing share of imports of manufactures by end use of total supplies (M + Dp).

Changes in the total supplies (i.e. import + domestic production) show (Table 2a) an increase of 52.3% in the case of consumer goods and 15.8% in producer orientated products. The small increase in the case of the latter may be explained by the fact that total supplies of cement have declined due to a fall in capital formation in building and construction, a fall in imports of private motor vehicles and in capital formation in transport equipment. Domestic production in these two sectors also shows decline by 17.1% in cement and 5.2% in transport equipment. Total supplies of intermediate products show a considerable increase during this period.

But when the shares of imports in total supplies are taken into account, it is found that there has been a decline in the case of consumer goods and an increase in the case of producer orientated products (Table 2b). Among the products included in the group consumer goods, only the share of imports of processed food of total supplies shows a rise, by 4% over 1957^{6/}.

^{6/} We have confined our analysis of total supplies in the period from 1957-63 because of the availability of systematic domestic production data from 1957 through the Censuses of Manufactures.

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Thus although the share of imports of consumer goods in total imports appears to have increased and that of producer goods declined, the share of consumer goods imports in total supply has declined and that of the producer goods imports has increased. This may be regarded as a significant feature of changes in the composition of imports emerging out of the progress of industrialisation. Empirical evidence of other underdeveloped countries at this stage shows that imports of manufactured consumer goods, even of goods identical with those now made at home, may well increase even above the predevelopment level due to the enlargement of the size of the market caused by industrial expansion and agricultural improvement.^{7/}

(b) Changes in Domestic Industrial Production

An analysis of changes in the import structure must be accompanied by a brief review of the changes in the structure of domestic production.

In this section an attempt has been made to assess the changes in the composition of domestic industrial production (Tables 3, 2a) in Kenya. Import substitution is considered here in the absolute sense i.e. the entire increase in home output of manufactures by end use that has taken place in Kenya during this period.

Experience of other developing countries show that the initial stage of industrialisation takes the form of growth of traditional industries like food, beverages and tobacco, clothing, footwear and similar consumer goods. This is true also of Kenya.

There has taken place an increase (Table 2a) of about 58% in home output of manufactures of consumer goods which may be considered as substituting for imports. In this group of products of traditional industries, it is found that clothing and other "made-up" textiles show an increase of 200%, footwear and other consumer goods by about 82% and processed food by 47%. In other words, Kenya appears to have progressed to a "normal" extent in the traditional industries of food, clothing etc., but not in the production of beverages and tobacco. It is to be noted that total demand for tobacco has not shown a significant rise during this period, in contrast to the other three products where increases in total demand vary from 40% to 50%. The share of domestic production in total supply shows considerable increase in the case of footwear and other consumer goods, clothing, beverages and tobacco, but not in processed food. In 1963 the share of domestic production in total demand stood around 80% to 85% in all consumption

^{7/} R. Nurkse: Patterns of Trade and Development, p. 46

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goods except clothing (i.e. 30.6%), despite the fact that domestic production of clothing etc. has increased by 200% during this period. This indicates the sharp rise in demand due to the increase in consumer spending power during this period.

Despite the rise in output of 58%, the share of consumer goods production in total domestic manufacturing production has increased by only 1% during the period 1957 to 1963 (i.e. from 60.3% to 61.4%). But it appears to have declined by about 3% when compared with 1961. This fall is mainly due to the decline of the production of beverages and tobacco. The share of products of producer orientated industries in the total domestic production has declined by 2.4% from 1957 to 1963; but when compared with 1961 the decline in the share seems to be yet smaller. This decline may be explained by the fall in capital formation during this period, as mentioned above.

Thus the share in total domestic production of consumer goods has increased in the case of footwear and other consumer goods, and clothing, but has declined in processed food and beverages, despite the fact that the total demand has increased.

In conclusion it is observed that import substitution in Kenya is at its initial stage which is mainly concentrated in the traditional processing and non-durable consumer goods producing industries. This is also supported by the changes in the composition of imports with producer orientated products enjoying the greater share and the intermediate products an increasing one.

(c) Effects of Import Substitution on Imports and of Expansion in Demand on Imports.

In the previous section we have studied the growth of import substitution in Kenya as an absolute magnitude. In this section we make an attempt to measure the effects of import substitution and of the expansion in demand on imports. It would be of interest to assess the relative effects of those two influences on the structure of imports.

Maizels' approach has been followed in measuring these effects. According to Maizels the effects of import substitution may be measured "as the difference between actual imports at the end of the period (i.e. t_1 or 1963 in the present study) and what they would have been had they formed the same proportion of total consumption as at the beginning of the period" (i.e. t_0 or 1957 in the present study). Following Maizels we may put it as follows: $s_1 (m_1 - m_0)$.

The demand expansion effect on imports may according to Maizels be measured as the difference between imports of manufactures at the beginning of the period and what they would have been at the end (i.e. 1963 in the present study) had they changed in the same proportion as total consumption of manufactures. Maizels puts it as follows: $m_0 (s_1 - s_0)$.

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In both these cases "s" represents total supplies (i.e. $M + dp$) and "m" represents imports. The subscripts 0 and 1 refer to the base and current periods.

$$\text{Thus } dm = s_1 (m_1 - m_0) + m_0 (s_1 - s_0) \frac{8/}{}$$

Industrialisation in these economies is essentially import substitution and naturally import substitution that has taken place in Kenya as well as the changes in demand during this period must have its effects on imports. Measurement of these effects would give us an idea as to the changes in the composition of imports in relation to industrialisation.

Table 4 shows that the import substitution effect is relatively small in relation to the growth of demand in the case of the consumer goods and producer goods industries, though there has been a large absolute increase particularly in the production of manufactured consumer goods, classified as import substitution in the previous section. This seems to have had little effect in replacing imports. Comparing 1963 with 1957 import substitution appears to be 16.6% of the import in 1957 in the case of consumer goods producing industries and 12.6% in producer orientated industry; while expansion of demand has occurred by 52.0% and 28.3% respectively during this period. The proportion of imports of total consumption in the case of processed food and chemicals was higher in 1963 than it was in 1957 signifying that import substitution is lagging far behind the expansion in demand for these products.

The effects of import substitution in the consumer goods may be said to have resulted in the expansion of demand for intermediate goods.

In the case of footwear and other consumer goods, import substitution has been substantial (i.e. more than the imports in 1957); but because of the expansion in demand for these products imports in 1963 were greater than in 1957. But in the case of other products in this group, import substitution has been small in relation to the growth in demand, indicating the necessity of further expansion of production in these industries.

Among producer orientated goods, import substitution has made modest progress in the case of intermediate goods, although the demand for these products has expanded causing further increase in their import. But in the case of capital goods production, import substitution appears to have made negligible progress, and the demand for these products seems to be in one case stagnant and in the other negative.

8/ Maizels: Industrial Growth and World Trade, p. 151-152.

On the basis of the trends observed in the composition of imports from 1954 to 1963^{9/}, an attempt has been made to forecast the future composition of imports of manufactures (by end use). Table 5 shows the estimated pattern of structural change in imports by 1970. When compared with 1963, the share of imports of manufactured consumer goods shows a decline and that of producer orientated goods a rise. The estimated decline of the former is only 1%, whereas the increase of the latter is considerable (i.e. by 11%).

These figures are an estimate of conditions at the end of the First Five Year Plan, assuming present trends to continue.

But it must be pointed out that the structural change in imports may be much more distinctive, with greater decline in the share of consumer goods imports and large increase in imports of producer orientated products because of the emphasis given to capital formation and industrialisation in the Plan.

Conclusion

On the basis of the above discussion, the following significant features of the changing composition of imports in Kenya may be said to have come out.

(a) The increased share of manufactured consumer goods in total imports, indicating a deviation from the normal pattern of structural change in imports in an industrialising economy, may be explained as a result of fall in capital formation during the period. Capital goods imports enjoy the major share of total imports. The share of intermediate goods imports (i.e. 32.6% in 1957 and 24.6% in 1963) has increased, indicating a similarity with the normal pattern of structural change in imports.

There has been also an absolute increase in import of consumer goods which may be regarded as a consequence of increased industrialisation generating increased demand, but with a rapid increase in total supplies, imports of consumer goods are a declining proportion of total supplies.

(b) A declining share of imports of consumer goods and a rising one of imports of producer orientated goods in total supply indicate, although indirectly, a changing feature of composition of imports normal for an industrialising economy. This may be regarded as a basis for predicting a structural change in imports in favour of producer orientated goods in the near future.

^{9/} With the help of the least square regression equation, we have found out the trends.

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(c) Progress in domestic production of manufactured consumer goods and also of producer orientated goods through import substitution appears to have taken place, which as a result, had led to the increased consumer demand. A part of this is being supplied by imports, demonstrating the need for further import substitution.

(d) The import substitution effects on imports appear to be small in the case of both consumer goods and producer orientated goods in relation to the growth of demand for these products.

(e) The composition of domestic manufactured production shows that economies like that of Kenya lay greater stress on import substitution of less expensive but essential consumer goods (the production of which requires simple technology) at the initial stage of industrialisation.

(f) The forecast of the composition of imports for 1970 shows that a pattern of structural change, although a mild one, in imports normal for an industrialising economy is emerging at the end of the First Five Year Plan of Kenya.

This is likely to be much more distinct because of emphasis laid on the industrialisation programme - i.e. the Plan.

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TABLE - Ia
Percent Changes in Imports, 1954 - 1963

<u>Manufactured Products</u>	<u>1954</u>	<u>1957</u>
	<u>1963</u>	<u>1963</u>
1. Processed Food:	34.7	92.6
2. Beverages & Tobacco:	-62.9	-10.9
3. Clothing & Madeup Textiles:	29.4	9.9
4. Foot Wear & Other Consumer Goods:		10.5
<hr/>		
Consumer Goods:	13.7	35.8
<hr/>		
5. Rubber & Rubber Products:	- .3	4.8
6. Paper and Paper "	122.5	45.6
7. Glass and Glass "	62.4	25.9
8. Textile Materials:	.9	27.1
9. Chemicals:	109.9	11.4
10. Cement:	93.0	-27.9
11. Metal Products:	-2.5	-5.2
12. Machinery:	41.9	-2.4
13. Transport Equipment:	-24.9	-5.9
<hr/>		
Producer Orientated Products:	-21.6	15.7
<hr/>		
All Manufactures:	15.7	22.1
All Imports:	16.0	7.3
<hr/>		

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TABLE - "a
Changes in Total Import + Domestic Production
 (i.e. Total Supplies)^{1/}

	1957	1963	<u>1957</u> <u>1963</u>	Changes in Domestic Production & Import Substitutions (in the absolute sense) in %
				<u>1957</u> <u>1963</u>
1. Processed Food:	20,705	31,976	54.1%	47.2
2. Beverages and Tobacco:	8,922	9,325	4.5%	4.3
3. Clothings & Other Madeup Textiles:	2,510	3,546	41.2%	200.2
4. Foot Wear and Other Consumer goods:	5,876	13,120	55.2%	81.7
All Consumer Oriented Products:	38,013	57,907	52.3%	57.7
5. Textile Materials:	5,282	7,882	49.2%	87.2
6. Pulp, Paper, etc.:	2,452	4,218	72.0%	153.5
7. Rubber:	1,474	1,729	17.3%	57.8
8. Basic Chemicals:	5,335	7,018	31.5%	25.7
9. Cement etc.:	3,057	2,505	-17.7%	-17.1
10. Metal Products:	12,229	14,651	19.8%	125.1
11. Machinery:	10,053	10,043	-.1%	31.8
12. Transport Equipment:	12,215	11,521	-5.7%	5.2
13. Glass and Glass:	379	143	.96%	22.0
All Producer Oriented Products:	52,476	60,710	15.8%	55.5

^{1/} By Total Supplies we include here Import + Production (locally Total Sales should have been included).

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TABLE - 2b

Import as % of Total Import + Output i.e. Changes in the Imp. Context

1957 - 1963

	1957	1961	1963
1. Processed Food:	16.3	18.7	20.0
2. Beverages + Tobacco:	16.4	14.6	14.0
3. Clothings & Other Madeup Textiles:	85.6	76.4	69.4
4. Foot Wear & Other Consumer Goods:	41.3	20.3	20.2
Consumer Oriented Goods:	25.3	21.7	22.5
5. Textile Materials Glass & Glass Products:	97.3	90.2	82.9
6. Pulp, Paper & Paper "	75.5	67.4	63.9
7. Rubber & Rubber Products:	76.6	68.3	68.5
8. Basic Chemicals:	55.7	60.4	55.7
9. Cement:	8.3	4.3	7.7
10. Metal Products:	88.8	66.8	63.4
11. Mechinery:	93.2	87.5	91.1
12. Transport Equipment:	64.8	73.5	64.6
All Producer Oriented Products:	73.1	69.5	74.5

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TABLE - 3
Gross Production of Manufactures 1957 to 1963
 Sectoral Distributions, 1957, 1961 & 1963

	1957	1961	1963	Change in the Domestic Production
				$\frac{1957}{1963}$
1. Processed Food:	35.9	35.6	34.1	47.2
2. Beverages + Tobacco:	15.4	11.8	10.7	4.3
3. Clothings & Other Madeup Textiles:	.7	.9	1.4	20.2
4. Foot Wear & Other Consumer Goods:	8.3	15.7	15.2	81.7
	60.3	64.0	61.4	57.7
5. Glass & Glass Prod.:	.7	.6	.6	22.0
6. Textiles Materials:	.2	1.1	1.7	87.2
7. Paper & Paper Prod.:	1.1	1.9	2.3	153.5
8. Rubber & Rubber "	.7	.6	.7	57.8
9. Basic Chemicals:	5.1	3.7	4.1	25.7
10. Cement:	5.7	5.1	3.0	-17.1
11. Metal Products:	4.8	5.6	7.0	125.1
12. Machinery	1.2	3.8	1.2	31.8
13. Transport Equipment:	8.9	5.3	5.4	5.2
	28.4	27.7	26.0	55.5
14. Miscellaneous Products:	11.3	93.7	12.6	

If we exclude the share of Cement + Transport Equipment, we find that the share of producer oriented products has increased from 13.8 to 17.6 of total domestic production.

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TABLE - 4

Effects of Import Substitutions and of Expansion in Demand
On Imports. (in £,000)

	M 1957 (1)	Effect of l.s. (2)		Effect of Expansion in demand (3)	Total (2+3) (4)	M 1963 (5)
1. Processed Food:	3.3	1.2	+	1.9	3.1	6.4
2. Beverages & Tobacco:	1.4	-0.2	+	0.1	-.1	1.3
3. Clothings & Other Madeup Textiles:	2.1	-0.5	+	0.8	+.30	2.4
4. Foot Wear & Other Consumer Goods:	2.6	-2.9	+	3.2	+.3	2.9
	9.4	-2.4	+	6.0	+3.6	13.0
5. Rubber:	1.1	-0.2	+	0.2	.0	1.1
6. Paper:	1.8	-0.4	+	1.3	+0.9	2.7
7. Glass:	0.3	-0.4	+	0.3	-1	0.2
8. Textiles:	5.1	-1.1	+	2.5	+1.4	6.5
9. Cement:	0.2	-0.6	+	0.5	-0.1	01.
10. Chemicals:	2.8	+0.2	+	0.9	+1.1	3.9
11. Metal:	9.8	-2.4	+	1.9	-.5	9.3
12. Machinery:	9.3	-0.2	+	0	-.2	9.1
13. Transport Equipment:	7.9	-0.1	+	.4	-.5	7.4
	38.8	-4.9	+	11.0	+6.1	44.9

TABLE - 5

Composition of Imports of Manufactures in Kenya

(A forecast for 1970)

Manufacturing Products	Share of Total Imports in 1970 (in Percentage)
1. Processed Food:	7.9
2. Beverages and Tobacco:	-1.0
3. Clothings and Madeup Textiles:	5.5
4. Foot Wear and Other Consumer Goods:	6.1
All Consumer Goods:	17.4
5. Rubber and Rubber Products:	1.2
6. Paper and Paper Products:	2.8
7. Textile Materials:	8.8
8. Glass and Glass Products:	1.5
9. Chemicals:	7.1
10. Cement:	.4
11. Metal Products:	9.5
12. Machinery:	12.1
13. Transport Equipment:	9.3
Producer Oriented Products:	52.7

The remaining is distributed among miscellaneous manufactures and other imports.

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TABLE - 6

Per Capita Supplies of Manufactures (by end use)
from 1957 to 1963

	<u>1957</u>	<u>1963</u>
1. Processed Food:	2.7	3.7
2. Beverages & Tobacco:	1.2	1.0
3. Clothings & Other Madeup Textiles:	.3	.4
4. Foot Wear & Other Consumer Goods:	.7	1.4
All Consumer Goods:	5.1	6.5
5. Rubber and Rubber Products:	.2	.2
6. Paper and Paper Products:	.3	.4
7. Glass and Glass Products:		
8. Textile Materials:	.7	.8
9. Chemicals:	.7	.8
10. Cement:	.4	.2
11. Metal Products:	1.6	1.6
12. Machinery:	1.3	1.1
13. Transport Equipment:	1.6	1.3
All Producer Oriented Products:	7.0	6.3
All Manufactures:		

Source of all Tables: (a) Statistical Abstract, 1964, Govt of Kenya.
(b) Census of Manufactures, Kenya, 1957, (1961) and 1963.

DISCUSSION PAPER
FOR
EAST AFRICAN INSTITUTE OF SOCIAL RESEARCH
MAKERERE UNIVERSITY COLLEGE

A BASELINE SURVEY OF FACTORS AFFECTING AGRICULTURAL DEVELOPMENT
IN THREE AREAS OF KENYA

H.L. Naylor
Joseph Ascroft
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BACKGROUND OF THE SURVEY

Development economists and planners are in theoretical agreement that very little development can take place in the rural sector of any nation's economy so long as the majority of its agricultural production is based on traditional patterns of subsistence farming. In predominantly agrarian countries, a surplus of farm products above those needed to feed the farmer and his family must be supplied to the market if a higher standard of living for rural families, the wellbeing of urban centers, and export earnings for the national economy are to be achieved. Yet, it is estimated that 70 percent of the farmers in developing countries are still producing at a subsistence level despite efforts of their governments to introduce new technologies and farming practices.

An understanding of the socio-economic factors operating in the transition from subsistence to commercial farming in developing countries is one of the most intriguing areas of inquiry in the world today and an imperative prerequisite in rural development planning. But not all governments have come to grips with the need for scientific research in the process of analyzing and assessing factors of agricultural development in connection with national development plans.

The Government of Kenya, however, is not only making a major effort to assist its sub-commercial farmers to modernize their production methods and to provide a climate for rural development in the larger sense of the term, but is subsidizing rural research to better understand the dynamics of rural development and the interplay of the factors in the process.

Urged technical change by trained extension agents from all the rural service ministries - educators, agriculturalists, animal husbandrymen, land tenure specialists, cooperative organizers, preventative and curative medicine practitioners, public works engineers, community development workers, and administrators in the rural milieu - along with concomitant facilities as part of the Six Year Development Plan, provides a socio-economic matrix for the study of change and development, the results of which will be of value to the administrators of the Plan, government economists charged with the responsibility for the allocation of scarce development resources, and the rural service ministries.

The impetus for the present research project to study the factors of rural development in three rural areas of Kenya came from the Ministry of Labour and Social Services with the Minister's desire scientifically to study and to evaluate the effectiveness on a pilot basis of the Ministry's community development program. Since community development, however, is only one variable along with a host of other variables in rural development, the decision was made to establish a baseline of rural living with as many parameters as possible, covering physical, economic, organizational socio-psycho, and knowledge factors of rural life, and to make a subsequent measurement from this baseline in an attempt to pinpoint not only the role of community development in rural development, but to assess the role of other factors bearing on rural development as well, in order to evaluate scientifically total rural development change in these areas over a time period.

To this end, other rural service ministries were invited to participate in formulating the questionnaire for the survey. The Ministry of Agriculture and Animal Husbandry submitted the basic questions which made up the body of the economic section of the questionnaire - those concerning cash and food crops, cropping methods, irrigation, soil productivity, animal husbandry, farm tools, and credit services; the Ministry of Lands and Settlement submitted those questions relating to land tenure; conferences were held with officials from the Ministries of Education and Health and Housing on questions concerning education and literacy, health and sickness, and environmental sanitation.

Other categories of questions such as the penetration and effectiveness of government services, wealth and investment, channels of communication, labour mobility, achievement motivation, security orientation, and attitudes toward traditional customs were designed to achieve a definition of the socio-cultural-psychological systems currently in operation.

The basic assumptions to be tested in the inquiry are derived from a growing body of comparative empirical data held in common by international students of development:

Historical Assumption

That the traditional agricultural village (or community farming unit) which has served as a relatively self-contained socio-economic unit for human survival from prehistoric times to the present time in non-industrial societies is rapidly losing utility as a functioning model to meet the rising needs and expectations of rural people in those newly-developing nations striving to achieve increased living standards.

Economic Assumption

That traditional farming methods with low agricultural production, heretofore adequate for human survival, cannot support the demands placed upon the rural sector of the economy by the national establishment if national development is to take place.

Progression Assumption

That most rural economies in the newly-developing countries are in various stages of transition from a subsistence type of agricultural production to a cash farming type of agricultural production.

Social Assumptions

That this transition from subsistence farming to cash farming has profound effects on traditional social structures, beliefs, aspirations and attitudes (since many traditional values and attitudes were derived from and are tightly tied to subsistence farming).

That in this socio-economic transition two opposing forces are apparent:-

- (a) An effort to preserve traditional social and economic customs and patterns.
- (b) An effort to modify traditional patterns to meet new competitive life forces.

Rate of Change Assumption

That the rate of change within rural societies is highly sensitive to political, educational, ecological, religious, historical and communication factors.

Psychological Assumption

That any significant change in the life-ways of a person tends to introduce some degree of instability or disharmony in the way his beliefs and attitudes are organised: tensions mount when old behaviour is found to be inadequate or when new behaviour must be acquired. Reaction to tension causes stresses within a society which may lead to a more rapid assimilation of change or which may lead to non-beneficial social behaviour such as aggression or psychological withdrawal.

The three areas selected for the initial baseline survey were chosen purposefully on the basis of their potential for agricultural development and for the comparative value of studying three distinct tribal groups in the process of transition and change.

Among other limitations of the study are: the size of the sample as compared with the total African farming population of Kenya, and the lack of depth inherent in the survey research method as compared with that of individual tribal ethnographic research. With regard to the first limitation, it is hoped that the sample will be extended to cover other areas of potential agricultural development in Kenya. Concerning the second, while ethnographic research has historically stressed differences between cultures and sub-cultures, in nation building perhaps similarities of subgroups now need to be delineated and encouragement given to the development of national consciousness on the basis of common interests.

Only the gross statistical analysis of the study were presented in the initial report - percentages, some measures of central tendency, and major cross correlations. One of the technical directors of the survey, however, is now on an assistantship in the Department of Communications, Michigan State University, U.S.A., refining the data and performing the necessary advanced statistical analysis. When the resurvey is made, after perhaps three or more years, the full complement of analyzed data from the baseline will be available. While the baseline report itself will be diagnostic for development planning in the areas surveyed, the inquiry will not achieve the status of a scientific formulation until the resurvey is made. The measurement from the baseline will provide definitive insight into the process of socio-economic change over time in this one part of the world. The finished product will be deposited with the International Data Bank where it will be available to the international academic community.

TECHNICAL NOTES

The findings of the report were based on a personal interview survey conducted among a representative cross-section of 624 African heads-of-household having effective control over family land holdings in the three areas, Samia Location in Busia County, Kabondo Location in South Nyanza County and Location 7, Bomet in Kipsigis County. All interviews were conducted within the dates 7th June, 1965, and 17th August, 1965. The following is an explanation of the technical considerations involved in the execution of the survey.

UNIVERSE OF STUDY

Budgetary considerations precluded a coincidental geographic coverage of Kenya. Thus the study was restricted to the three areas mentioned above, these having been selected by the Ministry of Labour and Social Services in consultation with its technical adviser. The surveys in each of the areas were conducted simultaneously. Their results in the report were shown independently of each other.

For the purpose of the survey the universe of study was defined as follows:-

Samia Location to include all heads-of-household living and farming within the cartographic boundaries of Samia Location as per map series SK11(Y731), sheet 101/1, edition 3-SK, published by the Survey of Kenya.

Kabondo Location to include all heads-of-household living and

farming within the cartographic boundaries of Location 7, as per map series SK11, sheet 131/iv, edition 3 published by the Survey of Kenya.

The maps used were based on aerial photographic surveys of the selected areas and were correct as of 1958, 1961 and 1962 respectively, these being the years in which the latest photographing took place.

SAMPLE SIZE

The sample size was based on a 10% random sample of the cartographic area population of each location as estimated by taking a 10% count of all the homesteads discernible through aerial photography on the maps, the number of interviews assigned to each area being in proportion to its homestead population. In all, 602 interviews were assigned with an additional 43 interviews being assigned to account for normal sampling attrition.

SAMPLING TECHNIQUES

Area sampling techniques, based on probability systems of sample selection and conducted in stages, were employed with slight modifications suitable to their application in Kenya. Final respondents were selected in stages, each of which is explained below.

Location. The locations to be studied were not randomly selected, these having been purposely chosen as initial areas of investigation by the Ministry. The limits of each area were defined as the cartographic boundaries surrounding them. Interviews were assigned to each location proportionately, a careful count of all the homesteads appearing on the maps having first been completed. Thus, Samia was allocated 171 interviews, Kabondo 223 and Location 7 Bomet 249 interviews.

Sample Points. Using 1:50,000 scale maps, grid squares were constructed on the maps approximately 100m intervals. The grid squares were each numbered consecutively in serpentine fashion, whereupon every nth square was selected as a sampling point, the fixed skipping interval between selected grid squares being broken only when two grid squares happened to fall side by side. In such cases, the square was moved one space either to the left or to the right without, however, disturbing the overall skipping cadence.

The number of homesteads falling within each of the selected grid squares were then carefully counted and clusters of interviews assigned to each grid square on a probability-proportionate-to-population size basis within each grid square. In the actual field situation field supervisors made minor revisions to the cluster sizes upon completion of an on-the-spot check necessitated by the fact that the maps were somewhat out of date. In most cases, however, no changes were necessary.

Respondents. Homes to be interviewed within each selected grid square were selected on the basis of skipping every other homestead, i.e. no interviews were conducted in homesteads which were contiguous with one another. (It must be borne in mind that there are few discernible roads, let alone any orderly pattern of homestead arrangements to be found in the Kenyan rural scene). The homes to be interviewed having been thus located, the schedule was then administered to the putative head-of-household (or the person in most effective control in the absence of the head) of the extended family. In the majority of cases, the actual extended family head was interviewed.

Control Areas. Inasmuch as this survey was basically a baseline survey (albeit designed to yield information of immediate value) and since, within the areas surveyed, a certain amount of external intensive effort will be provided by Government and other development aid agencies, it was necessary to make provision for control groups for each area. Thirty

interviews were assigned to each area as controls. The sampling point was again the grid square but here the directors departed from strict random systems by purposively selecting the grid squares for the controls in such a way as to cause the location to be surveyed to become encircled, as far as was practicable, by control grid squares. (Complete encirclement was not possible in Samia as this location shared a common border with Uganda and also in Location 7, Bomet, which adjoined a farm settlement scheme). Furthermore, each control grid square had to be sufficiently distant from the study area to minimize the possibility of emulation of development measures being undertaken in the study areas. A second departure from random sampling involved the selection of only two respondents per grid square, however populous one selected grid square was than the other.

Sampling Attrition. To account for normal sampling losses due to "not-at-homes", "refused to answer", rejected schedules, etc., a high enough sampling rate was taken to obtain approximately the desired number of interviews after allowing for these losses. Thus, the universe was oversampled by 43 interviews proportionately distributed among the three areas and, in actual fact, 24 interviews more than the contracted number were achieved. The sample performance is as follows:-

		Samia	Kabondo	Location 7
Number originally scheduled	...	171	223	249
Number successfully completed	...	165	216	243
Number rejected - unsatisfactory	...	-	4	1
Number of refusals	...	6	2	-
Number overflow from over-allocated grid squares	...	-	1	5

The Questionnaire. The schedule which served as the principal instrument of data collection for this study, is an original questionnaire structured and designed by the two project directors. A working rationale was initially prepared (see Background to the Study). Governmental Ministries with interest in gathering material on specific problems were then invited to submit questions for possible inclusion in the schedule. Several Ministries responded. In addition, the project directors gathered whatever pertinent material was available from external sources, drawing principally on such sources as similar surveys conducted in other parts of the world such as the Phillipines and Pakistan. A wealth of ideas was collected in this manner, all of which had to be examined and classified in terms of the rationale. At this stage, the project directors engaged in lengthy conferences with those members of the enumeration staff of Marco Surveys, Ltd., who were indigenous to the Districts within which were located the study areas. By this means, the directors were able to equip themselves with some needed insights into the customs and habits of the peoples of the study areas. Discussions with the Marco enumeration team (all Africans) were maintained throughout the questionnaire-structuring phase when, in consultation with them, each question was carefully evaluated for meaningfulness and facility of application before its inclusion in the schedule. A provisional questionnaire was drawn up which was given a validation pretest near, but not in each of the three areas by the actual enumerators who were to participate in the survey. Modifications suggested by this pretest were incorporated into the schedule to produce the final field-worthy instrument.

Training Enumerators. The members of the actual enumeration teams were mainly County Council Community Development Assistants. For the purpose of training them to collect the data called for in the schedules in accordance with prescribed systems of scientific social research, they were gathered together for four days at the Gusii County Adult Training Centre in Kisii, Kenya. The role-playing method of instruction was employed wherein one Community Development Assistant enacted the role of the enumerator and the other the role of the informant. Instructions were conducted by the two project directors aided by trained field supervisors provided by Marco Surveys, Ltd. During this training period careful attention was given

The younger family heads had more household goods than the older family heads; more tables, lamps, cutlery, wrist watches, and radios.

Young farmers took more interest in self-help groups, and felt self-help group meetings were of greater value, than did the older farmers.

More young farmers said they would advise a young man to enter farming as a profession than did older farmers. More younger men felt that farming can be a lucrative business with built-in security safeguards than did the older group of farmers.

Young men in the sample were more imbued with the idea that the more schooling a person has the better off he will be than were the older men in the sample.

A higher percentage of young men felt optimistic about overcoming all obstacles through one's own efforts than the percentage of older men who felt this way. But more young farmers felt a lowly person needed help from high places, if his dreams were to come true, than did older farmers.

More young farmers than old farmers stated their hopes for the future were to own more land and cattle, to have shops or dunks, and to have automobiles.

More young men said that they feared poverty and death than did the older men in the sample.

More older farmers than young farmers owned more unconsolidated pieces of land; wanted to let their pieces remain divided; discussed at greater length the pros and cons of land consolidation; owned more pieces of land over 25 acres in size; sold food crops commercially; believed the lack of weeding was the cause of declining crop production; believed they could borrow farm production funds from Department of Agricultural agents; had a concept of wealth which included status (high position in the location); and felt that the rural cooperatives were the most helpful of all government assistance activities.

Educational Differences

The responses of farmers who had some formal education and those who had none at all in the total sample were cross-tabulated in some questionnaire content areas in an attempt to find out if education has a bearing on rural development in the areas surveyed. Those items to be reviewed here are those with significant statistical differences between the responses of those with some formal education and those who had no formal schooling.

Those farmers with some schooling have been more involved in the discussions of the ramifications of land consolidation than those who have no schooling; they felt a greater need for irrigation and had more plans to improve their water supplies; they knew more about soil erosion as a source of soil destruction than did those farmers with no formal education.

Schooled farmers in the sample had more plans to increase their cultivated acreages in the coming year; had more farm tools (spares, shovels, fork hoes, and wheelbarrows); hired more paid labour; fenced more land; had more household and personal equipment (tables, chairs, cupboards, wristwatches, bicycles, clocks and radios); and had more money in banks and post office savings accounts than the unschooled farmers interviewed.

In terms of attitudes, more farmers in the sample with some education believed an acre of land previously produced less than now-a-days; would apply to the Agricultural Loan Board for farm development loans; and believed that working capital, cash crops, farm machinery, and graded cattle are increments of rural wealth, than did those farmers with no formal education.

Those family heads with more education were more visited by the community development assistant; went more often to see the agricultural officer; said more often he was their greatest help, than did the less educated farmers interviewed.

The farmers who had some schooling were greater in their praise for cooperatives, farmers' training courses, and farmers' field day as being helpful to them, than were those farmers with no education.

Participation cooperative meetings, agricultural demonstrations, farmers' training courses, farmers field days and animal husbandry demonstrations was greater for those with some education, than for those with none. More of the children of the educated had been born in maternity homes than those of the uneducated.

The farmers who had some education believed more strongly that their daughters should go to college; that a person must make his own way and cannot depend upon others; and that there is no room for tribal customs in a modernizing society, than did those farmers with no education.

With respect to what they hoped for in the future, more educated respondents said they wanted to be good (modern) farmers, than did the respondents with no education.

More farmer-respondents in the survey with no education mentioned the lack of rainfall as a cause of land deterioration; had not heard of artificial insemination, thought that they could borrow small amounts of money from friends and relatives; would buy more local cattle if they had the capital; thought the veterinary officer had been of greater use to them, and feared a future war, than did those respondents with some education.

The more educated farmers sold more of their food crops in the market than did the less educated farmers.

More of the educated men interviewed preferred monogamy over polygamy than did those with no education.

Income Comparisons

The ownership patterns, farm practices, relationship to government extension services, values, and attitudes of all household heads in the sample who were making \$2.00 annual cash income and less, were compared with those of household heads making \$1.001 and over, annual cash income.

Those farmers in the higher income bracket owned more land, and more land under cultivation, had more farm equipment, and had more items of personal and household equipment, than those in the lower income bracket. Some had also hired tractors for farm operation last year, while none of the lower income farmers could afford to do so.

The better off farmers rotated their crops more often, used more farmyard manure as fertilizers, planted their crops in rows more often, and sold more crops commercially, than did the less well off farmers. They also hired more labour and used self-help group labour more extensively, than did the lower income farmers.

The higher income farmers felt a greater need for irrigation than did the lower income farmers, and had more plans for building and improving water storage dams than had the latter.

Concerning soil technology, more better off farmers ascribed to the

theory that an acre of land formerly produced less, than did the poorer farmers; and more of the higher income farmers averred that land becomes poor by not allowing it to lie fallow; by failure to rotate crops; and by failure to enclose lands and control grazing, than did those with less cash income. The higher income farmers were more prone to believe that their land could produce more than it had last year, and they indicated that they had more plans to increase their acreage than did the lower income farmers.

More family heads with large cash incomes were more firm in their belief that they could borrow money from their county councils, than were family heads with less cash income. Those with higher cash incomes tended more toward buying graded cattle and improved seed varieties, increasing their cultivated acreage and improving their water supplies (in the event they could get development loans), than did those with lower cash incomes. More higher income farmers suggested that the government should hasten land registration as a possible way of developing a credit system, than did lower income farmers.

Wealth, said more high income farmers than low income farmers, consisted of much land, many cattle, working capital, a business concern, farm machinery, and a high position in the location. As is to be expected, farmers in the higher cash income bracket had more bank accounts and post office savings accounts than did their lower cash income neighbours.

More agricultural officers, chiefs and sub-chiefs, veterinary officers, and community development assistants visited the farmsteads of the more affluent farmers, than they did the farmsteads of the less affluent farmers. The higher income farmers, in turn, made more visits to the local offices of the agricultural officer, the veterinary officer, and the community development assistant, than did the lower income farmers.

Of the government extension officers, the higher income farmers, more often than the lower income farmers, listed the agricultural and veterinary officers as being the most helpful.

More higher cash income farmers than lower cash income farmers had attended agricultural demonstrations, cooperative meetings, farmers' training courses, farmers field days, and animal husbandry demonstrations.

More high income farmers than the less well-off farmers in the sample said they would advise a young man to go into farming; would send their sons to college; could afford to send their sons to college; could afford to send their daughters to college; and taught their children that difficulties can be overcome through hard work.

More prosperous farmers, also, were somewhat more conservative than the less prosperous farmers in one respect; more of them would retain traditional customs than the latter.

Concerning their hopes for the future, more affluent farmers, than the less affluent, hoped for permanent houses, more land, water supplies, farm machinery, shops and dukas, and automobiles.

The farmers in the higher income brackets were more concerned in their fears for the future that they would become poor, than the farmers who are not now enjoying a higher cash income.

In Summary

All socio-economic indicators pointed to the conclusion that the Kenyan rural people studied in Samia Location, Location 7, Bomet, and Kabondo Location were well along in the development transition from a subsistence agricultural based economy to at least a partial cash market economy.

The climate of opinion for land consolidation and land registration in the locations studied was favourable. The land owners saw in this government program security of ownership, the elimination of land disputes, and the possibility of using land ownership titles as collateral for development loans.

The farmers were generally satisfied with the marketing arrangement provided by the government through cooperatives for the sale of such crops as cotton and coffee. They appeared to have no objections to following the suggested agricultural practices for the production of these crops.

It is worth noting that a small, but substantial amount of food crops were being marketed by the majority of farm families. Evidence from the survey substantiating the fact that the majority of the farmers were conversant with the basic elements of soil and plant technology in the production of food crops, was even more noteworthy.

There would seem to be great possibilities in the field of animal husbandry for genetic improvement of livestock through artificial insemination in all the locations surveyed based upon the expressed desire of the farmers and stockmen for an intensification of this program.

A great need expressed by the farmers in all locations was that for the improvement of water sources and irrigation.

The adoption and use of modern farm tools and equipment has not kept pace with other factors of agricultural production in these areas.

It is often said by development practitioners that the most important single factor for rapid rural progress is a well-planned and supervised credit system. It would seem appropriate that thought be given by the government authorities to an extension of credit facilities in the rural areas studied - perhaps along lines suggested by the rural people themselves.

The preliminary cross-tabulation of questionnaire responses comparing the answers of those with some formal education with those who have no formal education, furnished quite conclusive evidence that education, even just a little education, is a primary factor in rural development.

The preliminary cross-tabulation, which compared the highest income farmers with the lowest income farmers in the sample, indicated that even the first steps toward commercial crop marketing brings with it a whole series of improvements in all aspects of rural living.

The preliminary cross-tabulation comparing the youngest farmers with the oldest farmers should reinforce the nation's faith in the enthusiasm, optimism, and desire for achievement felt by its young farmers.

The government can well be satisfied with the progress being made by its rural extension services in the locations studied: its agriculture and veterinary officers, school teachers, medical personnel, its administrators, chiefs, sub-chiefs, and its community development workers. It is the rural people who spoke in the survey and it is they who voluntarily documented the excellence of the government's efforts in their behalf.

The tradition of self-help and community development runs deep in Kenyan society. It should be of interest to development planners that the traditional systems of labour exchange are being channelled, in part, into other activities of benefit to the communities in the form of community roads and bridges, schools, dispensaries, dams, community farms plots, nursery centres, recreation halls, and savings societies.

In Kenya, traditional ways of thinking, acting, and behaving, as ascribed to by its various tribal groups, form the cultural matrix in the rural design for living. Many of the customs and values are functional and have utility, even in the face of rapid modernization, to provide continuity and meaning to rural life. The rural people questioned in the survey indicated those customs and traditions they wish to retain and those which they felt could be modified in their development plans. Ranking highest for retentions were customs and rites concerning puberty and marriage.

THE SIGNIFICANCE OF SEPARATE MONETARY
SYSTEMS IN EAST AFRICA

My main aim in this paper is to examine the implications of the fact that within six months the common monetary system of East Africa will have become three separate national monetary systems, each with its own central Bank. Although the emphasis is on the separation it is necessary first to leave aside this element in order to clarify the nature of the transition from Currency Board to Central Bank. Moreover, at the risk of tedium, I want to start by considering certain major characteristics of the present system.

Section One: The Existing System

We all know that East Africa, almost unique in the world, operates a monetary system which was general throughout the British colonial territories, by which the monetary authority is restricted to the issue of domestic currency against Sterling and committed to its redemption in Sterling. In other words an extreme form of Sterling exchange standard system by which the external value of the domestic currency is rigidly fixed to that of Sterling (for better or for worse) and the monetary authority has no opportunity for independent monetary policy. Many of us know that East Africa is also unique in having modified its Currency Board's competence to an extent which is surprising in view of its basic institutional rigidity.

The constraints imposed upon monetary policy by this system have received a great deal of attention over last ten years, and in particular stress has been put upon the inability to indulge in a continuous process of credit creation such as might be undertaken in an independent monetary system having a Central Bank. Concentration on the passivity of the Currency Board, enlivened by successive bites at the Board's funds by means of increases in the Fiduciary issue, have rather obscured the picture of the operation of the monetary system as a whole. Whereas the Currency Board still has 82% of circulating currency backed by Sterling reserves, the East African commercial banks have the distinction of being the only banks in the world with an advances ratio in the private sector of 100 per cent of deposits and negative reserves. In 1950 bank advances in East Africa were only £19 millions; now they are well over £100 millions.

This huge bank credit expansion which parallels that of Britain in the nineteenth century, can be regarded as resulting from an increasing opportunity to employ banking funds locally, which has shown itself in a fall in the reserve to deposits ratio from 50 per cent to zero and a fall in reserves of £32 million. The point I want to make here is that this process - the rising co-efficient of expansion between deposits and reserves reached its limit (indeed over-shot it) some years ago; since then the banks have been fully loaned up.

This has significance for the elasticity of the money supply and for the utilization of savings in the future.

In the first place the future expansion of the money supply can no longer be achieved by drawing upon banking funds in London as domestic demand expands and in the absence of a Central Bank the money supply would be limited in its growth by the external balance of payments. In the second place (and this is not understood by many monetary economists) once banks become fully loaned up they become incapable of transmitting current savings into real investment. Bank deposits, having become a means of payment, savings in the form of bank deposits constitute hoarding - just the same as if the saver had buried unspent currency. Just as we need a Central Bank to make it possible to effect a controlled expansion of the bankers' ability to expand their lending, so we need new and attractive financial assets to attract idle bank balances into active use, and to prevent them being invested externally.

A further feature of the monetary system which has received little attention is the way in which the Currency Board obligation to redeem East African Currency in sterling compels the banks to meet their East African deposit liabilities in Sterling at the option of the depositor. This is because if they refused to do so, or quoted a rate differing from par by more than the usual charges, the depositors would demand cash and get their Sterling from the Currency Board. This in itself would not worry the banks if they were short of Sterling but it is not the end of the story. The banks would have to replace the cash withdrawn and they could only do this by tendering Sterling to the Currency Board. It is for this reason that we can describe the commercial banks as being responsible for finding the foreign exchange to finance a deficit in the external balance and it is the commercial banks, not the monetary authorities, who have to worry about the foreign exchange position and its effects on reserves. The monetary authority's responsibility is limited to currency redemption and during the last two decades the Currency Board has always held Sterling far in excess of any conceivable demands for conversion.

The features of the present monetary and banking system of East Africa that I want to stress are firstly this "loaned up" condition of the commercial banks and secondly the dual responsibility of the Currency Board and the commercial banks for the external reserve of the system. Given the traditional role of the Currency Board and taking account of the responses of a fully loaned up banking system, the determination of the money supply depends upon the balance of payments and the propensity of the public to hold currency because it is this propensity which determines the share of the Currency Board in a given volume of reserves.

I do not suggest that the banking system will remain permanently indebted to external head offices. Some of this indebtedness is attributable to the newer and smaller banks for whom such overdrafts represent a local share of the capital of the bank. Because these banks are (with one exception) not incorporated in East Africa, Capital does not get recorded as such in the statistics. For the large British banks evidence given to the Radcliffe Committee suggests that they will not remain for long in debt to their Head Offices and we would therefore expect that if the existing system were to continue they would eventually settle down to maintaining a more or less stable relationship between deposit liabilities and very small sterling reserves so long as there is adequate opportunity for

local lending. We shall consider later how this conclusion might be affected by the institution of central banking.

To conclude this section on the significant features of the present system mention must be made of the Currency Board's departures from the traditional role. A Fiduciary issue which is permitted by law and implemented once and for all as a source of finance for government has no effect on the Currency Boards' operations: at the margin it still operates as a passive money changer. That Fiduciary issues have been introduced is not therefore a significant alteration to the system. The fact that the legal Fiduciary entitlement at present stands at £45 million, only £19 millions of which has been implemented, is significant to the extent that the timing of implementation can be decided as a matter of monetary policy rather than fiscal policy. It may be however that the the under-utilisation to the extent of £16 millions of the permanent Fiduciary element is explained by the highly commendable desire of the Currency Board to hand over a strong position to the new Central Banks.

Much more significant than the fiduciary potential, however, is the fact that the Board has been, for the last four years, lending to the commercial banks. Although the scale of operations is not large (£3.2 millions in December 1964 being the peak) the lending has varied from month to month according to the tightness of money in East Africa. The performance of this function of lender of last resort can be regarded as establishing the Board as a quasi Central Bank.

Its other distinction is that its operations in the Treasury Bill "market" actually succeeded in insulating the East African discount rate from the London rate when the Bank of England raised Bank rate to 7 per cent in December 1964; the average tender rate on Tanganyika Treasury Bills remaining at just over 4 per cent until London's rate was reduced in June 1965. This is a feat of which the established Central Banks of Rhodesia, Ghana and Nigeria would have been proud some years after starting operations. The fact that the commercial banks all now keep balances with the Currency Board is a useful development but is not a significant factor in monetary control unless these can be influenced by open market operations or some legal requirement as to their level is imposed.

Section Two. The Introduction of Central Banking

Before going into the complications of separate monetary systems let us clarify the significant changes which will be introduced into the system by the introduction of full Central Banking. I leave aside here the very important service functions of a Central Bank and concentrate on the effect of its operations on the monetary situation.

Undoubtedly the major change will be that there will be a monetary authority with technical powers of unlimited credit creation and with wide legal powers over the commercial banks. These powers, as in any country, can only operate within the limits of the economic structure on the one hand and the financial structure on the other. The highly "open" economic structure of the East African economies suggests that the scope for credit creation will be severely limited by the balance of payments constraint; and the rudimentary financial structure together with considerable banking heterogeneity, suggest that the traditional banking controls will be largely inappropriate.

Any Central Bank in East Africa would be well advised to seek the maximum cooperation of the commercial banks rather than seek to create for the purpose of indirect control the complex inter-relationships which are typical of more sophisticated financial structures.

No doubt the Central Banks will need to have the traditional powers (they are useful in the background) but it is difficult to see that, to begin with, they will be able to do anything much more than the Currency Board (quasi-Central Bank) has been doing. The crucial question to my mind is how the Central Banks will deal with the London connection.

The other African Central Banks which have taken over from the Colonial Currency Board situation (Ghana, Nigeria, the Federation of Rhodesia and Nyasaland) have all done so at a time when the commercial banks have had substantial sterling balances and the correction of this state of affairs has been one of the main objectives of monetary policy. East Africa is in a very different situation in that the position has got to be corrected in the other direction. On the other hand there is an important element in the situation which is essentially similar. A Central Bank has as one of its most important roles that of acting as the "lender of last resort" to the financial system; it is able to do this because, in theory, it has unlimited power to create domestic money. The question of inducing the banks to hold all their resources locally (which could in fact be enforced at present under the Exchange Control Regulations) does not arise; what does arise, however, is the fact that even when fully loaned-up the banks have substantial short term overdraft facilities which give them considerable independence of the Central Bank. From the control point of view this is a nuisance but from the point of view of cushioning the effects of external imbalance it is invaluable. If this is appreciated then it is unlikely that the change over will be accompanied by any "tough" legislation requiring the commercial banks to maintain an entirely closed position. It is likely therefore that the East African monetary systems will continue in the same relationship with London though there will be no formal exchange rate link between the East African currencies and Sterling - the exchange rate being expressed in terms of the par value agreed with the International Fund.

Even the ubiquitous opening gambit of Central Banks whereby they require the commercial banks to deposit some minimum sum - generally a prescribed proportion of their deposit liabilities, will be less of an innovation because they already keep deposits (for convenience) with the Currency Board. Moreover the magnitude of the deposits required in the first instance is likely to be very little higher than those already held with the Currency Board because any larger imposition would almost certainly have a deflationary effect on bank lending given the banks' overdrawn position.

Nevertheless - if there is to be a movement away from financial dependence and the maximum prudent use of credit creation, the Central Bank will soon acquire significant liabilities to the commercial banks and the time will soon come when the latter look to the Central Bank for foreign exchange rather than their head offices. A situation will then have been established which is significantly different from that which obtains at present. The nature of the change will consist in the fact that the Central Bank will have become the ultimate source of credit and thereby, within limits, its controller. Its liabilities will no longer be restricted to currency but will extend to liabilities to the banks and the total of these will constitute the domestic credit base of the system, which will need to be related in some way

to the Central Banks' foreign exchange reserves. Fiduciary issues of currency and the foreign exchange backing of the currency will cease to be the appropriate concepts. In their place we shall have to consider the total money supply, the sight liabilities of the Central Bank and a single foreign exchange reserve.

The general conclusion is that the immediate impact of central banking will be virtually unnoticed, and this is as it should be. The explosive mixture however is the potential for monetary expansion and what Paul Clark has distinguished as the most immediate constraint on the rate of growth of the East African economies - the limitations on the expansion of funds for public expenditure. Governments will rightly wish to use their new monetary independence to remove this constraint and the major question which is about to be thrashed out in this connection is the legal limitations which should be placed on the capacity of the Central Bank to lend to the Government and the real factors determining the extent to which monetary expansion will induce real growth on the one hand and the extent to which it will produce inflation and external deficits on the other.

There is no calculation which is conclusive here - it depends essentially on the domestic supply elasticities and on the propensity to import. The latter is capable of being modified to some extent by government measures and there is evidence that the former (especially for locally produced foodstuffs) gives reasonable scope for real growth. In spite of annual injections of several millions as a result of government deficits financed by foreign borrowing or drawing down reserves, the price of basic foods has remained remarkably stable over the last decade. I have not much doubt therefore that the next most immediate constraint is going to be foreign exchange rather than inflation. For this reason the crucial monetary variable in the new era is going to be the central reserves in each country.

Section Three. Separation

I turn now to the special significance of the fact that there will not be one Central Bank but three, and that the next time we come to one of these conferences the visitors will have to obtain "foreign exchange" to do so. This will clearly be the first and most obvious result of the split-up of the common monetary area. How will the change over be effected? It will be effected in exactly the same way as a replacement of notes such as that which occurred in 1964/65 when the Lake Victoria notes were substituted for the Queens Head design. The only difference will be that the newly established Central Banks in each country will issue their own notes in exchange for the East African notes at present in circulation.

There has been a good deal of discussion as to whether the residual assets of the Currency Board should be shared out on the basis of the actual redemptions or whether some formula should be agreed upon. The latter suggestion stems from two things. In the first place, it has been the practice to allocate the profits and the fiduciary entitlement among the participating governments on the basis of a formula at one time including trade, income and population figures, but more recently on the basis of equal shares between the three East African mainland governments. In the second place it was feared in some quarters that the place of redemption might be influenced by timing or by relative confidence in the new currencies.

I can see no substance in either of these arguments. The distribution formula used up to now has been used faute de mieux in the absence of information as to the actual distribution of currency between the participating countries. Had the distribution of currency been known then it would certainly have been used as the basis for the share out. It seems entirely unreasonable therefore to use a makeshift formula instead of allowing the actual circulation of currency to determine the initial distribution of assets in the same way as it will continue to determine their distribution after the conversion. Were the formula to differ greatly from the actual distribution it is clear that there would be a disproportionate allocation of external reserves relative to the actual liability taken on, which would be highly inequitable.

With regard to the timing of the conversion, the short answer is that this is entirely irrelevant providing that unrestricted exchange of currencies continues, at least for a time, after the conversion; and the three governments have committed themselves to maintaining freedom of exchange in the new regime. A word of clarification is perhaps necessary because the argument about timing is highly plausible. There are two cases in which the behaviour of the currency appears to give rise to gain or loss according to the time at which conversion is implemented. There is the case in which a seasonal increase in the currency in one of the participating countries is followed by a reflux; and there is the case in which there is a seasonal outflow from one country to another. Uganda offers an example of a combination of these two cases when the peak currency circulating in early January is reduced subsequently by redemption, and by outflow to Kenya and Tanzania.

We now want to compare the effect of conversion in January with, say, conversion in April. As regards the outflow to Kenya/Tanzania the distribution of assets in, say, June will be exactly the same whether the conversion is done in January or April. True the initial distribution to Uganda would be larger if the conversion were implemented in January than it would if it were implemented in April, but subsequent to the conversion the normal seasonal outflow would take place by a transfer of new National notes giving rise to a claim by Kenya/Tanzania on Uganda's reserves. The same argument applies to the possible effect of an outflow related to confidence. The timing of the conversion will make no difference to the final effect of such an outflow but will simply determine whether it is reflected in the initial distribution of assets or subsequently. Only if the conversion were accompanied by restrictions on transfer would the timing be significant but in that case the expectation of such action by any one of the countries would almost certainly induce an outflow prior to the conversion. Each country, in its own interests, should therefore make clear that it does not intend restrictions on inter-East African transfers.

The timing of conversion in relation to a reflux of currency from circulation is similar in its effects. Although Uganda would get a larger initial share of the residual assets of the Board if conversion took place in January rather than April, the normal seasonal reflux would follow and the banks (in an over-drawn position) would transfer the surplus cash to London via the new Central Bank, thus reducing the latter's sterling reserve to the figure which would have applied had the conversion been implemented in April.

For simplicity these arguments have been given as if the total conversion operation could be completed within

a very short period of time. This is not so, although it is surprising how quickly unsophisticated economies in which communications are deficient and there is said to be a great deal of currency hoarding, can respond to a currency conversion. In the conversion following the break up of the Federation of Rhodesia and Nyasaland 94% of the total currency in circulation was withdrawn within eight months. In the 1964/65 withdrawal of the "Queens Head" issue in East Africa about 80% of the currency in circulation was withdrawn within the same length of time. Where the conversion is a substitution of national currencies the speed of conversion might be expected to be somewhat higher than with a change of design so that we may be fairly confident that very little East African currency will remain in circulation a year after the date at which the conversion starts. It would clearly be rational and less complicated if this date could be the same in each country but it appears from the 1965 Currency Board Report that there is at present no agreement that this shall be so. Different starting dates, by reason of similar arguments to those already given on timing, can not affect the final outcome but might introduce an irrational distortion if there is any "jockeying for position".

For reason of equity the old currency is likely to remain legal tender for a longer period than a year and this fact will do much to establish confidence in the exchangeability of the new national notes since, for some time (longer than a year,) these will be circulated alongside East African notes. For them to be interchangeable at par will require another condition - that the external exchange control of all three countries is identical in its operation. If this can be achieved (and the need for it will be further stressed later in the paper) the transitional period will considerably ease the impact of separate monetary systems so far as cash payments are concerned.

Turning now to the prospective out-turn of the conversion, I have been saved from being wildly out by the timely receipt of an advance copy of the 1965 Currency Board Report. I had worked out the likely distribution of Sterling reserves on the basis of my own calculation of the distribution of currency (which is not far off that estimated in the Board's Report) but I combined this with calculations based on the local securities position shown in the 1964 Board Report and the estimates of Aden currency as shown in the most recent figures given in the Economic and Statistical Review. The position as shown in the figures now available is very different in both respects.

Whereas the latest published figure for circulation in Aden (in June 1963) was £3.6 millions, the actual out-turn of the conversion of Aden's currency is now expected to amount to £16 millions! It is very difficult to explain this but it means ten millions less Sterling for the East African countries! Furthermore there has been a substantial increase in the take up of fiduciary issue during the year; Uganda with £9.4 million outstanding has nearly exhausted its allotment, and its own securities will, of course, be a first charge on the distribution of assets of the Board.

The estimated distribution of currency derived by the Board by making certain adjustments to the outcome of recent note conversion to the Lake Victoria design is: Kenya £20 millions, Uganda £18.8 millions (lower than I thought) and Tanzania £21.2 millions. Assuming that the residual assets will approximately equal the currency liability and taking into account that each country will have to take its own securities as part of its share, we get Sterling reserves for the four

countries as follows: Kenya £16.6; Tanzania £15.1; Uganda £9.4. Recalling that these reserves have to be thought of in relation to the balance of payments position they might better be assessed in relation to imports rather than currency or money supply. The figures as percentages of total net imports are respectively:

Kenya	19%
Tanzania	25%
Uganda	20%

I now turn to consider the specific effects of separation.

Section Three. Separation

For this purpose I shall make three assumptions:

1. No exchange restrictions within East Africa;
2. Current Convertibility of the three currencies at I.M.F. parity.
3. Par clearance of notes within East Africa.

The first of these has been stated as the firm intention of the three Governments; the second in an obligation to the International Monetary Fund of which all three countries are members; the third depends partly on the good sense of the commercial banks and partly on the efforts of the new Central Banks to lower the unnecessary cost of moving currency as an offset to the extra costs in which the banks will be involved in returning the notes of other East African countries to their own Central Banks.

The volume of inter-country cash payments is relatively small and there are many instances in Africa where separate currencies mingle at the margins and form a satisfactory medium of exchange for localised border trade. For the tourist there already exists an instrument which will reduce the inconvenience to a minimum - the traveller's cheque. In Central America a special instrument is in use - the Central American Cheque - which serves, not only as a travellers cheque, but can also be obtained by persons who are not customers of banks or conversant with banking procedures to make payments by post. It is to be hoped that the three National Post Office Savings Banks will continue to provide transfer facilities without any alteration to the present procedure as far as the customer is concerned.

As far as individuals and firms who use banks are concerned there will be very little difference because East Africa has never enjoyed the luxury of a country-wide par cheque clearance system - let alone par clearance on an East African basis. Bank charges on clearing cheques within East Africa still (unfortunately) range between 1/16 and 3/16 according to distance from a Currency Centre, and the figure at the top of the range applies to a particular transfer within Uganda. The pattern of charges may alter to reflect greater cost involved in clearing but there should, once again, be very little difference as far as general public is concerned in the operation of transfers by cheque within East Africa.

There is however an exchange risk introduced. To the extent that there are differences in the degree of confidence attached by the public to the three currencies there will tend

to be speculative movements of idle balances away from the weak country to the strong country with the hope of profit. In East Africa the scope for such movements is much more limited than in a highly developed country with a large mass of financial assets having a high degree of liquidity. The effect of the separation is likely to take the form of a minimization of risk by a concentration of balances in the strong country by firms and individuals who normally operate on an East African basis. There will also almost certainly be some tendency for a shift into sterling to the extent that exchange control can be avoided.

Probably more important than any general assessment of the "strength" or "weakness" of a currency is the question of whether it is "soft" or "hard" as regards the implementation of exchange control. It is clear that differences in the exchange control regulations and/or administration could give rise to foreign payments being made by one East African country via another East African country, thus inflating the apparent flow of capital from one to the other. It might seem at first sight that such movements would shift the loss of foreign reserve from the paying country to a third party; reason tells us that this can not be the case: any movement of funds from one East African country to another must give rise to a claim, or extinguish one; thus the paying country indirectly loses foreign reserves as it transfers funds to its neighbour. Nevertheless the present political attitude to bilateral payments is such that such flows are to be avoided if at all possible. In any case uniformity is highly desirable from the point of view of effectiveness since the overall effectiveness will necessarily be equal to that of the least effective participant in any area within which payments are free.

We turn now to a consideration of the effects of separate currencies on the banks. We have already seen that, far from conforming to the colonial caricature of banks sucking out money from exploited underdeveloped countries they are over committed. It is likely therefore that the London link will be preserved for the time being. The question then is to what extent the banks will alter their behaviour as a result of East Africa ceasing to be a single monetary area. In order to answer this it is necessary to know something about the way in which the banks have conducted their East African business under the present system.

First of all - to what extent has there been a tendency for the banks to apply to East Africa as a whole a policy designed to correct a position in one of the countries of East Africa? It is difficult to be conclusive without a much more detailed analysis of the statistics than I have yet made but as a provisional conclusion I would say that there is evidence of some tendency to look to London - even when overdrawn - rather than transmit a "squeeze" to the culprit's neighbours. This would be consistent with the high liquidity and large resources of these banks overall, and also with the well known preference of at least two East African Governments.

Let us take, for example, the 1960 capital outflow. Though not confined to Kenya it was mainly located there; we find that Kenya's deposits fell by £5.6. millions during 1960 in spite of an increase in bank lending (which would raise deposits) of £4.5 millions. These figures would indicate an outflow of £11.1 millions, but Kenya's bank reserves fell by £15 millions; the difference being mainly due to increased claims on banks in Uganda and Tanganyika. The inter-African indebtedness thus increased the drain on Kenya's banking funds.

This is probably due to a time lag to some extent and is not significant by itself, but the behaviour of Advances is more conclusive. Bank Advances in Kenya, clearly subject (as in other countries) to a time lag, rose to a peak in September, 1960 when they reached £44 millions; by March 1961 they had been cut to £38 millions - reduction of 14%. In Tanganyika Advances rose during the same period by £1.2 millions and Advances in Uganda rose by £2 millions. This strongly suggests that policy reactions run direct to London and are separate rather than consolidated via Nairobi.

In spite of the more detailed break-down of inter-East African indebtedness which first became available in the June 1965 issue of the Economic and Statistical Review the figures are difficult to interpret and I suspect contain a large amount of meaningless double counting. Taking them at their face value they present a picture of Kenya being the net lender, especially seasonally. But whether this is internal bank lending or the result of clearing balances reflecting customers' transactions is not clear. Certainly the size of these items as revealed in the new gross figures invites some investigation - £62 millions recorded as "due by banks in East Africa" at the end of February 1965; half of which is inter-country.

In view of these very large sums which are involved in the present methods of clearing, the emergence of an exchange risk will induce the banks to clear East African inter-country obligations through their respective Central Banks. They will also probably be more reluctant to lend inter-country in East Africa and there will be a tendency for more use of London for short term employment of funds unless each country can develop a suitable supply of short term securities which the Central Bank could discount to allow for peak requirements. The Currency Board has tried to do this to some extent on an East African basis but has felt the lack of an East African Bill as distinct from national Treasury Bills. In the changed situation the national Treasury Bill should come into its own but the trouble is that the chance of working up any kind of money market in which to obtain some degree of liquidity and so spread Bill holding outside the banking system has been greatly reduced by the necessity to do it on an individual country basis instead of an East African basis. Speaking of Treasury Bill directs attention to another magnitude revealed by the banking statistics which deserves some consideration. Government deposits in East Africa in June 1965 exceeded £50 millions; an increase of six-fold over the last five years!

It seems to me then that the banks are likely to alter their behaviour only in the sense that "pooling" on an East African basis will be diminished and that there may be an increase in the volume of shuttle money moving between East Africa and London at a given relation between transfer-charge and relative interest rates. This, as with most of the changes, will involve some cost.

Finally we have to consider the position of the Central Banks in relation to one another and the significance of the separation for the bilateral payments position between East African countries. I believe that a greater volume of clearing will go on through the Central Banks than went on through the Currency Board, but it will of course be different in character. Any arrangement that is made in this connection will be in the nature of an international clearing and payments agreement.

Appendix

Newlyn.

The Aden Currency Mystery

The fact that it is expected that some £16 millions of East African Currency will be redeemed in Aden whereas the latest published figure for circulation in Aden was given in the Economic and Statistical review as £3.6 millions on 30th June, 1963, suggests that this might have something to do with avoidance of exchange control in East Africa. Especially as a very high proportion of large notes is involved. The facts follow:

On 1st April the issue of the Aden Dinar started in exchange for East African Currency in Aden. Redemption then proceeded as follows:

<u>From 1st April to end of</u>	<u>£m</u>	<u>Monthly</u>	<u>£m</u>
April	5.6	April	5.6
May	9.1	May	3.5
June	11.4	June	2.3
July	Not available	July)	2.8
August	14.2	August)	

These were the latest figures at the time the Board Report went to press and at that time the Board estimated that the total redemption would amount to £16 millions.

Exchange Control vis a vis the rest of the Sterling Area was only introduced in East Africa on 11th June 1965. Had there been a significant outflow via Aden this would have shown itself in the June and July figures, but the distribution of redemptions through time conforms closely to the normal pattern; indeed some £10 millions of East African currency must have been presented for redemption in Aden before East African exchange control was introduced vis a vis the R.S.A. countries. This accounts for 63% of the total and the tailing off of the rate of redemption of the remainder does not support any significant boost from exchange control evasion.

We must conclude therefore that the series of statistics showing the distribution of East African currency between the East African countries (Kenya, Tanzania and Uganda) and Aden, have contained a cumulating error amounting over a period of twelve years (Aden has been included since 1951) to £12.4 millions. It would seem that the only explanation is that there has been a physical movement of East African currency to Aden at an average rate of £1 million a year. Presumably the East African Statistical Department has calculated the currency outstanding on the basis of Issues and Redemptions, making no allowance for actual currency movement.

In support of this presumption (confirmation is being sought), it is note-worthy that the Currency Board has never published any statistics showing the inter-territorial distribution of its currency and that the Statistical Department changed its presentation three times in 1963 and has since given only the figure for the total currency,

irrespective of location. The changes were as follows:

	<u>Currency circulation as at 30th June 1963 £m</u>		
	<u>E.A. Territories</u>	<u>Other Territories*</u>	<u>Total</u>
Review No.10	63.3	3.6	66.9
No.11	63.3	Not given	Not given
No.12	Not given	Not given	66.9

Assuming that the above interpretation of the Statistical Department's figures is correct there is no mystery about the cause of the discrepancy in the data but the mystery of the large physical movement of currency to Aden (85% in 100/- notes) remains.

W. T. Newlyn.

*Aden only in 1963.

Addendum

(1) Since this paper was duplicated the Statistical Department has stated that the figures have been supplied by the Currency Board and calculated as presumed above.

(ii) The percentages of reserves to imports given on page 8 relate only reserves taken over from the Currency Board and do not include any other "free" balances which may be taken over from Government.

W.T. Newlyn

NORMAL PATTERNS OF INDUSTRIALISATION IN
EAST AFRICA

by

Ardy Stoutjesdijk

Introduction.

The empirically observed increasing share of industrial output in increasing national income has been the object of a great many studies, whether on a national or an international basis. For a statistical investigation on a national basis time-series analysis will be required, which implies the availability of comparable time-series for a fairly long period. Apart from the fact that in developing countries such data are often not available, the very nature of these economies precludes the possibility of examining the changing economic structure on the basis of their own development. Therefore an interesting exercise is to analyse the development on a cross-country basis, including in the statistical universe as many countries in different stages of development as possible. The results of such an exercise could indicate an average observed relationship between rise in income and rise in industrial output. When data permit, this analysis could be disaggregated to the level of sectors.

It should be pointed out from the start that such an average pattern of industrialisation does obviously not have any normative value. It is the average observed pattern, in the countries included in the sample, where the validity for each of the countries individually depends on the goodness of fit of the standard relations derived.

Two outstanding studies have been carried out along these lines. The first is prof. Chenery's "Patterns of Industrial Growth" (1), the second is a joint study of the United Nations Centre for Industrial Development and the Research Centre in Economic Growth, of Stanford University (2). These studies make an attempt to derive a standard relationship between industrial output and a number of explanatory variables, in order to arrive at a result that could be used for comparative and projection purposes, not only in countries included in the sample, but also for countries outside it. Especially the U.N. study aims at this target.

The general outline of this paper is the following. First the method used in the two studies referred to above will be briefly described. Then the applicability to the East African economies will be discussed. Finally the method will be applied to East Africa, under a number of restrictive conditions. In the first place, the observed level of industrial output in 1963 will be compared to what might be expected on the basis of the standard equations. In the second place a projection of industrial output in 1970 will be made.

As will be seen, the major difficulty arising in these calculations is the conversion of the different values into 1953 prices, in which the standard equations are given. No satisfactory

(1) American Economic Review, September, 1960, Vol. II, No. 4, pp. 624-655.

(2) A Study of Industrial Growth, New York, 1963.

solution has been found for this difficulty; hence the results in this paper should be regarded as tentative, and mainly meant as an illustration of what could be reached were data available in the correct form. Even if deflation (or inflation) factors for total manufacturing output and for each of the sectors were available, the high degree of aggregation does not allow for detailed industry projections without further study. At the maximum, therefore, it can be claimed that a general framework for projection of industrial output is provided in these studies, but due to lack of sufficiently detailed statistical information they can not replace country - and industry studies.

The method.

The method of analysis in the two studies referred to above, is essentially the same. Since the U.N. study is more elaborated and uses more recent data, we will confine ourselves here to a description of the method and results of this study.

The working hypothesis is that the development of a given country conforms to some pattern determined by the quantified relationship between the level and changes of manufacturing output on the one hand, and some general economic characteristics of this country on the other hand. If the hypothesis would prove to be valid then this relationship would provide a highly useful tool in the evaluation of a country's industrial development and its projection. If the actual production falls short of what might be expected on the basis of the relation determined, it would give some indication of possible development of the relevant sectors.

In the study under review, manufacturing industry is taken to include all transforming industries and to exclude mining and power generation. Total manufacturing industry is subdivided in thirteen industrial sectors, based on the ISIC - 2 digit classification. The quantitative relations referred to above are expressed in the form of a set of equations in which the levels of total manufacturing output and of outputs in each of the thirteen sectors are 'explained' in terms of a few selected macro-economic variables. Though both time-series analysis and cross-country analysis have been carried out, the latter is the more relevant for our purpose, because the sample of countries that could be studied under this heading is much larger and the results appeared to be superior to those of the time-series analysis. The principal purpose of the time-series analysis was, as is stated in the report, to check the usefulness of the cross-section analysis for projections.

The final analysis is based on the 1953 data for 53 countries plus the 1958 data for 42 countries. (3) The variable to be explained is industrial output, measured by value added. The explanatory variables, selected on the basis of preliminary tests, are per capita income (y) and population (P). These proved to form the best combination - in the sense of the minimum number necessary for an adequate explanation of the dependent variable - from among eight candidate variables. (4) For the statistical test

(3) The basic data are taken from another U.N. publication, Patterns of Industrial Growth 1938 - 1958, New York, 1961.

(4) The eight candidate variables are: (i) per capita income, (ii) population, (iii) rate of economic development, (iv) government policy, (v) natural resources, (vi) trading position, (vii) technological factors, (viii) other factors, such as the availability of entrepreneurial skills.

and the considerations leading to the final choice we may refer to the original document (5).

A statistical test on the basis of the function:

$$V_0 = f(y, P)$$

where V_0 is value added, did not prove to be sufficiently satisfactory for practical use. A closer examination of the residuals of the equations for each sector showed that a further improvement was possible. There appeared to be a noticeable degree of correlation among the different sectors within each country, in other words a deviation of observed and 'normal' manufacturing output on the basis of the preliminary equations was reflected in the output levels of the sectors, showing residuals of the same sign. For this reason an additional variable was introduced, the relative degree of industrialisation, D . The value of D was obtained as the residual of the regression equation for total manufacturing output. It appears obviously only in the sector equations, as it is derived from the values for total output.

The final regression equations are as follows:

for total manufacturing output:

$$\log V_0 = a_0 + b_0 \log y + c_0 \log P$$

and for the individual sectors:

$$\log V_i = a_i + b_i \log y + c_i \log P + d_i \log D$$

where:

V is value added, in millions of 1953 US dollars

y is per capita income, in 1953 US dollars

P is the size of population, in millions

D is the ratio between the observed value added (V_0) and the calculated value added (V'_0), in other words:

$$\log D = \log V_0 - \log V'_0$$

a is a constant

b , c and d are the partial elasticity coefficients on the respective explanatory variables.

The results.

The results of the cross-section analysis are summarized in Table I. As can be seen, per capita income appears to be the most important factor in explaining the variation of per capita industrial output between countries (6). The income elasticity of output of total manufacturing (b_0) appears to be about 1.37, which means that, ceteris paribus, an increase in per capita income of one percent is accompanied by an increase in the value added of total industry of 1.37 percent. Value added in total industry is therefore growing more than proportionately with per capita income, population taken to be constant. This more than proportionate growth in value added applies also to most of the sectors, though not for 'leather products' and for 'food, beverages and tobacco'. The latter is growing approximately proportionally with per capita income.

(5) op.cit. pp. 36-38

(6) This statement can be reversed, of course, but this is not the point here.

Another interesting conclusion that can be drawn from Table I is the changing composition over time of total industrial output. For instance, although 'textiles' is growing more than proportionately with income per capita, it is growing slower than total manufacturing output, which means that its share in this total is declining. On the other hand, 'paper and paper products' is not only growing faster than proportional with per capita income, it is also growing relatively faster than total manufacturing output, in other words its share in total manufacturing rises.

The population elasticity of total manufacturing is 1.12, which means that given a certain per capita income level, total manufacturing value added varies one-eighth more than in proportion to the size of population. The highest elasticities are found in 'chemicals' (1.39) and 'basic metals' (1.65), which is not surprising since economies of scale are well-known characteristics of these industries.

The elasticity of output with respect to the relative degree of industrialisation indicates whether a given deviation from the 'normal' level of total manufacturing output has more or less than proportional effect on the level of output in the different sectors. So 'basic metals' tends to respond more than proportionally, 'rubber products' less than proportionally. For the sake of completeness, some of the statistical properties of the standard equations have to be mentioned. We will confine ourselves, however, to some very general observations, and refer to the original document for a detailed treatment.

The variables in the final standard equations have been selected in various steps. First multi-linear regressions in 9 variables have been carried out, and the variables appearing statistically significant have been selected. After a test for intercorrelation, regression equations have been determined for the respective sectors with the best selected variables. The correlation coefficients appeared to be high, but a further test showed that a set of only two explanatory variables, y and P , yields almost as good a result as larger sets of variables. As discussed earlier, these trial-and-error tests of various candidate variables did not give a result that was useful for projection purposes and a new variable, D , was introduced. Though D is not quite specifiable in economic terms, it has been regarded as measuring the relative degree of industrialisation.

The final set of standard equations, inclusive of D , had correlation coefficients as high as .9659 for 'total manufacturing' and varying from .7497 (for 'basic metals', in all sets of equations the worst 'explained' sector) to .9680 (for 'metal products').

In table II the correlation coefficients for the different sectors and the standard errors of the regression coefficients are given.

The applicability of the results to East Africa.

To what extent are the results of the method described above applicable to East Africa? In other words, how representative is the sample on which the standard equations are based.

A closer look at the list of countries included in the U.N. sample seems to indicate that the very poor countries, among which Kenya, Tanzania and Uganda should be reckoned, form a minority in the sample. The European and Latin American countries dominate clearly and, therefore, the sample is more representative for countries with a per capita income higher than about \$ 200. At very low levels of income the standard equations are even not applicable at all. When income per capita would be less than \$ 40 and the population less than 1 million, the equations would give a higher value added for 'food,

'beverages and tobacco' than for 'total manufacturing' (7). This seems, consequently, to indicate the declining applicability of the standard equations at lower levels of income and population.

As will be seen in the next section, where the standard equations are applied to East Africa, and the deviations of normal and actual level of industrial output are compared with those for other countries, the results are not too bad. Only in the case of Tanzania the residuals are extremely large, which is undoubtedly due to the mono-crop type structure of manufacturing industry, the processing of sisal playing an extremely important role there. Taking into account that also in Kenya and Uganda the processing of agricultural products contributes substantially to the total value added of manufacturing industry, it is surprising how the results improve, in terms of residuals, when the sectors 'food, beverages and tobacco' and 'textiles' are combined, especially in the case of Tanzania and Uganda.

It has been said before that the average pattern of growth in industrial output, that has been described in the previous sections, does not have a normative value. Neither is it necessarily identical with the optimal pattern of development. If one can assume, however, that in most cases the actual development will be closer to this average, 'normal', pattern than to the optimal pattern, a number of interesting applications arise.

A comparison of present levels of industrial output and 'normal' level could be made, given per capita income and population. Deviations from 'normal', which would indicate a relative over- or underindustrialisation would call for a detailed study of the factors which have contributed to this deviation. In other words, no value judgement follows from the comparison but the emphasis is put on those sectors which render the country's development peculiar, compared to what is observed in the average. Keeping these initial deviations in mind, a projection along normal patterns could be made under alternative assumptions with respect to growth in per capita income, population, and policies to influence the relative degree of industrialisation. A comparison of projection along 'normal' lines and a plan-projection could throw some light on the direction in which the economy is developing.

Present actual versus present 'normal'

The initial, and probably most important unsolved difficulty is related to the fact that the standard equations are given in US dollars of 1953, and consequently yield results in those terms. Apart from the problem of converting the East African currency into dollars, which has been done on the basis of 280 US cents per pound sterling, the value added in manufacturing had to be expressed in 1953 prices. This appeared to be impossible because of lack of data. Although some price indices are available, their partial character did not justify their application; moreover, a unique deflator (or inflator) is about as bad as none at all, because prices have presumably moved in different directions for different sectors. The drastic, but unsatisfactory solution that has been chosen is no deflator at all, in other words, relative prices in manufacturing have been assumed to be unchanged from 1953 to 1963. How far this affects the results significantly is difficult to assess, but it must weaken them to some extent. Further investigations will have to show to what extent the findings have to be modified.

(7) op.cit., p.12

In tables III to VII the present levels of value added in 'total manufacturing' and in the different sectors have been compared with the 'normal' levels, for Kenya, Tanganyika, Uganda and East Africa as a whole. The data for value added in 1963 have been taken from the Industrial Census of the country concerned. In the case of Tanzania the value added was given for 1961; the figures for 1963 have been estimated by taking the growth rate in manufacturing industry as a whole (6.2%) as representative for all sectors.

In Kenya income per capita in 1963 was estimated at US \$ 82.3, population at 8,847 thousand. Total value added in manufacturing industry was US \$ 80,0 million. The 'normal' value added, given the general data, was found to be US \$ 112,0 million, and the value of D therefore appeared to be 0.7145, which indicates a certain degree of underindustrialisation. (Table III).

In Tanganyika per capita income was US \$ 66.1 in 1963, with a population of 9,797 thousand. The observed value added in 1963 was approximately US \$ 52,0 million. The 'normal' value added appeared to be US \$ 93,0 million, consequently the value of D was 0.5585. (Table IV).

In Uganda per capita income in 1963 was estimated at US \$ 68.6, and population at 7,190 million. Value added in manufacturing industry was according to the industrial census US \$ 45,7 million. The 'normal' value added would be US \$ 69,2 million, which results in a value of D of 0.6605. In some cases it was not possible to follow the classification of the standard equations, because the Census did not give sufficient data. Therefore sectors 2 and 3, and sectors 11 and 12 had to be combined. (Table V).

In the next two tables the three countries have been combined in two ways. In table VI they have been regarded as three separate countries. The figures given are the arithmetical sum of the figures given in tables III to V for actual and 'normal' value added. In table VII the three countries have been regarded as forming one country, with a population of 25,834 thousand and a per capita income of US \$ 72.2. In both cases actual value added is US \$ 177.7. Normal value added in the case of three separate countries is US \$ 274.2 million (D is 0.6480) and in the case of one single country US \$ 305.2 million (D is 0.5822). We will come back to this later.

The most marked figures in the tables are those for 'food etc' and 'textiles'. Especially in the case of Tanganyika the deviations between 'observed' and 'normal' are substantial. Apart from the restrictions, mentioned earlier, under which the figures are given, some possible sources of discrepancy might be indicated. The results for the sector 'food' are probably to a large extent due to the importance of the subsistence sector in the three countries, and its absence in most of the countries included in the sample. It is very well possible that the 'normal' level of production in this sector in East Africa is well below the 'normal' level given, say 20 - 30%. That the deviations for Uganda and Kenya are relatively small is probably due to the fact that the agricultural products processed in these countries - and consequently included in manufacturing industry - belong mainly to this category. This would give at the same time a possible explanation for the huge positive difference in Tanganyika in the sector 'textiles', where the processing of sisal is included. (8)

(8). This is in accordance with the Industrial Census of Tanganyika of 1961, but not with the Development Plan 1964 - 1969, where sisal is included in crop husbandry and is not mentioned under processing industries.

A comparison of tables VI and VII makes clear that the industrial development of East Africa as a region conforms more closely to the 'normal' pattern than it does for the three countries individually. The sum of the deviations (in absolute terms, i.e. regardless of sign) is extremely small and even the discrepancies in the first two sectors are almost negligible now. A second interesting conclusion is that the 'normal' level of value added of 'total manufacturing' in the case of one region is considerably higher (11 %) than in the case of three separate countries. It can be seen that this particularly originates from the capital-intensive sectors, ('chemicals', 'metal products', 'basic metals' and 'printing and publishing'). As will be seen later, when we make some projections along these lines, the discrepancy tends to increase. The 'external economies' of the larger market in 1970 appeared to be 14 % of value added in manufacturing industry in East Africa.

To give finally some meaning to the magnitude of the deviations found for East Africa we will give some figures found for other regions. They are taken from the U.K. study and give the weighted sum of the deviations from 'normal'.

Countries with under US \$ 150 per capita income	37.7
Asia	31.9
Latin America	16.4
Europe	33.9
Africa	26.0
East Africa (region)	31.2

Projection of 'normal' industrial output in 1970.

Given an independent estimate of the explanatory variables in the standard equations, a 'normal' level of manufacturing output can be computed. Or, to change the emphasis a bit, given a target level of per capita income, and a population forecast, the 'normal' level of manufacturing output can be computed. When also a target level of value added in manufacturing industry is given, the future relative degree of industrialisation can be estimated, or, given a target for the relative degree of industrialisation the implicit level of value added in manufacturing industry can be estimated.

The projections we intend to make here will be a mixture of these alternatives. For Kenya (9) and Tanganyika the required target figures could be taken from the development plans, which cover the period until 1970. For Uganda, however, no figures for the next plan-period are available yet, except a population forecast. Certain assumptions had to be made, therefore; it is assumed that Uganda will at least attempt to attain the same level of per capita income as Tanganyika in 1970, and will also try to reach the same relative level of industrialisation. The general data on which the projections have been based are:

- a. For Kenya: per capita income in 1970 US \$ 92.4, population 10.8 million and value added in manufacturing industry US \$ 114.9 million.
- b. For Tanganyika: per capita income US \$ 82.0, population 11.3 million, and value added in manufacturing industry US \$ 103.6 million.
- c. For Uganda: per capita income US \$ 82.0, population 8.5 million.

'Normal' value added in 'total manufacturing' and the resulting degree of industrialisation are given in the following table. It should be noted that, in the absence of an independent estimate of value added in Uganda in 1970, the argument had to be reversed there. It has been assumed that Uganda will aim at the same level of industrialisation as Kenya and Tanganyika, and given this, the target value added could be estimated.

TABLE VIII

Industrial output in 1970

Country	US \$ million		
	Target value added in 1970	'Normal' value added in 1970	Degree of industrialisation
Kenya	114.9	164.3	0.6993
Tanganyika	103.6	146.9	0.7050
Uganda	75.2	107.4	0.7000
E. A. - sum	293.7	418.6	0.7016
E. A. - region	293.7	477.7	0.6148

(9) Reference is made to the original development plan, the revised version not yet being available at the time this paper was written.

In Kenya the relative degree of industrialisation in 1970 will be lower than in 1963, when D was 0.7145. This is consistent with the plan figures, the target rate of growth of manufacturing industry being lower than the overall rate of growth of the monetary sector (5.3% vs. 5.7%). It is very well possible, however, that these growth rates have been altered in the revised version of the plan.

The target Tanganyika has set itself is tremendous and it is very well illustrated by the target value of D in 1970, 0.7050, compared to a value of only 0.5585 in 1963. If Tanganyika could attain this rate of growth in manufacturing, it will have reached a higher level of industrialisation in 1970 than Kenya.

It is assumed that Uganda will not fall behind Tanganyika in this period and aim at a target at least as ambitious, i.e. a value of D of about 70%. This implies a growth rate of manufacturing industry in Uganda of 7.4% per annum.

The discrepancy between the 'normal' value added in manufacturing industry in East Africa as a region and East Africa as three separate countries in 1970 will be approximately US \$ 60 million, or 14%. As has been said before, this growing advantage of the region over three separate countries is mainly attributable to the differences in value added of the capital-intensive sectors.

An interesting exercise would be to project future sectoral outputs according to the 'normal' pattern and to compare the results to plan figures for the sectors. Unfortunately only for Tanganyika such figures are available, in an aggregated form. In table XI the comparison for this country has been made. For Kenya and Uganda the 'normal' outputs have nevertheless been computed and they have been compared to the observed levels in 1963. Implicit sectoral growth rates have been computed. To be able to do this also for East Africa as a whole the same exercise has been done for Tanganyika. In tables IX, X, XII, XIII and XIV the results have been summarized.

TABLE 1

Results of the cross-section analysis: 1953 and 1958 combined sample

Manufacturing sector (ISIC classification)	regression equations
TOTAL MANUFACTURING	$\log V_0 = -1.637 + 1.369 \log Y + 1.124 \log P$
Food, beverages and tobacco	$\log V_1 = -1.032 + .978 \log Y + .862 \log P + .834 \log D$
Textiles	$\log V_2 = -2.549 + 1.205 \log Y + 1.522 \log P + .964 \log D$
Clothing and footwear	$\log V_3 = -2.709 + 1.361 \log Y + .962 \log P + .877 \log D$
Wood products	$\log V_4 = -3.238 + 1.531 \log Y + 1.030 \log P + 1.008 \log D$
Paper and paper products	$\log V_5 = -5.008 + 2.055 \log Y + .16 \log P + 1.699 \log D$
Printing and publishing	$\log V_6 = -3.926 + 1.718 \log Y + 1.041 \log P + .273 \log D$
Leather products	$\log V_7 = -2.160 + .893 \log Y + .857 \log P + 1.351 \log D$
Rubber products	$\log V_8 = -4.176 + 1.532 \log Y + 1.201 \log P + .281 \log D$
Chemicals and petroleum coal products	$\log V_9 = -3.476 + 1.547 \log Y + 1.395 \log P + .712 \log D$
Non-metallic mineral prod.	$\log V_{10} = -2.258 + 1.157 \log Y + 1.014 \log P + 1.116 \log D$
Basic metals	$\log V_{11} = -5.269 + 1.991 \log Y + 1.649 \log P + 1.915 \log D$
Metal products	$\log V_{12} = -4.175 + 1.984 \log Y + 1.312 \log P + 1.566 \log D$
Other manufacturing	$\log V_{13} = -4.872 + 1.847 \log Y + 1.533 \log P + 1.053 \log D$

From: U.N., A study in industrial growth, p.7

TABLE II

1953-58 COMBINED CROSS-SECTION REGRESSIONS

Sector	Number of observations	Standard errors of:			\bar{R}^2
		b_i	c_i	d_i	
0	95	.0400	.0303	-	.9659
1	95	.0459	.0348	.1240	.9350
2	95	.0722	.0547	.1952	.9091
3	89	.0551	.0417	.1488	.9296
4	93	.0518	.0468	.1668	.9272
5	85	.0619	.0696	.2482	.8932
6	87	.0432	.0327	.1167	.9671
7	91	.0736	.0626	.2234	.7900
8	85	.0746	.0566	.2017	.9074
9	95	.0609	.0462	.1645	.9460
10	95	.0559	.0424	.1512	.9206
11	76	.1720	.1303	.4648	.7497
12	91	.0518	.0392	.1399	.9680
13	81	.0850	.0644	.2295	.9122

From: United Nations, A Survey in Industrial Growth, p. 45

N.B.: \bar{R}^2 is the coefficient of determination.

TABLE III

KENYA

S E C T O R	VALUE ADDED in 1963 - '000 \$		COMPOSITION in %		Deviation from 'normal'
	observed	'normal'	observed	'normal'	
1. Food, Beverages and tobacco	29.775	40.506	37.3	50.5	- 13.2
2. Textiles	3.130	9.032	3.9	11.3	- 7.4
3. Clothing and Footwear	3.139	5.756	3.9	7.2	- 3.3
4. Wood products	4.155	3.562	5.2	4.5	0.7
5. Paper and paper products	1.789	-	2.2	-	2.2
6. Printing and Publishing	6.230	2.004	7.8	2.5	5.3
7. Leather products	580	1.813	0.7	-	0.7
8. Rubber products	529	-	0.7	-	0.7
9. Chemicals and Petroleum Coal products	11.152	6.070	13.9	7.6	6.3
10. Non metallic mineral products	5.275	6.828	6.6	8.5	- 1.9
11. Basic metals	-	-	-	-	-
12. Metal products	13.398	4.457	16.7	5.6	11.1
13. Other manufactur- ing	876	-	1.1	-	1.1
TOTAL, manufacturing	80.028	80.028	100.0	100.0	54.8

$$V_0 = \text{US } \$ 112.000$$

$$D = 0.7145$$

TABLE IV

TANGANYIKA

S E C T O R	VALUE ADDED in 1963 - '000 \$		COMPOSITION in %		Deviation from 'normal'
	observed	'normal'	observed	'normal'	
1. Food, Beverages and Tobacco	11.387	28.500	21.9	54.8	-32.9
2. Textiles	32.473	6.218	62.5	12.1	50.4
3. Clothing and Footwear	404	3.766	0.8	7.2	- 6.4
4. Wood products	2.188	2.191	4.2	4.2	-
5. Paper and paper products	-	-	-	-	-
6. Printing and Publishing	954	123	1.8	0.2	1.6
7. Leather products	-	-	-	-	-
8. Rubber products	102	-	0.2	-	0.2
9. Chemicals and Petroleum Coal products	411	4.152	0.8	8.0	- 7.2
10. Non metallic mineral products	170	4.433	0.3	8.5	- 8.2
11. Basic metals	-	-	-	-	-
12. Metal products	496	2.609	1.0	5.0	- 4.0
13. Other manufactur- ing	3.407	-	6.5	-	6.5
TOTAL, manufacturing	51.992	51.992	100.0	100.0	117.4

$$V_0 = \text{US } \$ 93.090$$

$$D = 0.5585$$

Stoutjesdijk

TABLE V
UGANDA

SECTOR	VALUE ADDED in 1963 - '000 £		COMPOSITION in %		Deviation from 'normal'
	observed	'normal'	observed	'normal'	
1. Food, Beverages and tobacco	22.441	25.777	49.1	56.4	- 7.3
2. Textiles	} 11.807	4.972	} 25.9	10.9	} 7.7
3. Clothing and Footwear		3.345		7.3	
4. Wood products	1.609	1.959	3.5	4.3	- 0.8
5. Paper and paper products	-	-	-	-	-
6. Printing and Publishing	989	-	2.2	-	2.2
7. Leather products	-	-	-	-	-
8. Rubber products	596	-	1.3	-	1.3
9. Chemicals and Petroleum Coal products	1.319	3.159	2.9	6.9	- 4.0
10. Non metallic mineral products	2.133	4.001	4.7	8.8	- 4.1
11. Basic metals	} 4.780	-	} 10.4	-	} 5.0
12. Metal products		2.461		5.4	
13. Other manufactur- ing	-	-	-	-	-
TOTAL, manufacturing	45.674	45.674	100.0	100.0	32.4

$V_0 = \text{US } \$ 69.100$

$D = 0.6605$

TABLE VI

EAST AFRICA (as arithmetical sum of three separate countries, excluding Zanzibar)

S E C T O R	VALUE ADDED in 1963 - '000 ₤		COMPOSITION in %		Deviation from 'normal'
	observed	'normal'	observed	'normal'	
1. Food, Beverages and Tobacco	63.603	94.783	35.8	53.4	- 17.6
2. Textiles	} 50.953	20.222	} 28.7	11.4	} 10.1
3. Clothing and Footwear		12.867		7.2	
4. Wood products	7.952	7.712	4.5	4.3	0.2
5. Paper and paper products	1.789	-	1.0	-	1.0
6. Printing and publishing	8.173	2.127	4.6	1.2	3.4
7. Leather products	580	1.813	0.3	1.0	- 0.7
8. Rubber products	1.227	-	0.7	-	0.7
9. Chemicals and Petroleum Coal products	12.882	13.381	7.2	7.5	- 0.3
10. Non metallic mineral products	7.578	15.262	4.3	8.6	- 4.3
11. Basic metals	} 18.674	-	} 10.5	-	} 5.1
12. Metal products		9.527		5.4	
13. Other manufacturing	4.283	-	2.4	-	2.4
TOTAL, MANUFACTURING	177.694	177.694	100.0	100.0	45.8

$$V_0 = \text{US } \text{₤} \ 274.200$$

$$D = 0.6480$$

TABLE VII

EAST AFRICA AS A REGION, EXCLUDING ZANZIBAR

S E C T O R	VALUE ADDED in 1963 - '000 \$		COMPOSITION in %		Deviation from 'normal'
	observed	'normal'	observed	'normal'	
1. Food, Beverages and Tobacco	63.603	74.344	35.8	41.8	- 6.0
2. Textiles	} 50.953	26.124	} 28.7	14.7	} 7.7
3. Clothing and Footwear		11.192		6.3	
4. Wood products	7.952	7.100	4.5	4.0	0.5
5. Paper and paper products	1.789	-	1.0	-	1.0
6. Printing and publishing	8.173	4.055	4.6	2.3	2.3
7. Leather products	580	3.577	0.3	2.0	- 1.7
8. Rubber products	1.227	2.952	0.7	1.7	- 1.0
9. Chemicals and petroleum coal products	12.882	18.972	7.2	10.7	- 3.5
10. Non metallic mineral products	7.578	13.741	4.3	7.7	- 3.4
11. Basic metals	} 18.674	1.932	} 10.5	1.1	} 2.7
12. Metal products		11.836		6.7	
13. Other manufactur- ing	4.283	1.869	2.4	1.0	1.4
TOTAL, manufactur- ing	177.694	177.694	100.0	100.0	31.2

$$V_0 = \text{US } \$ 305.200$$

$$D = 0.5822$$

TABLE IX

'NORMAL' VALUE ADDED IN 1970: KENYA

S E C T O R	US \$ '000		
	VALUE ADDED 'NORMAL' IN 1970	VALUE ADDED OBSERVED IN 1963	Implicit growth rate 1963-'70 (compound)
1.Food etc.	53.019	29.775	8.6
2.Textiles	13.296	3.130	22.9
3.Clothing	8.027	3.139	14.4
4.Wood	5.126	4.155	3.0
5.Paper	-	1.789	(-)
6.Printing	2.964	6.230	(-11.2)
7.Leaner	2.339	580	22.0
8.Rubber	1.667	529	17.9
9.Chemicals	9.468	11.152	(- 2.3)
10.N.met.min.prod.	9.360	5.275	8.6
11.Basic metals	1.355	-	(-)
12.Metal products	8.278	13.398	(- 7.1)
13.Other	-	876	(-)

TOTAL, MANUFACTURING	114.900	80.028	5.3

Note to table IX.

The growth rates given indicate the sectoral rates of growth required to attain the 'normal' composition of manufacturing output, given the level of industrialisation. This is the reason why the resulting overall rate of growth of manufacturing is the same as the one given in the development plan.

TABLE X

'NORMAL' VALUE ADDED IN 1970: UGANDA

			US \$'000
S E C T O R	VALUE ADDED 'NORMAL' IN 1970	VALUE ADDED OBSERVED IN 1963	Implicit growth rate 1963-'70 (compound)
1. Food etc.	38.008	22.441	7.8
2. Textiles	8.300	} 11.807	} 2.3
3. Clothing	5.370		
4. Wood	3.305	1.609	10.9
5. Paper	-	-	-
6. Printing	1.865	989	9.5
7. Leather	1.690	-	(-)
8. Rubber	-	596	(-)
9. Chemicals	5.584	1.319	22.8
10. N.met.min.prod.	6.326	2.133	16.8
11. Basic metals	-	} 4.780	} (-0.1)
12. Metal products	4.732		
13. Other	-	-	-
<hr style="border-top: 1px dashed black;"/>			
TOTAL, manufacturing	75.674	45.674	7.4

See note to table IX

TABLE XI

COMPARISON OF 'NORMAL' AND 'PLAN' IN 1970: TANGANYIKA

US \$ '000

S E C T O R	'NORMAL' VALUE ADDED	%	'PLAN' VALUE ADDED	%
1. Food etc	49.388	47.8	39.706	38.2
2. Textiles, clothing leather	21.736	21.0	34.908	33.7
3. Wood and paper	6.949	6.7	5.964	5.8
4. Chemicals and rubber	9.862	9.5	6.076	5.9
5. Non-met.min.prod.	8.609	8.3	3.696	3.6
6. Metals	7.022	6.7	13.216	12.8
TOTAL, manufacturing	103.566	100.0	103.566	100.0

TABLE XII

'NORMAL' VALUE ADDED IN 1970: TANGANYIKA

US \$ '000

S E C T O R	VALUE ADDED 'NORMAL' in 1970	VALUE ADDED OBSERVED in 1963	Implicit growth rate 1963-'70 (compound)
1. Food etc.	49.388	11.387	23.3
2. Textiles	12.324	32.473	(-15.1)
3. Clothing	7.178	404	50.9
4. Wood	4.509	2.188	10.9
5. Paper	-	-	-
6. Printing	2.440	954	14.4
7. Leather	2.234	-	(-)
8. Rubber	1.426	102	45.7
9. Chemicals	8.436	411	49.0
10. N.met.min.prod.	8.609	170	75.2
11. Basic metals	-	-	-
12. Metal products	7.022	496	46.0
13. Other	-	3.407	(-)
TOTAL, MANUFACTURING	103.566	51.992	10.4

Notes to table XII: 1. See note to table I.

2. The overall rate of growth of manufacturing differs from the plan-rate of growth (14.8) because of a different classification, see page 7.

TABLE XIII

'NORMAL' VALUE ADDED IN 1970: EAST AFRICA, Arithm. sum

S E C T O R	US \$ '000		
	VALUE ADDED 'NORMAL' IN 1970	VALUE ADDED OBSERVED IN 1963	Implicit growth rate 1963-'70 (compound)
1. Food etc.	140.415	63.603	11.9
2. Textiles	33.920	} 50.953	} 0.1
3. Clothing	20.575		
4. Wood	12.940	7.952	7.2
5. Paper	-	1.789	(-)
6. Printing	7.269	8.173	(-1.7)
7. Leather	6.263	580	40.5
8. Rubber	3.093	1.227	14.1
9. Chemicals	23.488	12.882	9.0
10. N.met.min.prod.	24.295	7.578	18.1
11. Basic metals	1.355	} 18.674	} 2.0
12. Metal products	20.032		
13. Other	-	4.283	(-)

TOTAL, MANUFACTURING	293.645	177.694	7.5

See note to table IX

TABLE XIV

'NORMAL' VALUE ADDED IN 1970: EAST AFRICA AS A REGION

			US \$ '000
S E C T O R	VALUE ADDED 'NORMAL' in 1970	VALUE ADDED OBSERVED in 1963	Implicit growth rate 1963-'70 (compound)
1. Food etc.	111.560	63.603	8.3
2. Textiles	44.276	} 50.953	} 3.0
3. Clothing	18.230		
4. Wood	12.127	7.952	6.2
5. Paper	2.088	1.789	2.2
6. Printing	7.113	8.173	(-2.0)
7. Leather	4.679	580	34.8
8. Rubber	5.035	1.227	19.6
9. Chemicals	33.997	12.882	14.9
10. N.met.min.prod.	22.088	7.578	16.5
11. Basic metals	5.249	} 18.674	} 6.4
12. Metal products	23.644		
13. Other	3.559	4.283	(-2.7)
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TOTAL, MANUFACTURING	293.645	177.694	7.5

See note to table IX.

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