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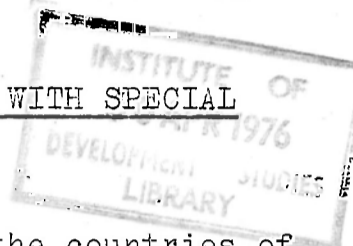
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SOME THOUGHTS ON INVESTMENT IN EDUCATION WITH SPECIAL
REFERENCE TO EAST AFRICA.



Since the stock of educated manpower in the countries of East Africa is so small, anyone who suggests that there is a need for expansion of facilities in all levels of the educational pipe line cannot be wrong. Yet the statement is trite, what policy makers would want are some principles to guide them in the distribution of resources between different channels of investment on one hand and between different levels of education, primary, secondary technical and higher on the other. They would also wish to be guided on the means of raising finance for education.

This paper which is a part of a study of 'Economics of education in Kenya' tries to sort out some conceptual problems in section I; compares some information on investment in education in E.A. countries in Section II; discusses development of primary education in Kenya in Section III and concludes with general remarks on education and growth in Section IV.

I

When economist discuss problems of education investment in advanced countries they seem to agree on the need for some universal minimum education. On this Professor Friedman [10] argues that a stable and democratic society cannot exist unless the people accept a common set of values. These values can only be inculcated when a minimum degree of literacy and knowledge exists on the part of most citizens. Because education stabilizes society it (education) confers important external benefits to society. Friedman suggests that the government should require that each child receive a minimum amount of education of a specific kind and that such requirements could be done simply by a government edict.¹

A slightly different argument by advocates of minimum universal education is based on equity. It is said that an otherwise gifted child who happens to be born of poor parents should not be constrained by lack of finance from acquiring an education. It should be noted in this connection that there is no known way of selecting the most gifted children unless all children are exposed to education for some years. Discussion of universal education in advanced countries

is somewhat academic since the principle is accepted in most of these countries and the majority of them are providing compulsory primary education.

When discussion turns to poor developing countries 'growth-manship' takes over. Priority in education investment should be given to the sector of education which is most conducive to economic growth, it is argued. If there is any validity in Friedman's 'Stability' argument for basic education - and I have not seen any refutation of it - one would have thought developing countries need this type of education above everything else. Economists who have discussed investment in education have either denied that expenditure for primary education is investment at all (eg Arthur Lewis as quoted in Seers [21]), others have asserts that primary education is a low priority investment without bothering to spell out evidence for their views.² Identification of secondary education a high priority investment is tied up with manpower needs for development. Manpower problems are discussed elsewhere in this study.³

In trying to sort out motives for the great emphasis on development of high level manpower at virtual neglect of primary school education, one need not put the whole blame on class interest on the part of foreign economic advisers and their domestic counterparts. Two eminent American Marxists, Paul Baran and Paul Sweezy [1] concede that under given circumstances selective education might be inevitable, to unit "we do not suggest that severe selectivity and even programs for so-called gifted children may not be indicated under certain circumstances. Thus a poor society, just emerging from the state of backwardness, may be unable to afford high quality mass education." - Footnote p.333 But this cannot be read as a blanket endorsement of privileged education. The authors were mainly concerned with giving a critical appraisal of the American educational system and their main argument is concerned with indictment of elitist type of education.

The one crucial assumption left out in all discussion of investment in education based on less than universal primary education is the method of selection of the 50% or 60% or any other percentage of the children to be given education. It is important that selection criteria be made explicit so that people become aware of the type of society being envisaged by manpower planners.

So far we have been talking of education as if all education was investment. It is not. Though we object to Arthur Lewis assertion that primary education is consumption education and the rest investment education we recognize at least conceptually an element of consumption in all forms of education. It has been said that students derive some pleasure in the process of getting an education⁴. But there certainly are other students who regard the process of education as a painful activity - a process which should be avoided at all costs.

prepare themselves for a career. Another way of looking at the consumption aspect of education is from the parents' side. Parents derive pleasure when they have children in high school or college. Peacock and Wiseman [19] are skeptical of the above views of consumption education but their problem is statistical rather than conceptual. They argue that there is practically no way of separating consumption from investment education. Two other examples will suffice to show that there is some element of consumption in education. Mothers of small children can send them to school or employ babysitters to mind them⁵. Some women attend some educational institutions with the primary purpose of filling up the time before they are old enough to make homes.

There is yet another attribute of education which is sometimes discussed under consumption but as Musgrave [15] suggests it should be regarded essentially as investment. Education prepares students not only to become future efficient producers but also efficient future consumers especially of leisure time. This aspect of education Musgrave and others have argued should be put in the same class of consumer durables as houses etc. I think it would be correct to argue that this aspect of education should not be given same priority as production education - but it is not possible to separate the two; and for this reason it seems logical to treat all education as investment education as Seers and Jolly [21] have done⁶.

Two polar views of investment in education have been discussed by Friedman [10] and Edding [8]. Assuming a Society that takes freedom of individual families as the ultimate objective Friedman argues that investment in Vocational and Professional education should be treated as investment in human capital precisely analogous to investment in machinery, buildings or other forms of non-human capital - the purpose in all these forms of investment is to raise economic productivity of the asset.

After discussing the main costs involved in both human and non-human capital Friedman states that if Capital was as readily available in educational investment as it were in physical capital, return on either would tend towards equality. But investment in human capital is more risky than investment in physical capital because return depends on cooperation of the individual in whom the capital is invested. Human capital is also less secure because the asset cannot be sold to recover at least a part of the investment. To counteract these imperfections of the capital market it is suggested that government intervention can come in, in the form of subsidy out of general revenue. Vickery [24] discusses an interesting proposal for student loans which will be taken up below.

In a socialist economy all education is financed by the state. Students in the higher levels of learning are paid wages because according to Edding, students are regarded as any workers engaged in capital building. In this non-market situation optimal investment would only be constrained by the ignorance of planners regarding the future needs of society.

It is to be expected that differential productivity brought about by investment in human capital will be reflected in higher earnings for individuals who get more education. In a Capitalist economy where individuals or their families financed the education, part of the higher earnings can be regarded as return on this capital. Earned income differentials in a socialist economy where investment is done by the state are more difficult to explain. Here, either we have to accept that in a Socialist Society workers are allowed to appropriate rent of ability or we have to fall back on 'material incentives' argument which is the same as payment according to work done.

East Africa like most economies falls somewhere in between a pure capitalistic model and a pure socialist model⁷. It has the socialistic element in that higher levels of education are almost wholly financed by the state and differentials in earnings which are said to be relatively greater than in some advanced countries⁸ are even more difficult to explain than differentials in socialist countries. And because individuals or families contribute so little towards the finance of this education (perhaps opportunity cost is an important element) these differentials should not be appropriated by individuals as return on capital. Maybe we have to contend in the East African case with the uncomfortable conclusion that income differentials reflect an appropriation by the educated minority of society's capital invested in these minorities.

Moving away from the pure capitalist and the pure socialist models we come to the less neat real world where finance for all forms of education come from a variety of sources. These include individuals financing their own education, Parents generally finance education of their children in high schools and increasingly the state is taking over finance of education in primary schools. Private colleges get part of their finance from the state, part from business corporations and an increasingly small part from students tuition fees.

Faced with this multitude of sources of finance policy makers have a difficult time in even trying to work out the quantity of resources being devoted to education at any particular time let alone planning for the future. Sometimes it has been suggested that ^{the} greater the variety of sources the greater the chance that more education will be provided; while this may be so attempts to work out a rational basis for distributing the burden of providing education for economic growth are made that much harder.

Peacock and Wiseman [19] argue that what is needed is a study which would set out to discover marginal social cost-benefit ratios for all relevant types of investment in education. Then compare these with similar ratios for other forms of (human and physical) investment and on this basis propose financial arrangements that would adjust the allocation of resources between uses in a fashion that brought the ratios to equality. The ideal cannot be realized for the difficulties noted above and perhaps also because no society is at present prepared to treat economic growth as the sole objective of policy in educational development.

To end this section on concepts we will take up Vickery's proposal for student aid (24). Though the proposal is not strictly a conceptual problem, from what has been said earlier on the finance of higher education in East Africa we think it is legitimate to discuss some form of private finance of education. East Africa will sooner or later have to decide whether to finance higher education on private basis or change its wage and salary structure rather drastically.

The classical individualistic economic answer to the problem of shortage of finance for education, Vickery states, would be to arrange for loans to individuals who show such promise that it is reasonably certain that investment in their further education would be an investment capable of yielding at least the normal rate of return on comparable risky investment.

The main difficulty with student loans is that few students are prepared to mortgage their future. Though attempts have been made¹⁰ to show that on the average students additional earning power generated by better education can by itself take care of this added burden with a wide margin, individual students, due to the normal ignorance and uncertainty about the future, may be unimpressed by these average calculations. Potential lenders as has been mentioned before are reluctant to make investment in assets with such high risks and where arrangements for enforcing claims for repayment over a long period of years could be potentially costly. It is of small comfort to potential lenders that absconders can ultimately be put in prison.

Where loans are available on a subsidized basis (lower interest rates than going market rates) an atmosphere of philanthropy is introduced which does not do much good to students' self pride. Also the low interest rates tend to limit the availability of funds - and from this; funds are strictly rationed. The method used in this system of rationing tends to fix charity stigma the more firmly.

To remove philanthropic stigma the Vickery plan would have funds made available to students in liberal amounts in return for an agreement to return dividends computed as a share of later earnings according to the concept of income taxation. Exemption and the rate scale would be arranged in such a way that dividends are paid actually from returns on the education financed by the investment. For example an agreement to finance university education in East Africa would set the exemption at say £400 p.a. this being the expected average salary of a potential university students who went no further than secondary school. Earning dividend schedules should be arranged in such a way that they do not place an unbearable burden on the graduate but high enough to attract potential investors in the scheme and to generate internal funds for self financing of the scheme in later years. It could also be arranged that when graduates have paid off their loans they could become investors in the scheme.

Since the scheme has an element of risk pooling (the more a graduate earners above the exempted amount the more he pays to the fund) it could attract more of the less able students ie those students who fear that their future income prospects are below average. To protect the scheme from this undesirable feature a system of risk rating procedure would have to be instituted. Performance in school and other evidence of educational potential would be used for this exercise.

The main advantage of the scheme is that it gives the student a greater degree of freedom in the choice of subjects he wishes to study.

II

There are two broad methods of assessing a nation's efforts in educational investment. The difficulties associated with the two criteria are examined before the data are assessed. The first method compares enrolment figures in different sectors of education. If country A has 100 children in primary school sector per 1000 population it has done better than a second country which has only 80 or 90 such children in its primary schools. The second method looks at the proportion of G.D.P. an economy devotes to the development of its educational system.

An attempt to evaluate the achievement of different countries in the field of investment in education is made difficult by the following reasons.

1. Enrolment figures in different sectors of the educational system will be incomparable if qualifications of teachers are different and the products of different sectors will be incomparable if the time of learning in these sectors are also

different ie if the teachers in one country's primary schools are high school graduates and in another the teachers are primary school graduates it is to be expected that children in the former country will receive better education; similarly products of an eight year primary education course will be better educated than those of a seven year course other things being equal.

2. Government expenditure on education as a percentage of GDP, the other criterion of investment effort, sometimes used has its own problems. When unit costs in one country are drastically different from unit costs in a second country the final products will be smaller in the more expensive country and hence expenditure levels will be a poor indicator of comparative effort. For instance Arthur Lewis [13] tells us that a primary school teacher cost U.S. $1\frac{1}{2}$ times per capita GNP; Jamaica 3 times, Ghana 5 and Nigeria 7 times. This means that a given proportion of GNP will educate more children in U.S. than in Jamaica etc. A related problem is that if in one Country education, especially secondary sector, is residential and in a second country it is non residential costs in the first country will be higher than in the second and again relative GNP expenditure will not reflect effort in terms of numbers of children educated.

Figures given below for educational outlays (assumed) for different parts of the third world illustrate the differential structure of costs, discussed above.

Assumed Standard cost data for 1975
(in US Dollars.)

Region	Recurrent per pupil expenditure			Non recurrent per pupil expenditure		
	First Level	Second Level	Third Level	1st.	2nd.	3rd.
Africa	30	250	1000	60	500	4000
L. America	30	250	600	65	300	1200
Asia (ex India)	30	200	400	50	300	1200
India	20	200	400	50	300	1000

Source: Netherlands Economic Institute [17]

what is immediately noticeable from this table is that both recurrent and capital costs in the third level in Africa are much higher than in the other countries of the third world. Since these are unit costs and it is known that third level education is less developed in Africa than in the other continents it might be presumed that there are economies of scale which Africa is yet to take advantage of. It might also be the case that building standards in the third level in Africa are unnecessarily too high.

In spite of the rather wide global differences we should expect the structure of costs in the East African Countries under discussion to show smaller differences especially since most of these countries have developed the structures of their education on the British model (most of them were under British colonial rule). Appendix tables I and II give (some-what dated) figures which show the two aspects of educational endeavour. There are some gaps in the figures but it is hoped they can at least give orders of magnitude of the efforts being made in different countries.

Examining data contained in Appendix Table I several general comments can be made. Uganda and Sudan were the only two of the countries whose GDP figures were available, which had attained a 5% GDP¹² expenditure on education. To this extent other countries were not doing as much as they could towards investment in education. Since it is known that the desire for education is quite intense in these countries the question arises as to the reasons which make it difficult for governments to achieve this desirable rate of expenditure. A possible explanation is that these government do not possess an efficient machinery for collecting revenue. In this case it is only Malawi and Sudan which managed to collect approximately a quarter of GDP in the form of government revenue. But the rates of increase (Table I b) with a few perverse cases point to the right direction. That is, the rate of increases in both government expenditure and government expenditure in education are higher than the rates of increase in GDP. In ordinary cases it may not be desirable for an economic sector to grow faster than G.D.P. but in this case where we think the governments should appropriate a greater proportion of GDP for its use and especially for investment in education the trend is a desirable one.

Before we examine data in appendix table on enrolments in different sectors of different countries the recommendations of the 1961 Conference of African States on the development of education in Africa are set down.¹³

The principle assumptions in the final report were

(a) all countries should aim at providing Fee-free primary education, lasting six years, for all children of school age by 1980.

(b) that 30% of all primary school pupils would find places in schools at the secondary level.

(c) that for most children education at the secondary level would last 3 years, provision being made for one-third to complete a full six-year course in the secondary school, and one sixth of those taking other forms of post primary education to continue their training for six years.

(d) of the pupils completing secondary education, it is assumed that 20% will go to the higher level of education.

The actual short run strategy 1961-1966 to make sure that bottlenecks do not develop to frustrate the long term aims, was as follows:

(a) Each country should aim to increase enrolments each year for primary education by an additional 5% of the beginning age group.

(b) The main emphasis should fall on the expansion of secondary level education which produces the specialized manpower basic to economic development, the cadres for higher education institutions and the teachers to instruct the new millions of primary school pupils.

(c) Higher education should be expanded proportionate to needs of the secondary schools programmes.

In view of the high rate of illiteracy and the insufficiency of schools, the African states should accord special importance to adult education and the activities of youth.

These strategy recommendations other than the first one which indicates a quantitative rate of the primary sector are in the form of guide lines and it is difficult to say when they are not being followed. The recommendation on higher education seems to suggest that higher education exists solely for the production of secondary school teachers. The members of the conference must have been aware that university graduates are needed in other sectors of the economy.

A problem which the conference seems to have ignored is the question of supply of secondary school teachers. For the sector to grow at an accelerated rate teachers must be found before expansion can take place. If the higher education sector is not to expand ahead of the secondary sector (and this is constrained by a supply of qualified students from secondary schools) the only alternative remaining is to employ foreign teachers and or less qualified teachers. Sources of supply which East African Countries could tap with cost advantage are West Africa Egypt and India. It is possible that Sudan makes use of Egyptian supply but the other countries of this region more often than not turn to the expensive British and American supply possibly because of tradition and prejudice and perhaps more importantly teachers come in some form of foreign aid deal.

During the period under consideration primary school enrolments in the East African Countries have been increasing at annual rates ranging from 2% (Malawi) to about 19% (Somalia), if the conference's 5% rate has to be complied with it means most countries would have to reduce these rates. Neither the conference nor any other person who has suggested a curtailment of the rapid rate of increase in primary education has suggested concrete means of how this is to be done.

Secondary education which the conference expected to be given special emphasis had been growing at an extremely vigorous rate

especially in Tanganyika (68%) and Kenya (60%). It is to be questioned whether at least these two countries could sustain this rate (Subject to the teacher constrained mentioned above) let alone increase the rate.

It is to be noted that in all countries the rate of increase in technical education was lower than rates in other sectors of education. It has often been asserted that the greatest manpower shortage is to be found in the skilled jobs categories and one would have expected that technical schools produced these badly needed technicians. But for reasons not immediately clear to the writer technical education is not given the push it obviously would need nor surprisingly enough have graduates of technical school found it easy to secure suitable employment.

Though it may be neither a valid nor a useful exercise to engage in comparative performance base on incomplete data a ranking table has been presented here for what it is worth.

Ranking of East African Countries Education
Performance using different criteria.

Country	Expenditure in Education as % GDP	Rate of Growth in Education Exp. %	Rates of Growth in Enrolments %		
			Primary	Secondary	Technical
Ethiopia		7	2	3 =	2
Kenya	5	5	3	2	3
Zambia	5	4	6	3 =	5
Somalia		3	1	7	6
Malawi	6	2	7	3	7
Sudan	2	1			
Tanganyika	4	6	4	1	1
Uganda	1	3	5	5	4

Source Appendix Tables I and II

A tentative conclusion from this table would be that Ethiopia Kenya and Tanganyika have done slightly better than other countries in overall expansion of education. The Ethiopia case could be explained by the fact that she started off from a very narrow base and it is the property of average rates of growth that when you start from a narrow base the rates tend to exaggerate quantitative performance. This applies also when we compare the performances of Kenya Tanganyika and Uganda. The Secondary sector of Uganda was more developed than the sectors of the other two countries and though quantitatively the other two countries did better than Uganda in the period (21,000 & 15,000 against Uganda's 10,000) percentages give a more exaggerated picture of differences.

III

Kenya Government has accepted the desirability of providing some form of education to all children in the nation. However the Government has refused to commit itself to a quantitative program of instituting universal free and compulsory primary education.

It could be argued that if the government committed itself to compulsory education by a certain date and then failed to reach the set goal people would be disappointed, and in turn this would reduce their confidence in the government. This need not follow; in the first place a clear statement of policy on this subject which is of considerable interest to the majority of the population would have the effect of lifting morale and in the second place the government would have made a careful calculation of costs involved so as to make the statement of policy realistic. This part of the paper starts with a discussion of some obstacles to universal primary education in Kenya, takes up the problems of regional inequalities in educational opportunities and argues the case for universal education.

There are serious obstacles to compulsory education in this country. These will be discussed before a positive case for compulsory education is argued. We should note at the outset that compulsory education came about in present developed countries, not as a result of sophisticated economic arguments, but governments were pressured into it by interested groups especially trade unions.

Compulsory education in this country would mean that the Government would have to find many more teachers; it would have to build many more school rooms and would have to force the few ignorant or misguided parents to send their children to school. Above all it would lose the not inconsiderable revenue it now gets from school fees.

The loss of fee revenue to the government is not a cost to the economy. The government would have to get the same revenue from general taxation. This point is discussed in more detail below.

A major obstacle to expansion of education in Kenya is the structure of the country's population. Most people live in the rural areas where population density is low. Large schools which are known to minimize unit costs are infeasible because children would have to walk long distances. The problem is much more serious with nomadic tribes.

Another major obstacle is the conservatism of Kenya's educational system. The fear often expressed that a rapid expansion of education would lower standards has been discussed elsewhere in this study,¹⁵ Here we need only note that when views of this kind are held by influential people, expansion of education; through use of non-conventional methods of teaching and/or drastic reforms in the curriculum; is made that much more difficult.¹⁶

Kenya's educational system is patterned on the British model, with the unfortunate exception that new innovations in Britain have a long time lag before they are adopted in Kenya.¹⁷ One of the traditions inherited from British administration which should be reconsidered in present Kenya is the boarding school institution. Boarding schools isolate young children from village life, they instill a 'ruler' mentality in the children and are an unnecessary drain on poor countries' resources. This last point is relevant to expansion of primary education from the presumption that if less money was used in the secondary sector more would be available for primary school education.

It was noted above that governments in developed countries were driven to institute compulsory education by pressure from private organizations especially trade unions. It might be unfair to state categorically that Kenya trade unions are uninterested in social activities of this nature but it would not be far off the mark to suggest that Kenya unions are more of business type unions than reformist type. It might be that society as a whole has been convinced that compulsory education need not be given first priority in development or that society as a whole has not found any medium of expressing its priorities.

Where education is compulsory it means that society has accepted that education is a social good and that it cannot be rationed by the price system. In the half-way house where education is partly subsidized by the state and partly financed through school fees serious problems of equity are involved. Because people are forced to pay taxes; to the extent that part of revenue from these taxes is used to finance education, parents who cannot or will not pay school fees (i.e. withdraw their children from school) may be subsidizing the education of the other children. This argument cannot be pushed too far since its logical conclusion is that taxes should be based on benefits reaped by the taxpayer - a principle of taxation which can be shown to be undesirable or unworkable. But the practical consequences of the half-way house type of education system is that the ignorant and poorer sections of the community subsidize the well informed and the richer members of the community. The other problem involved in the Kenya Educational system as it stands to-day is that the community as a whole fails to tap its potential ability.

The inequalities in educational opportunities have so far been discussed with reference to individual economic differences. The analysis can be extended to cover regional differences in the same country i.e. problems arise when different regions finance their own education and some regions because they are willing or richer expand education in these regions faster than in other regions. Here there

is no question of the poorer regions subsidizing the richer regions, but the case falls into the general problem of whether in the same country it is desirable that one region should grow much faster than another region. Perhaps a case can be built for the richer region to subsidize the poor region.

A schematic sketch will perhaps make the problems raised in the above paragraphs clearer.

EDUCATIONAL DEVELOPMENT

Social Sectors	Educational Levels		
	1	2	3
1	a11*	a12	a13
2	a21	a22	a23
3	a31	a32	a33
4	a41	a42	a43
5	a51	a52	a53

For our analysis we can identify educational level (1) as primary education, level (2) as secondary education and level (3) as higher education. Social sectors could be regarded as social classes in a country or they could be regarded as different regions in the same country.

A country which has instituted universal free primary education for all its citizens will have $a_{11} = a_{21} = a_{31} = a_{41} = a_{51}$ and this will be near 100% of all the primary school age children. In a society where primary education is partly financed by school fees and partly by public funds if we assume that social sector 1 is richer than sector 2 and 2 is richer than 3 etc. we should expect the following inequality to be true.

$a_{11} > a_{21} > a_{31} > a_{41} > a_{51}$. This will be so because the richer society will be more able to afford school fees. The conclusion holds true where the social sectors are regions and region 1 is the richest and region 5 the poorest.

If the second and the higher levels of education are socially financed and the criteria for entry into them is not based on ability to pay we should expect equality in the relevant cells of the matrix above. Each level of education will be a certain proportion of the earlier level. In a country where ability to pay school fees is part of the qualification for entry into higher levels of education it is to be expected that inequalities shown above will hold for all levels.¹⁸

Now the question that arises is what a newly independent country which inherits an educational system characterized by inequalities in educational opportunities should do. The easiest way out is for

* a_{11} Relevant proportion of children in social Sector (1) attending education level (1)

the new government to allow itself to be pushed by parents and pupils to expand education according to demand. In this way inequalities will be perpetuated and in some cases may be increased. The table below depicts regional distribution of primary education in Kenya in 1964.

Enrolment by Province in 1964 Related to Child
Population in the Age-Group 7-13 yr.

1 Province	2 Child Population '000	3 Enrolment '000	4 Percentage enrolment (Column 3÷2)
1 Central	265.9	250.0	94.0
2 Coast	120.3	55.1	45.8
3 Eastern	337.4	166.9	49.5
4 Nairobi	29.0	39.8	137.3
5 Nyanza	354.1	193.7	54.7
6 North Eastern	44.8	0.9	2.1
7 Rift Valley	373.7	144.2	38.6
8 Western	232.5	164.2	70.6
Whole Country	1,757.7	1,014.8	57.7

* Source Kenya Education Commission Report Part II Page 9.

There are several limitations to a rigorous analysis of information contained in this table. Information on distribution of wealth and income by provinces which might help to explain this unequal growth of educational opportunities is unavailable. The type of information contained in the table is not available in Ministry of Education Annual Reports for years prior to 1964. Hence we cannot say whether the trend is towards regional inequality or towards regional equality. Some of the gross disparities can be explained by the geography of the country. The North Eastern Province is inhabited by tribes who keep on moving from place to place with their herds. They do not form settled communities and hence providing schools for them is an especially difficult problem¹⁹. The Central and the Western provinces are regions of relatively high population density and foreign missionaries found these areas suitable for their activities.²⁰ The peculiar situation in Nairobi (where numbers enrolled are higher than children population of relevant age) is almost certainly a statistical problem. Many African people working in Nairobi leave their families in the African land areas but bring some of the older children to school in Nairobi where opportunities are greater.²¹

Since it is the case that talent cannot be discovered unless children go to school we must conclude that though Kenya has provided educational facilities for over 50% of the school age children there

is more wastage of talent in those regions where enrolment falls short of the national average. It might be argued that since parents pay school fees and local authorities also contribute towards this sector of education there is little transfer of funds from those areas with less educational opportunities to those areas of more educational opportunities. Nothing can be established without information on regional contribution towards central government revenue. But however this technical problem is solved the general problem of unequal educational development in the same country has to be faced.

The government can reduce the regional differentials in educational opportunities by channeling proportionately more of its expenditure to the less developed areas (regardless of the source of government revenue). This move should have the effect of raising the growth rate of educational opportunities in these areas and within some time period the gap would be narrowed. The government would perhaps have to contend with powerful political pressure from the developed areas which might see the government move as unnecessary subsidy of poor areas by the advanced areas.²²

It has been noted in several places in this study that one of the arguments put forward against too rapid expansion of primary education is the appearance in the Kenya labour market of unemployed primary school graduates. This group of job seekers should not be confused with the so called intellectual unemployment. What is not apparently clear to this writer is whether when this argument is brought forward it is suggested that unemployment of illiterates is preferable to unemployment of primary school graduates. One would have thought that though in the short run unemployed primary school graduates might be more difficult to contain they are more mobile and can move to where jobs might be found in different parts of the country, can more easily fit themselves to new surroundings and are more capable of creating jobs for themselves. This argument can be extended by stating that some education if it does any good at all increases the reasoning power of a given group which means that unemployed primary school graduates should be expected to behave less unreasonably than unemployed illiterates.

Now the analysis turns to what we shall term (for lack of appropriate term) a positive case for free compulsory primary education. One of the obvious advantages of compulsory primary education is that a nation is enabled to tap the potential ability in its population. It has been pointed out elsewhere in this study that there is an argument to the effect that when a country achieves a 50% enrolment of its children in primary schools then it can devote its remaining educational resources to expanding those sectors of education which have been identified as the bottlenecks to economic growth. We do not know the scientific base for this notion but it

must be clear that this argument is not valid for a country like Kenya where distribution of educational opportunities is so uneven (see table above). The argument for compulsory education should follow from the indisputable fact that a poor country like Kenya cannot afford to provide higher education for many of her children. So the proportion of the children which is privileged to acquire higher education should be that proportion which distinguishes itself from the rest of child population by its superior intellectual endowments. This is both fair and conducive to economic development.

Another main argument for compulsory education is an economic one. Since most of Kenya's producers are peasants it is clear that the country cannot develop unless these peasants are made more efficient producers. Simple and efficient methods of production such as selection of seeds, proper rotation of crops, efficient storage and distribution of produce can be introduced to peasants more easily if these peasants are able to read simple instructions. If it is objected that the argument above is for adult education rather than primary education, we cannot fully meet this criticism because we are aware that the quickest method of increasing output is to increase the efficiency of that proportion of the population which is in the labour force (the adults) but on a longer term basis the approach abolishing illiteracy by attacking the problem at the base lays a firm basis for progress. It would also be remembered that teaching adults is quite difficult because their prejudices have first to be overcome, they find it difficult to concentrate on education because of their many worries and the opportunity cost of withdrawing them from production activities for educational purposes can be quite considerable.²³

A benefit of sending all children to school which will progressively become of greater importance is freeing mothers for more productive work. At present when the opportunity cost of illiterate mothers minding children is perhaps quite low, the benefit is perhaps more apparent than real but as time goes and mothers acquire more education it will be the case that to the economy as a whole it will be cheaper to employ teachers to mind the children and let young mother return to the labour force.

Implementation of universal compulsory primary education program will of course cost the country more than the present cost of education. This means that the best strategy is to phase the program over a number of years. This phasing should follow an equitable criteria. It is not good enough to note that because the rate of increase in school enrolment is greater than the rate of increase in population universal primary education will come of itself without any further government planning. There are two objections to leaving

things as they are. Firstly the way the above growth rates are related would mean that universal primary education would not be achieved for several generations.²⁴ Secondly the present distribution of educational opportunities among the different regions of Kenya is terribly unfavourable to the poorer areas and since there is some relationship between educational development and economic development as a whole the poorer areas would lag behind the other areas. The phasing program should be arranged in such a way that those areas lagging behind should as has been mentioned before be made to grow faster by transferring resources from the advanced areas. If the consequent decreased rate of growth is unacceptable in the advanced areas these areas should be allowed to supplement state provided education by private schools. This concession would of course introduce complication in the educational system and make it a sub-optimal set up. But we think it is realistic because it is rather hard to convince a given community that it is to the best interests of the country that their children stay out of school while children in other areas catch up.

Now we shall take some space in discussion of the relationships of universal primary education and payment of school fees. Payment of school fees is a form of indirect taxation and for well known reasons regressive. This form of taxation is especially undesirable in education because in fact it is not the consumers of the commodity (children who get the education) who are taxed. Perhaps the main argument against financing education especially primary education by charging fees is that education has a large unspecified social benefit.

There are several points made for the legitimacy of charging school fees. It is said that so long as universal education is not a fact in the land those lucky ones who get places in school should meet a part of the cost of their education. This would be a reasonable argument if there was an independent criteria for admission into school. In the actual fact school fees become a barrier to entry which in effect means that it is only the children of parents able and willing to pay school fees who go to school. The exclusion function of school fees becomes operatively the more valid arguments for their retention and unless a more equitable criteria for admission of children in the first place is available it is difficult to see how school fees can be abolished.²⁵ The loss of government revenue argument which has often been invoked is not convincing. One can easily see that it is easier to extract money from parents when this is a condition for their children to get a place in school than to get the same amount in the form of general taxation. The point here is that by and large most people will pay less money when the tax is generalized and we think general taxation for education could

even be a more consistent benefits criteria of taxation than the fee system.²⁶ We are well aware of the difficulty of instituting direct taxation in a new society especially among peasants, but we think it is possible to think of an indirect taxation or special tax for education whose nonpayment need not result in exclusion of children from school. A special education tax has several advantages. Payers of the tax are aware that the resources are used for education and it is collected from the whole community of taxpayers (an advantage of general tax) - non-payment of the tax will result in the punishment of defaulter and not innocent children.

It would seem unrealistic to argue for institution of compulsory primary education at the same time criticize fee method of raising revenue and not put forward ways of meeting the cost. First we are convinced that the population of Kenya can be persuaded to pay higher taxes. Also we think Kenya teachers will be prepared to work with more untrained teachers to achieve this goal.

Presently Kenya primary education is organized on a seven year basis. It is not necessary for the goal of free and compulsory education that all primary education be made free in the same year. The scheme would start by making the first year of primary education free in year t and primary II free in year $t+1$ and so on till all primary education is free and compulsory by year $t+6$. There are, of course, practical problems which would have to be met in the first year. Older children who have been kept away from school by school fees would wish to come in and this would create a serious administrative problem. The scheme would also look discriminatory in the eyes of those parents who entered their children in school in year $t-1$ and would have to pay school fees for 6 years while parents of younger children were not subject to fee paying. These and many others would be temporary difficulties which would have to be solved in the actual situations.

If realistic estimates showed that Kenya will not be able to afford free seven year primary education in the period this would have to come about if the above phasing scheme was followed then as a first step a four or five year free primary course can be instituted.²⁷

Yet an alternative strategy of increasing enrolments without increasing costs proportionately is to increase pupil teacher ratios (increasing sizes of classes) instituting double shift especially in the lower classes (a saving on plant and teachers). Here of course greatest cooperation with the teaching profession is required.

IV*

Kenya requires a rapid growth of GDP. so as to be able to meet the bill for the urgently needed expansion in medical and educational facilities and to raise the population low standard of living i.e. to win the battle against disease, illiteracy and poverty. Rapid growth makes the pain (cost) of fighting this economic war less intolerable. Desirability of rapid economic growth is not in dispute among economist or others concerned with social progress, the problems arise in formulation of policies to bring about rapid economic growth. Here we shall be concerned with growth and education development but we shall start off the analysis by devoting some space on discussion of different growth concepts.

The commonest measure of economic growth is that of gross National Product or Gross Domestic Product.²⁸ (Goods and services produced in a specified period usually a year). If we represent this income by Y and if say it was Y_0 at the beginning of the period and Y_1 ($Y_1 > Y_0$) at end of the period then income has grown by the difference between Y_0 and Y_1 the rate of growth of income can be represented by $\frac{Y_1 - Y_0}{Y_0}$ or $\frac{\Delta Y}{Y_0}$. The greater the difference in incomes between the two periods the more the quantity of goods and services available for the population at the end of the period and the higher is the rate of growth of national product.

Economic growth can also be measured in per capita income. Again using Y to represent income we use P to represent population. At the beginning of the period $\frac{Y_0}{P_0}$ will represent per capita income and $\frac{Y_1}{P_1}$ per capital income at the end of the period. With this concept it need not follow that when Y_1 is greater than Y_0 there has been economic growth because population may have grown faster than income and hence making per capita income lower at the end of the period.²⁹ There is preference in literature for this concept of measuring economic growth but the basis of this preference is unclear.

A third measure of economic growth which is potentially very useful is to measure it in terms of quantities of goods and services available to individuals in the population. Using this concept we can say that economic growth has taken place in a period when during the period income has risen population has not risen faster than income and distribution of income has remained invariant.³⁰ Though this concept lays emphasis on personal distribution of income: distribution of income between different sectors of the economy seem relevant. The point here is that if income increases in the period, population does not increase proportionately faster than income (i.e. $\frac{Y_0}{P_0} < \frac{Y_1}{P_1}$) and personal distribution of income remained invariant the government may appropriate a greater proportion of income at the end of

the period than at the beginning and the actual quantity of goods and services available for individual outlays may have fallen. It is not apparently clear whether this state of affairs which might result in lower standards of living for the population (for example if the government uses its share of income in armaments and foreign adventures) is to be taken as economic growth.

A variation of the above concepts which should be of special interest to developing countries like Kenya is one which concerned itself with qualitative improvement in peoples standard of living. Granted the more refined or qualified the concept of measuring economic growth becomes the less useful operationally the concept becomes for quantitative analysis. But bearing in mind the scarcity of any continuous series of statistics (say for more than ten years) analysis of economic growth in developing countries could be more meaningful if more attention was devoted to qualitative analysis.

Education which makes the educated person not only a more efficient producer but also a more efficient consumer is obviously important in an economy which has only recently entered the modern world. The type of education we have in mind here is that type which makes the population conscious of the necessity for proper feeding, going to the hospital immediately after falling sick, proper rotation of crops, care in storing of produce after harvest, rational expenditure patterns and such simple tools of efficient production and consumption.³¹ It is not difficult to see the relationship between this type of education and economic growth in the more restricted sense (i.e. increase in G.D.P.). When people are enabled to make rational decisions they will so order their expenditures (of time and income) so as to become more efficient producer and this, of course, increases the national product.

The type of education which makes the population literate opens the population to new ideas. They can get information from newspapers and government propoganda bulletins.

Recently there has been concerted emphasis on the urgent need to improve agricultural production in developing countries. It is obviously paradoxical for a so called agricultural economy to import food.³² There are two basis for this drive towards improved agricultural production. One is based on the belief that developing countries have, in the language of international economics, comparative advantage in production of agricultural materials and will remain so for a long time. From this belief it follows naturally that improvement of agricultural production will increase the quantities of these goods exported and presumably the quantities of goods exchanged for the exports.³³ The second argument for improving agricultural production is based on the need to improve the living standards of

the population. There is some relationship between workers intake of calories and the output of whatever goods they are engaged in production. Ill-fed people are also known to be more susceptible to disease and this in turn reduces effort in production activities (also increases absenteeism). It will be seen that this second argument for improvement in agricultural production is based on home market. There is also what is now an accepted fact that a primarily agricultural country like Kenya can only increase its capital by improving productivity in agriculture so as to generate a surplus which might be appropriated for industrial investment.

The ideas discussed in the above paragraph strengthen the case for generalized education which makes people aware of the relationship between production and health and also simple rules of efficient production.

So far the discussion has been on what one may term labour problems in production. There is also the question of that specialized labour - entrepreneurship which is supposed to play a vital role in production. Whether entrepreneurs are a special class - Schumpeter's minority groups or whether they spring from the general population education will help in identifying these people and they in turn will be more successful when they work in a generally literate labour market.

In concluding this section on the role of primary education in economic growth it is worthwhile to note that in a developing peasant economy some of the assumptions - such as primary education is only a social goods - which might be reasonable in a developed economy are not so obvious. Though it has by no means been established that primary education plays or will play a vital role in economic growth in Kenya sufficient has been said we believe to show that that type of education can play a considerable role in social progress.

FOOTNOTES

1. Though Friedman states that social benefits are greatest on the lower levels of education and accepts government subsidy on this basis he is opposed to outright government provision of education.

2. See for example Prest [20]. Prest also argues that expenditure on adult education is a doubtful investment, though Professor Lewis [13] suggests that this type of expenditure is the quickest way of increasing production in the short run.

Professor Lewis view noted in the text is misleading or outright erroneous for the following reasons:

- (i) Primary education prepares children for a more enjoyable life. In this sense education expenditure is in the same category as expenditure for other durable consumer goods - houses, motor cars etc.
- (ii) Such fine separation of secondary and primary education are unhelpful because primary education is a prerequisite for secondary education.
- (iii) Friedman's "stability" argument is strongest for this level of education - i.e. this type of education is an important social investment.

Seers and Jolly [21] regard correctly I think all education as investment.

3. Muriithi W. "Equity and Growth conflict in educational planning" E.A. Academy Conference Makerere Sept. 1966.

4. For a description and careful evaluation of Consumption aspects of education see Inguar Suennilson "Targets for education in Europe in 1970"; OECD Conference on Economic Growth and Investment in Education. pp.22-23

5. It could also be said that if children were not kept in school society would have to employ more policemen to prevent children from engaging in unacceptable activities in the streets - in this sense the type of education would be social consumption.

6. If education is regarded as investment then any consumption which accrues to students or their parents in the process of education must be taken as a by product of zero cost. See Bowman [3].

7. The Socialist Model as described here is not so pure. Material incentives should not play a role in socialist production.

8. See a provocative paper by Dudley Seers, "The Transmission of inequality" PT/EC/1.

9. Income differentials in East Africa cannot be said to reflect rent of ability since without universal primary education it cannot be said that those who get to the higher levels of education are the most able or gifted members of the society.

FCOTNOTES (Continued)

10. See TW Schultz 'Investment in Human Capital' AER March 1961
11. Where non residential education is the rule government expenditure of course understates national effort because the outlays for feeding and clothing of the children by families is not counted.
12. 5% GDP expenditure is supposed to be average for most countries. Public expenditure on education in USA, UK, France and Canada all approximated to 5% in 1961. See Blot and Debeanvais 2
13. Figures in the tables are prior to this conference and hence the only valid comparison would be to see the type of changes the conference recommended other than what was taking place already. When figures are available an attempt will be made to see whether any of the East African Countries are making any attempts to comply with the recommendations of the Conference. Recommendations are taken from Burns 5
14. The problem of teachers for secondary schools for Kenya is examined elsewhere in this study.
15. Aspects of the Kenya Education Commission Report. EDRP 102.
16. The value of physical education (drill) to children who have some-times to run between one and two miles to school and back home is doubtful. Religion (Christianity) is taught in Kenya schools with apparent presumption that the thing is good for everybody.
17. It is not unusual to find text book in use in Kenya schools twenty years after their use has been dropped in Britain.
18. Even where ability to pay is not the criteria for entry into the higher level of education it is to be expected that children from the better off sectors of society will show superior performance in entry examinations and hence will be more represented in the higher levels of education. This follows from what has been established as the home factor in educational performance.
19. See Kenya Education Commission Report Part II for attempts to cope with the whole problem of regional inequality in educational opportunity.
20. Christian Missionaries were responsible for early educational work in Kenya. It is rather surprising that Nyanza Province is below average in enrolment.
21. The explanation given by the Education Commission that children leave their parents at home and come to stay with relatives in Nairobi is certainly wrong. The reverse is nearer the truth.
22. Government's move here can perhaps be justified on equity grounds and more importantly on long run political stability.

FOOTNOTES (Continued)

23. Opportunity cost in terms of alternative goods and services which the peasants would have produced can be reduced by arranging adult education classes to take places when production of goods and services activity is at low level e.g. dry period of year and evenings. But it is not clear whether peasants will accept reduction of their leisure - a commodity they may value quite highly.

24. See "Aspects of Kenya Education Commission Report" op.cit.

25. I have been toying with the idea of a rotary system to select the children who will be admitted in the free compulsory schools in the first instance but I realize a system of this type is administratively cumbersome to run and perhaps would increase temptation for corruption.

26. Though it is difficult to quantify the benefits society as a whole gets from education it is more dubious that parents reap any benefits when their children get an education. It is of course true that children who get education reap some private returns when they complete their education but it is not easy to see how these returns get to the parents except in the not too important case where parents are supported by their children during parents old age.

* This section of the paper draws heavily on Kuznets Economic Growth and Structure London 1965.

27. It is the belief of this writer that a four year free primary course is to be preferred to a seven year course given a fraction of the nation's children selected by ability to pay school fees criteria.

28. These two concepts are different. G.D.P. the concept used in Kenya accounts includes incomes earned in Kenya and paid to foreign countries and excludes incomes earned abroad and paid to Kenya. There is reason to believe that Kenya's G.D.P. is greater than her G.N.P. because there are many foreign companies operating in this country. The bulk of high level manpower - technical experts and top professionals are foreigners.

29. Neither apparently need a decrease of income in the period (i.e. $Y_0 > Y_1$) mean a negative economic growth because in the period population may have decreased proportionately faster than income making per capita income in the latter period greater than in the former period.

30. In the new welfare economics it is argued that even if distribution has changed but the gainers have gained enough to compensate the losers and have something remaining then there is some increase in total welfare. This argument is challenged on the grounds that so long as the compensation is not done the argument is of little value.

FOOTNOTES (Continued)

31. These points may look elementary but after seeing the repeated statements from political leaders trying to persuade the Kenya population to consume less beer and spend more of their incomes and time in such things as improvements on land and education I am convinced there is need for discussing these problems explicitly. True of course there is the problem of individual choice but we can assume at this stage that the bulk of consumers in Kenya are not aware of the choices open to them.

32. There is nothing particularly unusual even in an agricultural economy importing food and paying for the food from its earning from sale of some commodity it produces. The trend which should raise concern is the one where more and more developing countries depend on food grants from developed countries especially U.S.A.

33. The possibility that improved production may result in worsening of terms of trade for the country where improvement has taken place is known to be a problem facing agricultural raw material producers as the following quotation from the Financial Times seems to indicate.

"Since 1957 the prices paid for their (developing countries) primary products declined so much that the industrialized countries made a saving of \$ 7,000 million and an extra profit of \$ 3,000 million because of the increased cost of manufactured goods. The developing countries thus lost \$ 10,000 million - about the same as the total "aid" they received from commercial, private and international sources. - Financial Times of London, July 19, 1965.

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APPENDIX

TABLE I a.

COMPARATIVE PUBLIC EXPENDITURE ON EDUCATION AS A SHARE
OF GDP AND OF TOTAL PUBLIC OUTLAYS SELECTED YEARS.

1		2	3	4	5	6(5÷3)	7(5÷4)
COUNTRY	UNIT	YEAR	GDP	TOTAL PUBLIC EXPENDITURE Millions of National Currency	EXPENDITURE IN EDUCATION: TOTAL %	GDP	% of TOTAL EXPENDITURE of G.
ETHIOPIA	₪	1957		146.1	17.1		11.7
		1960		176.5	21.3		12.1
KENYA	£	1957	205.9	41.2	5.1	2.5	12.5
		1962	231.8	50.6	8.8	3.8	17.4
ZAMBIA	£	1957	161.1	27.5	2.3	1.4	8.3
		1963		28.5	4.9		17.2
SOMALIA	S	1957		144.7	14.5		10.3
		1962		189.0	14.7		7.8
RHODESIA	£	1957	250.5	23.3	2.1	1.0	8.9
		1963		34.1	6.0		17.7
MALAWI	£	1956	42.2	9.9	0.6	1.2	5.7
		1962	60.1	13.6	1.7		12.5
SUDAN	S	1957	328.4	43.7	7.2	2.3	17.2
		1962	450.0	126.7	18.1	4.0	14.3
TANGANYIKA	£	1956	130.0	23.5	3.9	2.4	16.8
		1962	204.0	29.6	6.1	3.0	20.5
UGANDA	£	1957	146.7	27.1	3.2	2.2	11.9
		1963	135.7	26.4	8.6	5.2	32.7
ZANZIBAR	£	1957		3.0	0.37		12.5
		1962		3.5	0.54		15.6

Source: Conference of African Planners Dakar November, 1964.
Document W/3 1164. 21-55 prepared by UNESCO Secretariat.

APPENDIX TABLE IIa.

EAST AFRICA POPULATION AND EDUCATION SELECTED YEARS.

COUNTRY AND YEARS	SCHOOL AGE POPULATION '000				ENROLMENTS '000							
	1		2		3		4		5		6	7
	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	T.T.C.	HIGHER
ETHIOPIA	1958/59 & 1962		4000	4360	158	289	4.5	9.4	2.5	3.2	1.8	1.0
KENYA	1958 & 1962		1198	1769	601	936	4.0	25.9	1.1	1.4	4.0	0.5
ZAMBIA	1958 & 1961		444	700	244	305	2.0	3.8	2.0	2.2	1.2	-
SOMALIA	1958/59 & 1960		264	460	16	24	1.0	1.0	1.0	1.0	0.2	0.08
MALAWI	1958 & 1961		520	750	270	237	1.2	1.7	1.0	0.7	1.8	
TANGANYIKA	1958 & 1961		1733	2025	403	521	3.5	16.7	1.4	7.7	1.7	0.01
UGANDA	1957 & 1960		1153	1440	418	533	21.6	31.0	4.0	4.5	3.0	1.0

Sources: Columns 1a 2a 3a 4a and 5a Lewis L.J. Education and Political Independence in Africa
Edinburg 1962.
Columns 1b 2b 3b 4b 5b 6 and 7 UN Statistical Yearbook 1964.

Notes: 1. School age population is estimated as 20% of the total population
2. Column 2b figures are based on 1963 population estimates.
3. Tanganyika's 1961 and 1963 figures include Zanzibar.

TABLE IIb.

ANNUAL PERCENTAGE INCREASES IN SCHOOL AGE POPULATION AND ENROLMENTS.

		School age population	Primary	Secondary	Technical
ETHIOPIA	1958/59 - 1962	2.0	17.1	24	7.5
KENYA	1958 - 1962	6.1	16.4	60	6.2
ZAMBIA	1958 - 1961	12.0	7.8	24	3.3
SOMALIA	1958/59 - 1960	17.5	18.9	0	0
MALAWI	1958 - 1961	6.6	2.1	12.3	-11.0
TANGANYIKA	1958 - 1961	3.8	3.9	68	7.8
UGANDA	1957 - 1960	5.2	8.4	12.9	3.9

Source: Table above.

TABLE I b. PERCENTAGE INCREASES IN GDP, TOTAL GOVT. EXPENDITURE AND EDUCATIONAL OUTLAYS
SELECTED YEARS.

		GNP	TOTAL G. EX.	EX. ON EDUCATION
ETHIOPIA	1957 - 60		6.5	7.6
KENYA	1957 - 62	2.4	4.2	11.5
ZAMBIA	1957 - 63		0.6	16.3
SOMALIA	1957 - 62		5.5	0.3
RHODESIA	1957 - 63		6.5	19.1
MALIWI	1956 - 62	6.1	5.5	20.0
SUDAN	1957 - 62	6.5	24.0	7.6
TANGANYIKA	1956 - 62	4.1	3.9	7.6
UGANDA	1957 - 63	2.1	- 0.5	17.9
ZANZIBA	1957 - 62		3.1	7.8

Source: Calculated from Table above.

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