

Education and Manpower' Planning in Ethiopia

A REVIEW OF THE DEPARTMENT OF LABOUR'S ASSESSMENT OF ETHIOPIA'S
MANPOWER REQUIREMENTS

Robert S. Love

"Although it is obvious that people acquire useful skills and knowledge, it is not obvious that these skills and knowledge are a form of capital, that this capital is in substantial part a product of deliberate investment, that it has grown in Western societies at a much faster rate than conventional capital, and that its growth may well be the most distinctive feature of the economic system. It has been widely observed that increases in national output have been large compared with the increases in land, man-hours, and physical reproducible capital. Investment in human capital is probably the major explanation for this difference."

The opening paragraph of T.W. Schultz's presidential address to the American Economic Association in 1960 has introduced a decade in which the economic aspects of the role of education in national development have been given unprecedented attention. As a result of the widespread post-war concern with economic rates of growth and popular welfare it has become more difficult to agree with John Stuart Mill that,

"In propriety of classification the people of a country are not to be counted in its wealth. They are that for the sake of which its wealth exists."

This approach is a sensible reminder of the objectives of all economic activity, but it does tend to obscure the fact that the education embodied in a person provides him with more than direct cultural benefits. The educated person is more likely to adopt a more rational, informed approach to the problems of working than a less educated colleague, and generally this would be expected to improve his performance at work, thus increasing his own and the nation's total output in the future.

The increased interest since the early 1960's in the importance of education as a factor in economic development has appeared in the less developed as well as in the developed countries, and in the former it has been avidly seized upon as an essential link between physical capital investment and total economic output. In these countries education has become an indispensable catalyst for growth. Improving literacy, the spread of technology and new ideas is lubricated. Higher levels of education help to change traditional attitudes while at the same time producing skilled technicians, managers, and entrepreneurs. Education means more efficient allocation and operation of other scarce resources such as land and the various forms of capital.

Yet, while the conceptual importance of education in the development process has thus been belatedly recognized, there has not yet evolved a satisfactory method for dealing with it in practice. Perhaps the main drawback of the latest publication of the Manpower Research and Statistics Section of the Department of Labour is its failure to make this clear on every occasion.¹

This publication is the first comprehensive attempt to analyse the relationship between Ethiopia's manpower needs and her educational supply since Ginzberg and Smith's report in 1966². In some ways, however, it is less satisfying than the earlier report. It bravely attempts more quantitative methods than Ginzberg and Smith, but it fails to point out the risks involved in such an approach, where, as in most African countries, the basic data are extremely crude. The report falls conveniently into two parts: one is the quantitative analysis of demand and supply for various skills and educational levels, and the other contains the recommendations for policy which follow. Let us take these in turn.

A. *The Demand and Supply of Skills.*

Calculation of the demand in an economy for different categories of educated people involves a number of steps. Basically, we need a forecast of the rate of growth and structural change of the economy, we need an estimate of changing productivity, and we have to associate different occupations with required educational levels.

With regard to the first part of this process, the procedure of the report is to assume a 5% per annum overall rate of growth of Gross Domestic Product for the period 1961-65 and 6% per annum for the period 1966-70 E.C. A general rate of growth of productivity of 1% per annum is assumed. The ratio:

$$\frac{(1 + \text{rate of growth of Gross Domestic Product})^n}{(1 + \text{rate of growth of productivity})^n}$$

is multiplied by the estimated total employment in 1960 E.C. of 7,419,200, to give an estimated total employment in 1970 E.C. of 11,190,400, representing an annual increase of 4.2%. In order to obtain a sectoral breakdown of this employment, the results of an international cross-section study were then applied to the total employment figure. This series of calculations can be criticized on a number of counts.

(a) In the first place it is possible to query the assumption of an annual growth rate of Gross Domestic Product of 5-6%. The latest available published figures only come up to 1967 G.C., but between 1961 and 1969 the average annual increase (at constant prices) was 4.77%. Now, while this may be considered fairly close to 5%, it is likely to have been biased upwards by the effects of improved recording and collection of statistics during that period. There is also some evidence of low capacity utilization of capital investment in the country, of inefficient production methods, of low levels of profits, and of long-

term balance of payments problems, all of which will tend to reduce growth rates. Even if the figure of 4.77% for current rates of growth is accepted it still seems optimistic to expect a 5% or 6% average growth rate over the next ten years. It would have been interesting to have had a discussion of this in the report.

(b) The assumption, on the other hand, of an overall average rate of growth of productivity of 1% per annum may be regarded as rather pessimistic. It would have been better to have had a sectoral analysis of productivity, perhaps on the basis of information provided in the National Plan and elsewhere, and although even this would be crude, it would seem to be better than the assumption of a general 1% rate.

(c) The use, in this context, of an international comparison must also be criticized. International comparisons tend to be neither intellectually satisfying nor statistically reliable. The averages which arise from international comparisons are in one sense typical of all countries and in another typical of none. They are useful to the policy maker in extracting broad trends, but only with care should their statistical results be applied to the case of any single country. A multitude of political, geographic, and social variables are at work and their attempted standardization by econometric techniques must be treated with caution, especially where, as here, the economic aggregates involved in structural change through time are concerned.

It is likely that for Ethiopia, so different in many ways from other countries, structural change in output and employment should be predicted on the basis of information about Ethiopia alone, however inadequate. This is amply illustrated in the present case, where, of the twenty-six countries appearing in the study used by the Department of Labour, seventeen are in Latin or Central America and only one, Morocco, is in Africa.

(d) Before forecasting the additional labour force needed in 1970, E.C., the report considers attrition rates from the labour force for the years prior to 1970. A figure of 3.5% of the labour force is used. There is very little information about death and retirement rates in Ethiopia, and it is therefore possible to quarrel with this figure, mainly to the effect that it may be too high. Bearing in mind that figures used in certain other African countries have been of the order of 2% or less, it would have been useful had the report been able to include a brief note on the derivation of its own estimate of 3.5%

The net effect of these four points, if valid, is that the manpower demands forecast in the report may well be exaggerated. A more general effect is the lesson that, given the current provision of economic data in Ethiopia, it is premature to attempt detailed quantitative forecasts of the type offered here. This point is re-emphasised below.

The argument so far has taken us to the point where total future employment is broken down into sectoral sub-totals. The remaining part of the analysis of demand is to break these gross sectoral demands down into specific occupational needs and to relate these to educational needs. The basis in the report

for estimating the occupational structure of the total manpower requirements in 1970 E.C. is the structure in 1960 E.C. as it appeared in a sample survey carried out by the Department of Labour³. Details of the sample appear in Appendix 1 of the report, but unfortunately any questions which it raises must await its full publication. That it needs closer study is clear when we compare some of its results with those from other sources. For instance, the number of teachers in 1960 E.C. is given in the report as 20,236, compared with 13,699 in the latest school census of the Ministry of Education. Similarly, the number of "Food and Beverage Processors" in modern manufacturing is given as 2,676, which compares with 24,718 in 1959 E.C. according to the Statistical Abstract 1969. Some part of these divergences must be due to differences of coverage, but it would obviously be useful to have greater knowledge of this.

A second criticism, though perhaps not so important, rests upon whether or not it is reasonable to assume, as the report appears to do, that the employment structure of 1960 will be largely unaltered by 1970. In many ways things are shown to change in developing countries, but the same study by Tinbergen and Bos which is quoted on page 24 of the report also discusses Greece, still a comparatively poor country, where the ratio of high level manpower to Gross Domestic Product changed 30% between 1951 and 1961. As before, however, the available information is extremely inadequate.

However, even where intelligent guesses and manipulations can be made with regard to occupational structures, one of the biggest problems in manpower planning concerns the relationship between employment activities and educational background. The report once again gives a less than satisfactory account of its own methods in this respect. The discrepancy over the figure for teachers, for instance, may be due to how the qualifications are defined. The report also refers to a total of 2,186 accountants working in Ethiopia, but only a handful of these could be chartered. In its policy recommendations, however, the report does call for a National Classification of Occupations, to which educational requirements can be related.

In many ways the supply of educated people entering the work force in years to come is easier to analyse, but, as before, the process in Ethiopia is hindered by inadequate statistics. The report estimates the numbers leaving the education system between 1961 E.C. and 1970 E.C. as follows:

TABLE I

Level	Number leaving the educational system 1961-70 E.C.
Primary	385,500
Junior Secondary	244,576
Senior Secondary	71,421
University	4,710

Source: *op. cit.*, p. 30.

However, different assumptions are possible about enrolment and promotion rates. This is illustrated if we take the example of primary education. The report makes the following assumptions:

- (a) Enrolment in grade 1 of primary schools will increase at the rate of 7% per annum.
- (b) Drop-out between grades 1 and 6 is 40%.
- (c) 60% of the enrolment of grade 6 passes to grade 7.
- (d) Drop-out between grade 7 and 8 is 5%.

These figures are derived from Ministry of Education reports, yet it is possible to study such reports and come up with slightly different assumptions. For example, using figures which have been suggested within the Ministry of Education we get the following:

- (a) Enrolment in the first year increases at 8% per annum.
- (b) 70% of grade 1 enrolment gets promoted to grade 2, and thereafter 95% are promoted from each grade to the grade above.
- (c) About 61% do not go to Junior Secondary school.
- (d) 5% fail to complete their Junior Secondary education.

Calculations on the basis of these assumptions produce a forecast of 494,600 leaving the education system over the next ten years having completed primary education. Alternatively, if the actual enrolment and promotion rates for the year 1961-2 to 1967-8 E.C. as they appear in the School Censuses are used, then the assumptions are:

- (a) Enrolment in the first year increases at 5% per annum.
- (b) 65% of grade 1 enrolment passes to grade 2, and 90% proceed from grade to grade thereafter.
- (c) Only 19% of those obtaining a primary education do not proceed to higher levels, including those who fail Junior Secondary.

This produces a forecast between 1961 and 1970 E.C. of 117,139 people leaving the education system with a primary education. In this case, a comparison with the demand for people having a primary education, given as 177,500, indicates that a shortage will appear, in contrast to the surplus implied by the other possibilities.

The same conclusion as was reached in discussing the demand situation re-appears here, namely, that statistics in Ethiopia are perhaps not yet of a standard to justify any effort at sophisticated quantitative techniques in educational and manpower planning. It is possible that the authors of the report were aware of this in as much as little effort is made to interpret the results of their calculations. This is discussed now.

B. *The Results and Recommendations of the Report*

I. THE RESULTS.

The statistical results of the report are shown in Table II below:-

TABLE II

Educational Level	Manpower Requirements	Anticipated Manpower Supply	Shortage (-) or Surplus (+) of Manpower
University	19,300	4,500	- 14,800
Senior Secondary	71,700	60,700	- 11,000
Junior Secondary	80,200	183,400	+ 103,200
Primary	177,500	289,100	+ 111,600
TOTAL	348,700	537,700	+ 189,000
Below Primary	1,108,800	Adequate	-

Source: op. cit., p. 33.

In several ways these results leave a number of questions unanswered. Shortages at the higher levels conflict with current feelings in the employment market that jobs are becoming scarcer. While there is little concrete evidence as yet, it is certain that Ministries, traditionally the main employers of University and high school graduates, cannot continue to absorb them at the same rate as previously. This is partly because over-recruitment in the past has resulted in a degree of underemployment and low productivity today, and partly because the reduction in the average age of employees will correspondingly reduce the attrition rate. Employment opportunities for graduates will therefore depend in the future on the rate of growth of demand from private industry.

Such a growth will be fed in two ways. In one sense, the total number of jobs must increase at a rate equal to the rate of growth of the education system, and secondly, if this does not occur, then the job expectations of graduates must be adjusted downwards. Present indicators seem to suggest that the latter process has already been set in motion. The report discusses at some length disturbances caused by the fact that official civil service salaries are often higher than those offered on the private market, the disparity being due to the government's custom of paying on the basis of qualifications and the private sector on the basis of work done. This is a fair point, and illustrates how the rigidity of the government's employment policy works against both the government itself, since it is not paying on the basis of marginal products, and also on the private market since graduates are reluctant to take up occupations at a salary less than they expect on the basis of their qualifications. In general, the past situa-

tion has been largely artificial and the re-adjustment of graduate expectations, though painful, does seem to be inevitable.

At the lower levels, primary and junior secondary, considerable surpluses are expected, and this does seem reasonable in the light of recent growth rates of primary enrolment, though in large part the output of primary graduates also depends on the teacher supply situation. Here again, it is possible that a re-adjustment of expectations will be required of the primary and 9th grade graduate, as employment opportunities fail to increase at a rate fast enough to offer the traditional types of clerical employment. In this respect I think the report does not pay sufficient attention to the vocational aspects of the school system.

In a short discussion on vocational training the report does anticipate substantial shortages (though once again without providing an adequate explanation of the method used), but it does not link this up in any detail with the forecast surpluses from the general education system. However, despite the brevity of its discussion on vocational training, the report is surely right in pointing out that,

"The qualitative aspects of training involve many elements. But first and foremost there should be standardization of training content in respect of the various occupations in which training is provided. At present there is a variety of standards, backgrounds and levels of training in some of the occupations, depending on the agency or the management that provides the training facilities. The result is that many young persons on the conclusion of their training find themselves unsuited to meet the requirements of employers or the demands of the employment market. Unemployment and a general lowering of efficiency of the labour force are the result, not to speak of the wastage of effort and expenditure involved in the training process".

Likewise, its call for an organized apprenticeship scheme similar to that of the advanced countries should be accorded substantially more attention than it has received in the past. In this respect the interests and resources of the Confederation of Ethiopian Labour Unions could be utilized.

At the lower levels of education, however, the report is deficient in two areas which are of considerable importance to Ethiopia. The question of employment in the agricultural sector is, in my opinion, dealt with too briefly and inadequately. The discussion is confined to mechanized agriculture, where employment is assumed to double over the ten years 1961-70 E.C., and to a short account of extension workers in rural areas. There is no discussion linking the growth of agricultural productivity and population with the growth of rural-urban migration, and the effects this may have on urban unemployment. The extent of this phenomenon in Ethiopia is at present unknown and may not be very large, but it would certainly seem to hold some dangers for the future, especially when the present low ratio of urban to rural population in Ethiopia is borne in mind.

The second area is related to the problem of agricultural employment and is that of literacy. The report refers only indirectly to this question when it refers to the anticipated manpower supply at levels of education below primary as "adequate". The need for literacy exists at two levels. One is based on the argument that all people should have equal opportunities to obtain an education and that universal primary education is a prerequisite of this. The other is the economic argument that in rural sectors literacy is an aid to the introduction of new methods of production and commerce. In the present context, we are concerned with the second of these. If literacy affects the productivity and output of traditional farmers then one would have expected some discussion of this in the Department of Labour's report, since any change in agricultural output per head will affect the ability of a given agricultural population to support the non-agricultural population. The impact of what has come to be known as "functional literacy" is in this way a prime factor in the relationship between the agricultural labour force and the rest of the country.

2. THE RECOMMENDATIONS.

The final part of the report outlines suggested institutional changes and priorities for action. The most important recommendation is the formation of a Manpower Advisory Board, to meet twice a year, composed of representatives of various Ministries and other interested parties such as the National Bank of Ethiopia, HSIU, the Federation of Employers of Ethiopia, the Confederation of Ethiopian Labour Unions, and the 14 Governorates-General. The level of representation "should be such that those who sit on the Board should themselves be concerned with the implementation of the policy decisions that are taken on the basis of their advice." The secretariat to this Board would be the Planning Commission and the Department of Labour.

The most significant aspect of this recommendation is that the Board will operate at a high level, thus according due importance to the relationship between the country's education system and its economic growth. The only criticism here could be that the Ministry of Education seems under-represented, and must play a bigger role in the control over curricula than it would seem to have been given in the proposed Advisory Board.

The report concludes with several "Recommendations for Action". These concern a national classification of occupations; standardization of the training content in respect of trades and occupations; manpower information; the utilization of trained personnel; wages and salaries policies; the integration of manpower planning with economic planning; and coordination of manpower work. If we ignore the possible implications of having neglected agriculture and literacy, then the first three of these would seem to be the most important. The report gives the utmost urgency to the need for a national classification of occupations. This is seen to involve two stages:

"The first and the shorter term project would be to prepare a standard classification of occupations which would be applicable nationally to both the public and private sectors. The second and the longer term project would be to standardize occupations and jobs within the government in regard to their nomenclature as well as functions; and to standardize to the extent possible the educational and other qualifications for recruitment to posts at all levels, in the newly established job requirements."

The second recommendation, the standardization of the training content in respect of trades and occupation, follows from this one. There are, however, problems in these recommendations. One is the need to avoid the danger of creating a new system which turns out to be as rigid and ill-adapted for change as the present one. A Standard Classification could produce rigidities which neglect the degree of substitutability that does exist among many jobs, and which, in the hands of an inept bureaucracy, may result in frictions at least equal to those of the old system. In addition, these same elements of adaptability in the relationship between education and employment, where a university Arts graduate, for instance, may become a teacher, salesman, civil servant, or banker, may mean that the time, money, and effort involved in attempting to classify occupations is wasted in terms of the reliability and usefulness of the results. The purpose of a classification system is to provide the educational network with a guide to the human resource needs of the country, so that graduates of specific training may always be available in numbers which will cause minimum disturbances of supply and demand in the labour market. It may be, however, that, given that degree of flexibility in a non-vocational education system on the one hand, and the difficulty of classifying jobs on the other, then only general vocational skills and attitudes should be taught, with the main emphasis on creating a highly reactive intellectual ethos.

A recent survey by the Department of Economics, HSIU, noted that many supervisors of graduates in employment,

"found that the power of analysis, independent thinking, initiative and constructive ideas and practical problem-solving abilities of recent graduates not developed as a result of their University education." (*sic*)

The emphasis here is that the University, and by implication other institutions, should not necessarily be thinking of specific skills when relating its instruction to the demands of the nation, but should be preparing the students rather in the mental discipline necessary to understand the nature of the problems which they and the country face, and to attempt the formulation of logical and realistic solutions, at both the personal and the national level.

CONCLUSION.

However, even under such a wide interpretation of the role of education in a developing nation, there is still a need for the changing structure of the

economy and employment to be forecast with more accuracy than is at present possible in Ethiopia. Decisions in the educational sphere must relate in at least a minimal way to employment possibilities and expectations in the labour market. It may be justifiable to have as an objective an educational system which is broad-reaching and scholastic, but in a developing country the extent of this intellectualism must be constrained by the needs to offer higher material standards of living to more people and the recruitment of human resources to create them. If this is so, then the first requirements in the formulation of relevant policies must be the availability of sufficient information concerning these material needs and the skills required to satisfy them.

A National Classification of Occupations involves problems of definition, and at a later stage, of enumeration. The problems involved could easily convert the process into an academic exercise. At the present stage of Ethiopia's economic development I believe more could be achieved by improving the quality and extent of the basic economic data provided by the Central Statistical Office and other agencies. The returns from having reliable national income data and a full population census, for instance, could be far greater in terms of more accurate forecasts and implications for other fields than those of a piecemeal approach to isolated sectors of the economy. The report does mention the need for more manpower information but places it second to the need for a classification of occupations. Yet, simply to improve the present collection of information on the economy and its labour force would to a large degree obviate the need for a classification system, and would at the same time provide information which could be used outside the specific area of manpower planning.

It was seen at the beginning of this review that the forecasts in the report are not as definitive as the form of presentation would seem to imply, and yet about 80% of its content is devoted to these calculations. This raises two broad lines of comment. In the first place, given the inadequacies of the data in almost all areas, it would perhaps have been more instructive to have had relatively more discussion on a verbal, non-mathematical, and impressionistic level, as in the earlier report of Ginzberg and Smith, and, secondly, more stress could have been laid on the statistical deficiencies themselves.

It is likely that of all forms of investment in developing nations, improvement in the collection and quality of official statistics would yield a higher return, in the sense of reducing the possibilities of error and wastage in future policy decisions, than any other form of investment. The Department of Labour's report goes some way towards recognition of this in so far as it recommends more detailed knowledge of specific job requirements, but so long as significant gaps in our information on general structural and productivity changes in the economy continue to exist then this can only offer a partial solution. Such circumstances will tend to produce unidentifiable distortions in forecasts of employment needs, and must accordingly reduce the graduate's chances of obtaining employment as and where he prefers. This is a situation which concerns not only the economist and employer, with their pre-occupation with

working life, but also those whose interest it is to prepare the student for life in general.

It is the contention of this paper that, while the Department of Labour's report is a timely step in the right direction, its priorities for action should be directed more towards improving the type of preliminary information which is not solely related to manpower problems, rather than concentrating on the later, and therefore more vulnerable, stages of the forecasting process. At the very least, I hope I have shown that there is considerable scope for discussion on many of the points raised by the report, and that the report itself may be a useful and welcome stimulant to this effect.

FOOTNOTES

1. *An Assessment of Ethiopia's Manpower Requirements and Resources For Economic Development 1961-70 E.C.*, I.E.C., Ministry of National Community Development and Social Affairs, Department of Labour, November, 1970.
2. E. Ginzberg, H.A. Smith, *A Manpower Strategy for Ethiopia*, prepared for the Ethiopian Government under the auspices of U.S.A.I.D., Addis Ababa, 1966. Earlier reports are by U.N.E.S.C.O., *Report on Investment in Education in Ethiopia*, March 1963, and by Arnold Zack and Duri Mohammed, *High Level Manpower in Ethiopia*, 1964. All three reports are critically reviewed by Assefa Bequelle in "The Educational Framework of Economic Development in Ethiopia," *Ethiopia Observer*, Vol. XI, 1, 1967. Ginzberg and Smith's recommendations with respect to H.S.I.U. are discussed by Aklilu Habte in "A Manpower Strategy for Ethiopia: Ginzberg and Smith", *Ethiopian Journal of Education*, Vol. 1, June 1967.
3. "A Survey of the Occupational Pattern of Employment in Ethiopia, 1970 GC" issued by the Department of Labour, Ministry of National Community Development and Social Affairs, I.E.C. At the time of writing this document does not yet seem to be available, however.