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MANPOWER, EMPLOYMENT, AND EDUCATION IN THE RURAL ECONOMY OF TANZANIA.

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LESS THAN A TENTH OF THE TANZANIAN LABOR FORCE IS IN PAID EMPLOYMENT, AND MOST ABLE-BODIED ADULTS ARE STILL ENGAGED IN LOW-YIELDING AGRICULTURE AND HERDING. MODERN PRODUCTIVE EMPLOYMENT IS SCARCE EVEN FOR THOSE WITH AN EIGHT-YEAR PRIMARY EDUCATION. THE INVESTMENT IN FORMAL EDUCATION HAS OUTFRAN INVESTMENT IN EDUCATION AIMED AT INCREASING PRODUCTIVITY AND ECONOMIC OPPORTUNITY. HIGHEST PRIORITY SHOULD GO TO AGRICULTURAL EXTENSION, ACCOMPANIED BY A TEMPORARY RESTRICTION OF THE EXPANSION OF FORMAL PRIMARY EDUCATION. THE VICIOUS CIRCLE OF LOW PRODUCTIVITY, INADEQUATE EXTENSION SERVICES, AND SCARCITY OF REVENUES TO TRAIN AND PAY EXTENSION AGENTS CAN BE BROKEN ONLY BY INCREASING EXTENSION SERVICES WITH AN ABSOLUTE MINIMUM OF RECURRENT EXPENDITURE BY THE GOVERNMENT. SIMPLE CRAFT AND COMMERCIAL TRAINING, COMMUNITY DEVELOPMENT AND RESETTLEMENT PROJECTS, YOUTH SERVICES, NATIONAL SERVICE, AND COOPERATIVE TRAINING ARE ALSO NECESSARY. (THE DOCUMENT INCLUDES SIX TABLES.) THIS DOCUMENT IS ALSO AVAILABLE FROM UNESCO, PLACE DE FONTENAY, 75 PARIS-7E, FRANCE, FOR \$1.50. (LY)

Manpower, employment and education in the rural economy of Tanzania

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

Guy Hunter

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Guy Hunter

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IIEP African studies

In 1965, the International Institute for Educational Planning (IIEP) embarked on a series of African case studies designed to shed light upon several major problems confronting educational planners in developing countries. These problems included the integration of educational and economic planning, the costing and financing of educational development, the supply of and demand for teachers, the effect of rapid expansion on the quality of education, the planning of adult education, the bearing of educational planning upon external aid, and the administrative aspects of planning, including implementation.

The task was undertaken in three stages. The first involved the collection and analysis of documentation on three English-speaking countries, Nigeria, Tanzania and Uganda, and two French-speaking countries, Ivory Coast and Senegal, where the studies were to be undertaken, followed by the drafting and critical review of provisional reports. The second stage consisted of field investigations by staff members and expert consultants, lasting one to three months in each case. In several instances reports were prepared by experts on the scene in accordance with outlines jointly designed and agreed to. The last stage involved the drafting, criticism, revision and final editing of the reports for publication.

Two senior staff members of the IIEP directed the studies in the English-speaking and French-speaking countries respectively, from initial design to final editing. Altogether, eighteen field studies were carried out with the help of officials and advisers of the countries concerned. To the extent possible, the same problem was examined on a similar basis in different countries so that it could later be subjected to comparative analysis. Although the IIEP intends later to synthesize certain of the studies in book form, it considers that most of the full original reports should be made available promptly in monograph form for training, operational and research purposes. It should be emphasized, however, that the intent of these reports is not to give advice to the countries studied but rather to extract from their experiences lessons which might prove useful to others and possibly to themselves.

IIEP African studies

While gratitude is expressed to the governments, organizations and many individuals whose co-operation made these studies possible, and to the Ford Foundation and the French Government for their help in financing them, it is emphasized that responsibility for the facts, analyses and interpretations presented rests with the authors. In making the decision to publish these studies, neither Unesco nor the IIEP necessarily endorses the views expressed in them, but they feel that their content is worthy of open and free discussion.

Foreword

This monograph by Guy Hunter, a member of the Institute of Race Relations in London and a long-time student of East African educational and manpower problems, is one of five case studies in the IIEP African series which were carried out in Tanzania with the generous co-operation of the government officials. The other four deal with the educational planning process as it has evolved in that country; with educational costs and finance; adult education; and integrating educational plans with recent estimates of future manpower requirements of the modern sector.

The present study is of a different nature. It is concerned with educational and employment opportunities for the huge section of the population—at present over 95 per cent of a given age group in Tanzania—who have at most a full or partial primary education (just over half) or no formal education at all. Since Tanzania, like most developing nations, is overwhelmingly a rural society, most of the monograph deals with the expansion of opportunity for productive employment in the rural economy, and with how to make fruitful—and not to waste—the existing investment in primary education, which absorbs about half of the total educational budget. It is accordingly concerned with both educational planning and manpower policy, not simply as a means of filling known needs for special skills in the modern sector, but as a means of making maximum productive use of all human resources. In short, the author comes to grips with a central problem that is plaguing many developing countries today, namely how to balance education and job opportunities, especially at the broad lower levels of the manpower pyramid, and how to use education not merely to fill jobs but to help create them.

In this context 'education' is given a wider meaning, to include *all* educative services, and in particular those, such as agricultural extension, which directly increase economic opportunity. Thus, the study goes well outside the customary limits of educational planning, in the belief that only by doing so is it possible to

Foreword

see formal education itself, and the financial and planning problems which beset it, in its proper context in the total social and economic structure.

Most students of development will probably share Guy Hunter's cardinal premise that accelerated rural development and agricultural productivity are prerequisites to successful industrialization and over-all national growth in countries such as Tanzania. Many will also agree that the latent wealth of these nations resides above all in their human resources, and thus education has a prime role to play in the complex process of modernizing the traditional sector of such countries. But to move from these broad premises to practical strategies and plans of action is no easy matter, and it is this which Mr. Hunter attempts to do, using Tanzania as an illustrative model. His conclusions, however, may not receive the same measure of agreement as his premises, for they are somewhat unconventional. His purpose is not to counsel Tanzania, but to encourage further fruitful discussion that can ultimately help all developing countries in attacking an exceptionally difficult problem shared by most. The Institute does not necessarily endorse Mr. Hunter's suggested courses of action but presents them as illustrative of how the planning problems of developing education for rural society may be creatively re-examined.

PHILIP H. COOMBS
Director, IIEP

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1 The fundamental problem

The central task of development is to use potential human and natural resources more productively. This monograph is concerned primarily with the human side (manpower) and with all forms of educative effort. But the use of human potential is inseparable from economic opportunity; the earlier part of the study is therefore concerned with the range of economic opportunity in Tanzania today, and with means of widening it so that human resources can be more productively employed. Realistic educational planning depends upon this.

Earlier studies of manpower in Tanzania (and in most developing countries) have been concerned primarily with 'high-level' manpower, both administrative and technical, for government, industry and the whole modern sector of the economy. Success in providing it—and Tanzania is succeeding—replaces the small, highly paid cadre of foreign civil servants, professional men and technicians with specially trained nationals. Further, it lays the basis, in education at the second and third levels, for a further expansion of the modern sector, and this has implied a rapid expansion of the whole system of formal education at these levels.

But Tanzania, at independence, was 90 per cent a rural society, with a very small modern sector. The replacement of expatriate staff by nationals does not by itself alter this situation; there remains the enormous problem of providing more productive and satisfying activity for the vast majority of Tanzanians who are self employed in the rural economy. Manpower planning, in so far as it is only meeting the demand for a relatively small number of modern skills, is neglecting the manpower of four-fifths of the nation. This study is therefore starting from an entirely different standpoint. It does not deal with higher manpower or with the main urban industrial modern sector. It is concerned with the 90 per cent of people in the rural economy and with the 97 per cent of each year's children who never

enter the second level of education. Manpower policy is treated as a policy concerned with the productive use of the maximum volume of human resources in the nation as a whole.

This is not to equate manpower policy with general economic policy. To involve an ever-increasing proportion of citizens in more productive activity requires not only economic opportunity but educative effort—both the training of educators and technical staff to advise people what to do, and some degree of education in the people themselves, so that they can more readily respond.¹ This effort is costly in recurrent expenditure.² Manpower policy should therefore be concerned with the right balance and structure of educational expenditure in relation to economic opportunity; it deals both with those who initiate opportunity and with those who can use it. It is the bridge between economic activity and educative effort.

This balance is more vividly illustrated by asking, 'Why is Tanzania poor?' There is high potential in much of her soil, much of it still unexploited; there are other natural resources awaiting development. There is also a great reservoir of undeveloped human capacity. How does this tantalizing situation arise that resources are there and people are there, yet the two cannot be brought into productive union?

The low level of production is partly due to lack of capital, as the catalyst between labour and physical resources, and this is especially marked in the road and transport system and the control of water resources: higher production would also have to find external markets. But capital is not to be thought of simply as money injected from outside. It is mainly generated in the course of development—the farmer who makes bricks and builds a tobacco-barn is literally generating capital from labour and land; the co-operative which buys a tractor from the proceeds of a cotton crop is doing the same. The other major constraint is the shortage of the educative effort which is needed to make labour productive. Very large improvements in productivity can be put in train with extremely small capital inputs by education in better methods. Educative effort has to be paid for by recurrent income.

The decisive shortage of educative effort does not lie, at the present moment, in the system of formal education. This may seem a quite extraordinary statement to make when over 45 per cent of all Tanzanian children of school age cannot enter school for lack of recurrent income. But the vital fact is that some 46,000 young people in Tanzania completed seven or eight years of education in 1965, for the majority of whom no really productive activity can be found. Thus, there is the

1. The distinction between advice and response, and the degree and type of education required for each, has been much neglected in manpower studies.
2. For a useful review of the main literature on the role of educative services in agricultural development, see Clifton R. Wharton, 'The Educational Implications of the Requirements for Agricultural Progress', *The Role of Education in the Early Stages of Economic Development*, Social Science Research Council Conference, Chicago, April 1963.

gravest danger that this great investment in formal education will be half wasted because economic opportunity for the product has not been created. Shortages of recurrent income are felt in the agricultural and animal husbandry extension services, in staffing community development, in technical and managerial staff for the settlement agency, in staff for simple post-primary training, in full-time leadership and administration of national service. Many of the boys with seven or eight years' education will eventually drift back to villages where the land which could grow rich crops is yielding a pittance, where low-grade cattle are wasting the pasture, where uncontrolled water resources are running to waste, largely for lack of the initiators and advisers who are needed to introduce modern productive methods. Without help, these teen-age boys and girls, upon whom almost 50 per cent of the educational budget has been spent, have neither the social standing, nor the knowledge, nor the resources to alter the pattern of subsistence farming among their elders. It is an illusion to suppose that formal education by itself achieves economic change in the traditional rural communities characteristic of tropical Africa.¹

The Government of Tanzania is acutely aware of this problem. It has already taken, in principle, the two most vital steps needed to attack it—giving a high priority to agricultural and rural development, and restricting firmly the further expansion of recurrent expenditure on education until it can be better matched (and paid for) by economic advance.

The problems which this monograph will consider in more detail are how to plan the educative effort within the limitations of recurring finance so that it contributes most to enlarging economic opportunity and wastes least of the investment in education which has already been made. I must stress that the monograph deals with the educational services as a whole—not only schools but agricultural extension, community development, co-operatives, adult education, youth and national service, vocational and technical training. It will consider in particular the means: (a) to improve the effectiveness, and if possible the scale, of the educative services directly affecting opportunity; this involves questions of organization, deployment and finance; (b) to identify the cheapest methods of achieving advance through such methods; (c) to make the increased production pay for any additional services; (d) to call upon the energy, experience and initiative of the

1. Cf. V.L. Griffiths:

'1. To educate regardless of employment opportunities may work in a society that is fluid and where individual initiative is prized; it is not effective where society is only emerging from a static and authoritarian stage.

'2. The schools alone are helpless in effecting any dramatic change in rural life. They can only be effective as part of an economic and social plan which (a) makes farming economically attractive and (b) creates a sympathetic youth and adult opinion to back the progressive aims of the schools. The lead for this has to come from the top.'

The Contribution of General Education to Agricultural Development Primarily in Africa, paper prepared for the Agricultural Development Council, Inc., 1965.

most active of the adult population, whatever their educational background, as initiators and trainers; (e) to maintain the alertness and if possible improve the capacity of those who have fallen out of the primary education system, through simple social organization with some educative content; (f) while pursuing every long-term policy which will maximize simple forms of employment for primary school leavers, to develop also short-term methods which will provide useful activity, training and a contribution to national effort; (g) to consider the implications of all these measures for the future planning of educative services.

2 Labour force, employment, school leavers

The latest estimates for population and labour force were being prepared by Robert S. Ray for the Tanzanian Government at the same time as this monograph was being written. His report and this monograph were therefore written simultaneously but wholly independently—a fact which may add weight to those points upon which both reports agree! However, with the kind consent of the Tanzanian Government, Mr. Ray was able to release to the author the basic figures in Table 1 and in the paragraph following it.

TABLE 1. Population and labour force (in thousands)

	Male	Female	Total	Rural	Urban ¹
Total population (1964)	5 127	5 121	10 248	9 783	465
Population 14-64			5 439		
Labour force ²	2 189	1 616	3 805	3 663	142
Total wage-earning employment (1964)			352		

NOTES

1. Settlements containing 5,000 or more Africans in a gazetted area
2. The non-institutional population 14 years and over less those outside the labour force

The educational attainment of the rural labour force has been calculated as follows¹: 1,966,000 for those with no education; 1 million in standard IV; 545,000 in standards V-VII/VIII and 152,000 above standard VIII, making a total of 3,663,000.

While these figures show clearly enough the small section of the total labour

1. In Tanzania the term 'standard' is used to designate the first eight grades of primary education. These primary standards are being reduced progressively from eight to seven years.

TABLE 2. Educational progress of age group (approximately 8 years) available to enter standard I in 1961/62 (Tanganyika)

Age group	In thousands	In percentage
Did not enter school (1962)	117	46.8
Up to four years' education	81	32.4
Up to seven years' education	45	18.0
Entering secondary (1969)	7	2.8
Total age group	250	100

force which is in wage-earning employment and the general levels of educational attainment, it is of especial interest to look at the educational history of a particular age group. Table 2 has been prepared from projections of enrolments supplied by the Ministry of Education.

If the 243,000 children who will have had anything from no education at all to a full primary course are to be considered, what are their prospects of wage-page employment?

The Directorate of Development and Planning estimated a growth of total wage employment to 460,250 in the fiscal year 1968/69,¹ of which the monetary sector of agriculture would contribute 197,500 and manufacturing 42,050 (almost double the 1964/65 figure).² The longer projection to 1978/79 gives a figure of 728,300 with an annual growth rate of 5.1 per cent in employment and of 7.7 per cent in gross domestic product.³ Here it is worth mentioning that even such high gross domestic product growth does not necessarily result in high rates of employment growth—for example, in Mexico a growth of over 7.0 per cent per annum in gross domestic product gave only a 2 per cent growth in total employment.⁴ However, even if the most optimistic forecast is accepted, it is clear enough that employment will still fall very far short of the available labour force, which by 1979 will be well over 4.5 million. For the present five-year plan (1964-69), Thomas and Seal estimated the total of new jobs at 116,000; standard VII/VIII leavers at 231,520 and all new entrants to the labour market at 1,150,000.⁵ If the jobs available are considered along with young people reaching the age of 16 in the single year 1969, the comparable figures are: 23,000⁶ as a total of new jobs; 40,000⁷ for standard VII leavers

1. *Survey of High-level Manpower Requirements and Resources for the Five-Year Development Plan, 1964-65 to 1968-69*, prepared by the Manpower Planning Unit under the direction of Robert L. Thomas, the Ford Foundation Manpower Adviser to the Directorate. Dar-es-Salaam, Government Printer, 1965.
2. It is recalled that employment was falling in the period 1960-64 (from 417,000 to 351,000).
3. Later figures by Thomas give growth rates of 7.1 per cent and 14.9 per cent respectively.
4. Charles N. Myers, *Education and National Development in Mexico*, Princeton, 1965.
5. R.L. Thomas and J.B. Seal, paper to East African Staff College, 1965.
6. Five per cent per annum wastage (death, retirement, etc.) on 450,000 employed implies 22,500 vacancies per year.
7. The figure will probably rise somewhat.

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(excluding secondary entrants); and 243,000¹ for all 16-year olds (excluding secondary entrants). For these 23,000 jobs all the 16-year olds would compete, not only with adult unemployed, but with all the school leavers for the past five years, except those few who had already found employment.

Thus, it is startlingly clear, both from the total labour force and employment statistics, and from the school-leaver projections, that the vast majority of the young people now in school must be, like their parents, self-employed, and self-employed in the rural economy, where 95 per cent of Tanzania's labour force live. Even the 40,000 who complete their primary course each year without entering secondary will have a very slim chance of finding paid employment—perhaps one-quarter of them may do so every year.

Naturally, the proportions of the problem varies from Region to Region. Thus, in Iringa Region only about 32 per cent of children were entering standard I in 1964, while of the 1,182 standard VIII leavers (903 boys, 279 girls) in 1965 only just over ninety boys and forty-five girls could find places in secondary schools.

In fact, although the number of standard VII/VIII leavers per head of population varies, the proportion of about 10 per cent entry into secondary is kept pretty constant. (More than two-thirds of leavers are boys.) Kilimanjaro Region with probably 85 per cent of all children entering school, with again more than 80 per cent proceeding past standard IV to standard V, is quite exceptional. It provides a number of most interesting hints about the possible course of educational and social development in other Regions once their economic potential is fully developed.

Without labouring these figures any further, it is clear (a) that wage-paid employment will continue to be a small proportion of total occupations—not as much as one-quarter, even by 1980; (b) that, in consequence, to involve a higher proportion of the people in more productive activity means making self-employment more productive; (c) that the vast bulk of self-employment will be in agriculture and all the derivative occupations in the rural economy.

TABLE 3. Places available in secondary education

Region	Standard VIII leavers	Secondary places
Iringa	1 182	135
Dodoma	1 472	147
Arusha	3 000	328 ¹
Kilimanjaro	12 290	1 017
Morogoro	(3 400) ²	(400) ²

NOTES

1. Of this total twenty-seven places are in secondary technical, six in commercial and twenty-eight in teacher training

2. Approximate figures

1. This does not allow for deaths during 1962-69 in the age group.

3 The initiation of rural development

It is essential to stress, and to stress again, that self-employment in peasant farming can be productive and yield relatively high cash incomes; and that much of the wealth of Tanzania comes from the self-employed, e.g., the coffee growers of Kilimanjaro or the cotton growers of the Lake Region.

In East Africa as a whole the dominance of primary industries¹ is readily seen from the statistics of gross domestic product in Table 4.

The object of the Tanzanian plan is both to bring more of agriculture into the monetary economy and to reduce the relative weight of primary industries in the total domestic product. This means a very large transfer from subsistence to cash-crop farming; but it does not necessarily imply a very large movement in agriculture from self-employed farming—perhaps on larger acreages—to wage employment. The peasant farmer, on his own land, growing valuable cash-crops, with co-operative marketing and some common technical and even managerial services, will remain the main basis of Tanzanian wealth.

The Tanzanian five-year plan specifically recognizes this, and it is in terms of productive self-employment in modernized agriculture that much of the growth of wealth in Tanzania is planned. The rough targets for 1980 are: 400,000 households (2 million people) in the non-agricultural sector; 400,000 households (2 million people) in the modern agricultural sector, of which half (200,000) will be on newly opened land; and 2 million households (10 million people) in traditional but improved agriculture.² Thus agriculture and its associated occupations are expected to provide a livelihood for 12 out of 14 million Tanzanians.

TABLE 4. East Africa—Gross domestic product at factor cost, 1964

Sector	Monetary economy	Non-monetary economy	Total (£ million)
Primary Industries	200.2	195.3	395.5
Manufacturing and construction	62.6		62.6
Trade and transport	124.9		124.9
Services	47.3		47.3
Rents (including ownership of dwellings)	24.6		24.6
General government	70.3		70.3
Total	529.9	195.3	725.1

SOURCE

East African Economic and Statistical Review, The East African Statistical Department, June 1965

1. Agriculture, livestock, forestry, fishing and hunting, mining and quarrying. Mining and quarrying is relatively a minor item.
2. *Tanganyika Five-year Plan for Economic and Social Development, 1 July 1964—30 June 1969*, Dar-es-Salaam, Government Printer, 1964.

The existing extension services

It is absolutely clear that the present agricultural¹ extension services and training institutions are not strong enough, either in numbers or quality, to achieve at reasonable speed the national agricultural revolution which is demanded.

To state this without more constructive suggestions is unhelpful. The reason the services are too small is that the recurrent income of government is not large enough to carry a heavy increase in paid agricultural staff. Economy in recurrent expenditure—and in capital expenditure which will involve loan service—therefore becomes a rigid test which any proposal for expansion must pass. Where increases are suggested they must be clearly related to direct increases in revenue.

According to official figures, the expected outputs from training, inside Tanzania and from students now overseas, should be adequate to fill the vacancies in the existing and proposed establishments. Table 5 below gives the main projections on this, showing that expected output from training is able to match requirements *for the established posts*. However, if recurrent finance could be found, the Tanzanian Government would perhaps agree that a considerably higher establishment is needed; and indeed the Thomas manpower estimates use higher requirement figures with a somewhat larger shortfall. At present the service can provide (with local variations) one extension officer to about 1,500 farming families. There is considerable anxiety that, allowing for population growth, this proportion will worsen to 1:1,700 or 1:2,000. An exercise to estimate the staff required to improve the proportion to 1:1,000 has been carried out administratively, but the resulting proposals, when submitted to the Directorate of Development and Planning and to the Treasury, had to be sharply reduced for lack of recurrent revenue to implement them.

TABLE 5. Agricultural services, 1964-69 plan.¹ Summary of manpower requirements and supply

Division	Required (unfilled vacancies plus extra for plan)		Supplied by training (or promotion)	
	Professional	Technical	Professional	Technical
Extension	20	230	20	230
Development	21	94	20	73
Water and Irrigation Departments	30	100	30	100
Veterinary	32	47	32	47
Research	46	20	31	20
Training	19	30	19	30
Total	168	521	152	500

NOTE

1. The author is indebted to the FAC Regional Office, Dar-es-Salaam, for these figures

1. For brevity, 'agricultural' is used to cover agricultural, veterinary, fishery, forestry, agro-mechanic, survey, farm-planning, research—in effect, all the services and skills needed for agricultural advance.

Even 1:1,000 is far below what is needed in an era of rapid transformation. International estimates recommend 1:500 as a minimum target. On the Sudan Gezira scheme (which is now long established and successful), the proportion is 1:250.

Two tendencies are noticeable in Tanzania today. The first is that, on new settlement schemes, and on many others, where major advance is planned or in action, one officer is needed, as adviser or manager, to a far smaller number of farming families. In some cases (e.g., the Upper Kitete Pilot Settlement) there has been a graduate manager for only 100 families. Admittedly, as these schemes expand, and as growers become more experienced, a single manager will cover more farmers. But experience shows that keen, modernizing farmers make more demand on advisory services, not less. Schemes and experiments which are rightly proliferating throughout the country are also building up a staff requirement far beyond current and proposed establishments. A ratio of 1:500, at least in the fast developing areas, will become essential for full success.

The second tendency is to require more specialized staff. The normal training of extension staff would deal with the normal run of subsistence agriculture and cash crops traditional in an area. But crops new to an area are being introduced throughout Tanzania, and the type of activity is being changed by the introduction of mechanization, by new processing, and by specialization. Not only tractor maintenance but the management of a tractor fleet; day-old chick production; bulkseed production; further local processing of coffee, sisal, animal products; a great increase in irrigated farming—all this change begins to require a large number of minor specialists. To give only two examples—the urgent requirements of one regional agricultural officer for an additional eight-member staff included a specialist in bulking seed; an over-all manager for a fleet of eight tractors; an irrigation agronomist for an extensive irrigated zone; a forest nurseryman; a manager for a day-old chick production unit, and a manager for a cotton/cattle settlement scheme. Again, in another Region (Arusha) there is a considerable growth of African farming groups on large, unfragmented mixed farms. Technical and management advice to these groups, some of whom are inexperienced in this scale of farming and short of working credit, is badly needed and quite beyond the strength of the normal extension service to provide. Similar examples could be quoted in each Region visited. The Tanzanian Government is well aware of these needs, some of which may be met by technical assistance or by bilateral aid. But in the longer run these jobs should be filled by trained Africans, and it is shortage of recurrent income which keeps down the increase of training with its consequent salary bills.

Economy in recurrent expenditure

There are a number of ways in which economy can be achieved in government recurrent expenditure on these services:

1. By making high-value crops carry directly the cost of extension services. There are many examples—'outgrowers' schemes for tea (Kenya Tea Development Authority), tobacco (East African Tobacco Co.), cotton (Sudan Gezira Board), and many co-operative schemes which carry the cost of extension in the difference between the price paid to the grower and the selling price. There is, of course, an element of cost in the form of working capital here when new schemes are started. The advisers have to be employed before the new scheme is productive. But successful schemes will absorb these salary costs quite quickly.

The cautionary note to this method is that administrative cost must be kept to an absolute minimum. There is acute danger that, both with boards and co-operatives, the overheads of administration and (particularly) marketing become excessive. This not only loads the economy with unneeded clerks and officials—worse still, low prices discourage the grower from expansion and higher productivity. A very clear distinction needs to be made between essential advisory and technical services and marketing administration.

2. By bringing the farmers to the extension service, rather than vice versa (the doctor's surgery principle). Farmers' training centres (twenty in the five-year plan) may achieve this efficiently. It may be worth considering also the Malawi experiment of having more, but smaller and cheaper, centres (£ 3,000 as against the plan's £ 20,000 capital cost), within bicycling distance of farmers in densely populated areas, staffed by a slight increase of the regular extension service. The economy will only be achieved if the throughput of the training centre is high.
3. By concentrating the extension personnel on areas of high potential and high local energy. The return in increased production per extension worker may be extremely low in areas where either soil or climate conditions are intrinsically bad or the local people are still resolutely conservative. Even in the short tour undertaken by the author there were several instances of cash-crops grown but never picked (cotton and tobacco) because the growers had gone off to sell their maize crop in another district, or on a traditional honey-gathering expedition.

The principle of concentration has a wider importance. It not only means that complementary branches of the extension service can give each other mutual support, and that there is far more chance of paying for the service through increased yields, thus increasing cesses and government revenue; it will tend to create broad zones of higher economic activity, to which population is attracted, in which indirect employment is generated, and in which it will become far more economic to provide roads and social services. This is the principle of 'villagization' on a larger scale. The poorer or more conservative areas will later seek to copy their success and be more willing to accept advice.

Where the extension services are below the threshold of effectiveness, for whatever reasons, the skill and salaries (recurrent expenditures) are being

largely wasted. In Tanzania, with its huge land area and scattered resources, concentration in broad strategic zones is of particular importance. A limited degree of concentration has already been accepted as policy.

4. At the right stage and in the right circumstances it may be worth while to increase the 'infantry' of the extension services by a renewed use of field assistants. This stage may be in eighteen months when the supply of proper supervision (certificate and diploma officers) should be sharply increasing and this implies an early resumption of this level of training. The circumstances are probably where a large number of new schemes are showing signs of success. (There are sixty-three nationally approved projects in Morogoro Region alone, with only eight agricultural staff of diploma level or above.) The type of training required may be for carrying out a mass of simple but essential tasks (dipping supervision, for example) upon which staff with higher training would be wasted. This is a low-cost way of adding to the service.
5. Even less costly is the use of 'model' farmers to encourage and advise others. Their advice is the more acceptable from the visible evidence of their success.
6. It may be possible to use more of the existing expenditure on youth service, national service and community development for direct assistance in agricultural advance.
7. It may be possible to divert funds from certain other services within the agricultural programme to strengthen extension work. (See Section 4.)
8. It may be possible to obtain additional technical assistance in the form of expert personnel. Although not inconsiderable, local costs are involved such as for housing and transport. These are certainly lower than the costs of additional training and full salary payments.

Training

Where the extension staff is carried by the crop, the problem of recurrent finance may be solved, but the staff has still to be found and trained. Nor will diversion or reallocation of financial resources to agriculture of itself create trained personnel. It is therefore submitted that the evidence already exists that the five-year plan in agriculture will require a very early expansion of training, and that this may be needed (a) at field-officer (diploma) level; (b) by resumption of training for field-assistant level (assuming that the target outputs of Tengeru and Ukuriguru agricultural training centres at assistant field-officer (certificate) level are met. In particular, planning of field-officer output will need the greatest care. The output from Morogoro College may be much smaller than is anticipated, if a proportion of students go on to a degree course, as some are sure to wish to do. If there is any danger that Morogoro itself will become a university faculty of agriculture, it would be necessary to start at once to develop an alternative source of

field officers, whether by upgrading the best of the new certificate officers (who also now enter training at form 4);¹ by instituting a new set of courses, possibly designed to produce more specialized officers; or by increasing the number of students sent overseas.

Of the foregoing suggestions for economy, some are designed to transfer the cost of extension from the government to the farmers, others are designed to make more efficient use of existing personnel or finance from other services, and the last invokes overseas aid.

While all these should help to achieve far better results without heavy increase in already planned government expenditure, the total result is still unlikely to be commensurate with the need. To achieve a major agrarian advance quickly will almost certainly imply a considerable and painful transfer of resources from other branches of government expenditure. 'Priority' for the agricultural programme, in hard fact, does imply sacrifices elsewhere, later to be redeemed by rising national income.

4 Economy in methods

The emphasis on economy in the preceding section naturally suggests some examination of the methods chosen to initiate agricultural change with special reference to economy in capital and recurrent expenditures on the necessary educative services. The detail of Tanzania's impressive agricultural programme is, of course, a matter for specialists. But there is one area where a major and vitally important planning choice remains open, and this is in relation to the large programme of village settlement. The government wisely decided to launch this scheme by a number of pilot projects, designed to test its costs and its problems. These schemes have now begun to yield the experimental results which a pilot operation is designed to give, and upon these results will depend important decisions on future capital and recurrent expenditures.

Some seven pilot settlement schemes, and a further nineteen or twenty schemes either assisted by the Village Settlement Agency or taken over from the Tanganyika Agricultural Corporation or under other auspices, already exist. In addition, there is a fast growing number of group farming schemes, mainly advised by the extension staff (Ministry of Agriculture), as well as voluntary schemes of many different kinds. There is already some evidence that many of the crucial objectives for

1. The term 'form' is used in Tanzania to designate the six grades in education at the second level.

TABLE 6. Settler debt (repayable) for a sample settlement

Costs	In £	Costs	In £
House (£ 120 for steel frame plus £ 85 for completion costs)	205	Machinery	60
Land clearing	145	Recurrent costs (2 years at £ 35)	70
Public building costs	36	Barn construction	25
Water charges	14	Roads scheme costs	20
		Subsistence costs	36

NOTE

Total: £ 611, estimated to rise to £ 700 by 1966

which the pilot settlement programme was set up can be achieved with considerably less capital and recurrent expenditures. The £13 million programme of settlement implies an investment of about £800/£900 per farming family, and of this, £600/£700 is treated as a debt incurred by the farmer and repayable over twenty-five years. Much of this expenditure is related to initial mechanized clearing and cultivation, to housing of farmers and to social services. Table 6 shows an approximate sample breakdown of costs for one such scheme.

In contrast, on some group farming schemes, the settlers build their own houses and do much of the work of land clearance and initial cultivation. For example, on the Nduli (Iringa) Group Farming Scheme (tobacco, maize and (later) cattle), the farmers themselves, with the aid of credit loans, made the bricks and built both their houses and the tobacco-barns (one to each group of four or five farmers). After a difficult start (a loss was made in the first year), the groups achieved in 1965 an average of 890 lbs. of tobacco per acre, a net income after repayment of credit of £125 per individual member, the credit being repaid yearly from the crop. They were trained in the new skills by courses in the local farmers' training centre, are helped by a single assistant field officer (with advice from the regional agricultural officer) and have no long-term debt to repay. Although the scheme may go wrong (it is expanding faster than the regional agricultural officer would wish, with now over 600 farmers), this combination of self-help by experienced individual farmers, organized co-operatively and advised by only the regular extension service, shows what can be achieved, at extremely low costs, in favourable circumstances. In contrast, the recruitment of urban unemployed, or wholly inexperienced young men, onto schemes where government and tractors are expected to do most of the work, and where a debt of £600 or more is incurred initially for housing etc., may well prove highly expensive and even agriculturally unsuccessful.

If in fact there is a reappraisal of the government pilot schemes which involves a lower investment, funds so released could well be invested in strengthening the extension service. There is certainly much evidence that the return on employing one efficient extension officer to develop new crops with existing farmers can be

many times higher than that from the same investment on more elaborate transformation or resettlement schemes.¹

The co-operatives have certainly a vital part to play in this agrarian revolution. The intake of secretaries to primary co-operative societies is now reaching the standard VII/VIII level of education (as against an earlier average of standard V), and the co-operative college is obtaining highly encouraging results in the training of this young material. The new Co-operative Education Centre has also great possibilities in improving co-operative management in both societies and unions and in forging closer links with the extension service. Good management skills in the co-operative staff, especially when applied to new settlement schemes, could go far to cut down the need for special extension staff, for small numbers of farming families. A good career structure for co-operative staff, allowing movement between the producing and processing units (the Victoria League Co-operative is developing a vertical structure from raw cotton to textile mill), and even between government and union staff, could do much both to attract and to hold promising young entrants and to relieve the agricultural extension services of much purely managerial and marketing work.

Finally, the advantages of semi-industrial investment in cash-crop production, whether by private companies or public corporations, when associated with 'outgrower' schemes, should perhaps be emphasized again. Such schemes can easily attract overseas capital, whether by loan or commercial investment; they introduce managerial and industrial skills which can be passed on; they offer a good living to small holders on their own land; they can carry the extension costs; and they are large enough to make mechanization economic. This is a formidable list of advantages.

Participation and self-help

The preceding paragraphs have dealt mainly with educative services involving trained personnel and central financing. But the President and the Government of Tanzania have constantly emphasized the need for self-help and the role of village development committees. In this stage of Tanzania's growth and budgetary resources, an immense share of rural development must be carried by the chief beneficiaries—the farmers themselves. Nothing could be more mistaken than to underestimate the real skills which exist within the farming community, and indeed

1. 'Concentration on schemes which require capital and skilled manpower in large quantities for large-scale development schemes is the most expensive road to development. It usually means that . . . government is unable to devote resources to . . . breaking bottlenecks constraining marginal improvements in the small farming systems. These improvements are small but generally applicable on a large scale and result in a much greater potential over-all impact on the agricultural sector.' A.M.M. McFarquhar, 'Problems of Agrarian Development', *Ministry of Overseas Development Conference*. Cambridge, 1964.

among members who are virtually illiterate. The achievement of some mature farmers in group farming and other schemes, in growing new crops by new methods with a minimum of instruction, are deeply impressive. The successful farmer himself is the best advertisement for new methods and he can to some extent be used as a trainer and initiator. Especially where new land is being opened up, the mature farmer, content with a good traditional house if he can see his income expanding, well adjusted to farming life, is a tremendous asset. There have been some suggestions of inducing such men, whose ability is proven, to act as pace-makers in new schemes, and there is a possibility that they could be so induced if a larger acreage or land of higher potential can be offered to them. It is doubtful if modern housing and social services can be afforded as an inducement in the first instance. When the profits from better crops begin to come in, the individual will be able to improve his house and the government will have more to spend on social services.

Central planning and dynamics

To get both co-ordination and drive behind the huge programme of rural change has presented an exceptionally difficult problem, since several ministries (agriculture, lands and settlement, education, health, community development, transport, commerce and co-operatives) are all deeply involved. The new decision to incorporate the Village Settlement Agency in the Ministry of Lands and Settlement may give it a more powerful dynamic. It is clearly vital not merely that there should be machinery for central co-ordination—as there is— but also that there should be clear and thrustful chains of command to execute co-ordinated decisions. Moreover, technical decision by the Ministry of Agriculture must play a key role. For social planning, education, health services or co-operatives cannot make up for one absolutely basic necessity—that land chosen for development and the crops chosen for it should in fact be capable of yielding a high return. If this decision is at fault, or if technical advice on execution is lacking, all the other departments will be frustrated, and capital will be wasted. Worse still, because the economic return will be lacking, there will be no break-through in increasing recurrent revenue and no increase in employment opportunity. This is a matter of priorities in the planning decision; it is included here because it is so closely related to one main theme of this monograph—that economic success must precede and lay the foundation for social services.

Other conditions for agrarian improvement

In conclusion, it is perhaps necessary to say that improvement of agricultural educative services and the methods suggested in this and the preceding section are not, of course, sufficient in themselves to achieve an agrarian revolution. Credit,

capital investment, basic and applied research and many other factors are involved. For most of these, within the limits of finance, plans are already made. At an even more basic level, present systems of land tenure and of social custom in some areas may be major obstacles to progress. The point which I am stressing is that, at the final time of action, when capital and credit and technical knowledge are all available, there is still the need for a much greater provision of the human educative service—the men and women who can help, encourage, persuade and teach the farmer and the farming community to adopt new ways.

5 Indirect effects on employment

The benefits of agricultural development have been considered mainly in relation to the farmer, his crop and his income. But there are both national and local benefits far outside this. The national economic benefit is outside the main scope of this study. It is enough to mention that in many classical cases the capital for major industrial development (with its increased urban employment) has been drawn initially from the agrarian revolution (Japan;¹ or the use of cocoa surpluses in Ghana). Professor W. Arthur Lewis has said: 'The failure of peasant agriculture to increase its productivity has probably been the chief reason holding down the expansion of the industrial sector in most under-developed countries in the world'.² Another form of industrialization (and one well suited to the use of 'intermediate technology'³ and labour-intensive methods) is the growth of rural industries and crafts, processing of agricultural produce (such as food, fibres, hides and skins, fish and timber). Another and often neglected benefit is the increased employment in local commercial and craft services which the additional income in farming families can stimulate. The proportion of farmers to other occupations in rural tropical Africa is far too high. This is reflected in the pressure on land (as almost the

1. 'In Japan, in 1880, 80 per cent of the working population was engaged in agriculture . . . Between 1878 and 1915 the index for labour productivity in Japanese agriculture rose from 100 to 236 . . . In Japan no foreign loans were available in the early stages of growth, when all capital imports had to be financed by export earnings from agriculture'. K. Okwawa, *The Growth-rate of the Japanese Economy*, Tokyo, 1957; and Okwawa and Rosovsky, *The Role of Agriculture in Modern Japanese Development and Cultural Change*, Chicago, 1962. (Quoted by A.M.M. McFarquhar, op. cit.)
2. Professor W.A. Lewis, 'Unlimited Labour—Further Notes', *The Manchester School*, January 1958; also W.A. Lewis, *Industrialisation in the Gold Coast*, Accra, Government Printer; Johnston and Mellor, Stanford University, November 1960 (Food Research Institute Studies); W.W. Rostow, *The Stages of Economic Growth*, Cambridge University Press, 1960.
3. See particularly E.F. Schumacher, *Industrialisation through Intermediate Technology*. East African Staff College, 1965.

only source of livelihood) and in turn tends to reduce farm incomes (uneconomic holdings; inability to mechanize, etc.). But when the farmer earns a high cash income which is spent locally, opportunities for employment begin to multiply. He wants a better house—and needs a joiner, perhaps a plumber, and perhaps one day an electrician. He has a tractor—and tractors need maintenance. He is purchasing furniture; clothes for all his family (necessitating tailors or a garment industry even); a radio set, farm equipment, fertilizer, sacks, a pump, Butagas, fencing or wire, ox-harness, etc. His children go to school and their needs increase. The family's diet will improve, and this provides a market for other farmers' products. All this expenditure should result in employment in crafts, distribution, transport, construction and in a host of other obvious ways.

As one example, in the prosperous coffee-growing areas of Mt. Kilimanjaro, there has grown up a group of African 'fundis', mainly carpenters but also handy-men in other skills. They learn by an unofficial apprenticeship with an older man (and may pay a little for this); they first earn a few shillings, later rather more; finally they set up on their own—they can make and put up the doors for an improved house, build a barn (by copying a professionally built model they can build coffee-pulperies), perhaps repair a car engine.

Really widespread growth of commerce in high-income agricultural areas would also quickly outstrip the limited number of Asian traders and provide an increasing opening for educated and energetic Africans. Whether this is handled wholly through co-operatives, employing wage-labour, or whether there will be room for African private enterprise is a political decision; in either case employment results, and there is a need for intelligent and literate personnel. Some of this personnel may well come from prosperous, high-density areas (such as Kilimanjaro) where there is a land shortage.

Processing of farm produce is already emphasized in the plan. At this stage it may often be best if these processing units (and 'cottage' crafts) are small and local, both to avoid heavy transport costs and to disperse employment.¹ At some stage it might be useful to introduce the 'Small Industry Service Unit' which (with the advice and aid of the International Labour Organisation) has proved extremely successful in India and Thailand.² These units provide simple technical and managerial advice to very small industries, and are very easily combined with simple training programmes. The extensive experience of India in this field and the volume of simple technical literature available there could certainly be of interest in Tanzania.

There is one danger to the growth of multifarious enterprise and employment

1. Quite excellent canned orange juice is produced by a small firm in Morogoro, apparently almost wholly for local consumption.
2. And possibly elsewhere.

associated with growing prosperity in rural areas—the danger of over-regulation. The colonial administration in particular was much given to elaborate systems of traders' licensing, minimum shop standards, and a host of petty regulations through which even the enterprising African found it almost impossible to break his way. While the large blocks of export crops, etc. must flow through highly organized channels, the small change of economic activity—which can give a surprising amount of employment, as West Africa shows—needs a high degree of freedom if it is to circulate and multiply.

Simple standards, low costs

It may be appropriate at this stage to emphasize in more general terms the argument for retaining simple standards, simple equipment, simple practical training, modest wage levels, modest types of capital investment in the general structure of an agrarian economy at its present stage in Tanzania. This is not an argument against certain strategic investments of the most modern and expensive type such as the major dam and the electric power station. These may well provide the most economic use of capital for certain major purposes. There may even be a case for the combine-harvester for use one month out of twelve, in special circumstances. But there are in all developing countries, from Nigeria to Malaya, expensive institutions turning out highly trained young men who cannot find employment in an economy with extremely little modern industry and a rural economy which will either employ cheap labour or no labour at all. There are also many occasions where schemes which would greatly benefit a local community are rightly turned down by a government department, because they are too costly. Often, however, they are too costly because of an insistence on building in permanent materials, to costly standards, by departments or contractors with high overheads, paying trade union wages;¹ and in Tanzania, even liable under new regulations to make severance payments if employees are dismissed. In such cases the community gets no building, the standard VIII lad gets no job. Foreign donors, anxious to show their generosity, are apt to set standards in building and equipment which are totally out of scale with the economy, and which, incidentally, make for dissatisfaction with the standards it should rightly use. In a swiftly changing society many economists have stressed the need for temporary buildings, simple tools and equipment, labour-intensive methods, wages which a successful farmer can afford. Change comes so fast that the buildings will need adaptation; crops and methods

1. For a discussion of the tendency for African urban wage levels to outrun productivity, to widen the gap between the urban and rural sector, and to reduce employment, see H.A. Turner, *Wage Trends, Wage Policies and Cambridge Bargaining—the Problem for Under-developed Countries*, Cambridge University Press, 1965.

change and require changed tools. Above all, there are idle hands needing work, which can be given to them if the standard of costs and wages is in tune with the level of national income. More research, and application of research, on low-cost semi-permanent building is badly needed, and the same is true in other forms of intermediate technology.

6 The school leavers—short-term alternatives

Table 2 in Section 2 shows that 97 per cent of Tanzania's children do not enter secondary education. It is for this reason that the earlier sections of this monograph have been concerned with general and medium-term measures to develop economic activity; clearly 'special' measures are not appropriate if they have to be applied to virtually the whole economy! If, however, we neglect for a moment the 47 per cent who never enter school, there remain about 32 per cent who are getting four years and about 18 per cent who are getting the full seven/eight years of the primary course. There is some justification for seeking at least some additional means to help this group, and more particularly the 18 per cent who complete primary, on the principle of not wasting a very large investment which is already being made. The final answer is in increasing full-time employment or productive self employment, through success in the agricultural development programme. The short-term measures are primarily designed to maintain alertness and improve skill in preparation for this.

What in fact happens to these 16-year olds who fail to get a place in secondary school or in any other form of training? Far too little is known with accuracy. After a month of inquiries made in five different Regions in Tanzania, the impression gained was as follows: Urban children will stay in town and try to get work; their aim may certainly be a white-collar job, or entry into a regular form of training. But since only a very small proportion will succeed, the rest will probably be prepared to take casual manual work—on a building site, in a sisal plantation, at a petrol pump, behind the bar in a hotel or cafe. This, at least at first, is a stop-gap measure, until the hoped for job—perhaps as a messenger in a government office—comes along.

For the boys with rural homes, the main pattern is the same, but more difficult. They will, if they can, first stay with a relative in town and hunt for work. For those who went to a boarding upper primary school, the tie with home has already been weakened. If their first try fails, they may get a bus fare from a relative and try the next town, or a big plantation which may need casual labour. They can earn a few shillings by any possible means which comes to hand. After this trial period, if

they are getting desperate they may return to their home village for a while. If they earn a little money—working for a neighbouring farmer or in other ways—they may well set off on their travels again, once more take casual employment, and again return home. There is no accurate evidence for this pattern—a study of it is badly needed—but it is intrinsically probable and borne out by the evidence of teen-agers seen in this type of casual work. Community development staff appeared to find comparatively few standard VII/VIII leavers in the villages; but without specific inquiry they may be hard to distinguish from the standard IV leavers of four years earlier.

While some of the most persistent and enterprising will eventually find a job, and even a training, it is clear enough that all these months, or even years, are virtually wasted. Those who return to unimproved agriculture will have little chance to change it, and eventually, when they inherit land, are likely to have assimilated only the old traditional methods. There is scarcely need to emphasize the appalling waste of lively, trainable young men which this process involves, the loss to the economy, or the political dangers involved.

It is ironic that, because education is more widespread and secondary places have increased, the standard VII/VIII leaver today has even fewer opportunities to become trained. Grade C teacher training and field assistant (agriculture) training are both being discontinued; and all round the list of training opportunities the entry levels have been rising first to form 2 and then to form 4 in most cases today. Each year the threshold of the 'modern', educated, salaried world seems to be rising higher beyond reach of the standard VII/VIII leaver. Yet he is not just the average Tanzanian boy; that is, the boy with standard IV or less: he is still well above average, and more has been invested in him, both by his parents and by the State.

There was wide agreement among officials and others in Tanzania that the standard VII/VIII leavers were, at least on leaving school, extremely unwilling to return to work on the farm. If returning to the farm implies returning to an unreformed subsistence system in a traditional pattern, sustained and virtually enforced by the elders, they cannot be much blamed. Indeed, one very experienced observer believed that only by settling young people away from the pressure of such elders could they be given a fair chance to try modern methods. Many more questions such as the following need to be asked on this first subject:

1. Are the school leavers unwilling to return to modernized farming, where the family income is relatively high?
2. Are they unwilling to enter a new, modernized settlement?
3. Is it the type of farming, or the quality of social life and discipline in the village which is more important in forming their attitudes?
4. Is it felt that they lose face by returning to the village? If so, by whom—the school leavers, their parents, village opinion generally?

5. Is there any difference between those who left the village to attend a standard V-VIII boarding school and those who attend a local 'extended primary'?
6. Would they be more interested in looking after livestock than in cultivating land?
7. Is an individual *cash* earning of great importance? If so, is any cash payment made to young family workers on cash-crop farms?

A second, almost universal opinion is that the type and syllabus of primary education (and sometimes the attitude of teachers) influence pupils against farming as a career, or at least do nothing to prepare for it. The answers to these questions could only be found through social research; some answers might well differ in different tribal and cultural areas. Until these areas are better known it is essential to be cautious in attributing blame, or initiating action. In particular, the effects of revising the primary course (even if this is desirable in itself) might be disappointing, especially if the real difficulty lies in the social system of the village rather than in any influence of the school. This is not an argument against revision of the syllabus, which is certainly much needed. It is simply a caution that the ambient social attitudes have to change too.

What should be the destination of the standard VII/VIII leaver in the rural economy? In general terms he should be an eager participant in a modernizing farm economy, or an employee in the relatively simple crafts and commercial life surrounding this richer farming life—and, indeed, an employee with prospects. Can he be helped to achieve this? A number of current suggestions may be considered:

Direct settlement. Opinion is against any attempt to settle 16-year olds straight from school on their own holdings. It is not only that the boy is too young in physique and experience; he has not yet discovered by bitter experience that white-collar work is not available.

Apprentice settlement. There is one special case where settlement, at least soon after leaving school, may work well, and this is where a boy can be settled as an apprentice-member of an improved farming group. At Nduli (see Section 4), where the tobacco farmers are in groups of four or five, it has been suggested that one such young man could join each group, with a smaller acreage to look after, learning the methods and skills from his experienced partners.

Pre-settlement training. The YMCA scheme at Marangu provides an example of another possibility. The aim is to take sixty young men, about two years after leaving school, and give them a one-year training in modern farming on plots, in varied soil and climatic conditions, after which they would be available to the settlement agency as tested young pioneering farmers for new schemes. A somewhat similar scheme (not visited) is running at Mahiwa, in the Mtwara Region.

If these schemes succeed, and provided that the basic principles of selection and training are observed, such schemes could be widely extended either through the extension service (on training farms as initial sub-pilot schemes on larger areas about to be developed) or by the youth or national service organization, which could run a series of such training farms in varied ecological conditions to supply competent young settlers. Some youth service direct settlements already exist, e.g., outside Dodoma (growing wine) and Arusha (proposed for mixed farming). Experience of direct settlement of similar young men (standard VII/VIII plus two years or more in the hard world before settlement) in Uganda—settlement run by Stephen Kerr in Ankole—appeared highly successful; but these young men had built their houses, had six acres of good land (one acre of tea) and were intending to marry and stay; thus the investment was one graduate to 120 settlers, not one graduate to a constant yearly supply of sixty eligible settlers as at Marangu. The factors which would need careful watching are (a) the supply of really suitable land; (b) the willingness of trainees to start again elsewhere after a year's work on the training farm; (c) the quality of the supervision—not merely technical knowledge but sympathy and firmness in dealing with young people.

National service. One possible use of youth or national service has just been mentioned—the farming training unit. But there could certainly be an argument for a far larger national youth service, through which a good proportion of older teenagers should pass. There is no doubt that, well organized and well officered, such a corps would be valuable to youth and valuable to the national economy. There is a stage¹—and in Tanzania it is now—when a highly mobile 'task force' can perform all sorts of invaluable pioneering services in a developing economy such as clearing land, building small irrigation schemes and bridges, tree-planting and simple construction. What is at issue is the recurrent cost of running such a force on a big scale. (At one stage Zambia found the youth service was costing more than the provision of secondary schooling for its members.) It was impossible to make a detailed study of costs, but no doubt this has been carefully considered (and the costings of the Kenya Youth Service compared).² It is certainly one choice of activity and training which cannot be lightly dismissed.

Craft training or simple apprenticeship. The need for this has been mentioned. It is a sign of over-concentration on 'high-level' manpower, with its standards of full trade school, trade-tested, city and guilds artisans and technicians, that so little

1. In fact, the stage when new infrastructure is being laid down. The 'navvies' in the United Kingdom—mobile labour groups—and similar groups in the United States of America, played a most important part in the early stages of the industrial revolution, while Yugoslavia made great use of students and young people in the early period of nation-building.
2. £ 150 to maintain one serviceman in the field per annum.

has been done lately to provide the simplest additional training for rural handymen—often standard VII/VIII boys—who can both earn a living and perform a most useful service at prices which the farmer will pay. At this moment, when the local self-trained 'fundis' are appearing, the last formal trade school (Moshi) is about to finish its last trade courses (plus a relic course from Ifunda), after which both Ifunda and Moshi will be secondary technical schools and there will be no trade school in Tanzania.¹ The reason is mainly that the number of modern industrial employers who will pay full rates for a fully trained artisan is still too small. Yet, in a 90 per cent rural society starting an agrarian revolution there will be thousands of jobs for rural handymen—vehicle maintenance, pump repairs, blacksmithing, leather and rope work for farms, fencing and, above all, house building. Ironically, the effort to produce rural handymen was tried several times in colonial times—in development centres in Zambia and in Uganda; it failed partly because it anticipated the real growth of rural incomes which is only now beginning to gather headway, partly because certificates and qualifications and trade tests crept in. It could perhaps succeed now.

The simplest and cheapest form would be the establishment of workshop-class-rooms in large villages or semi-urban centres, running extremely simple short courses (perhaps eight weeks) to improve simple carpentry, masonry, and mechanical skills for young potential 'fundis'. Teaching could rest on one all-round instructor plus part-time instruction from local trained men. (The pupils would have to find lodging nearby.) Such centres would be established only in areas where purchasing power was already rising owing to successful agricultural development, so that demand for such services could be confidently assumed. A few pilot schemes of this nature might be worth while as a start.² Such centres might also be associated with the simple forms of apprenticeship like those developed in Kilimanjaro Region. Community development staff or the 'kumi-kumi' organization³ could possibly help in placing apprentices, especially where they had taken the local craft induction course. In West Africa apprenticeship of this type is playing a considerable part in launching young men into a trade.⁴ In Guatemala successful experiments have been made with even more limited help by using a mobile instruction team with a vehicle carrying tools; this stays only a few days in a village and helps local craftsmen and the farmers themselves.

1. Moshi will take in-service trainees alongside its secondary technical work. (This decision is subsequent to the programme laid out in the five-year plan.)
2. *Tanganyika Five-Year Plan for Economic and Social Development op. cit.*, Vol. II, p. 109... states that 'a number of (voluntary) agencies will be encouraged to provide properly equipped craft training centres'.
3. The TANU system of establishing one contact/leader per ten households.
4. Archibald Callaway, 'Adult Education and Problems of Youth Unemployment' in: Carl G. Widstrand (ed.), *Development and Adult Education in Africa*, Uppsala, Scandinavian Institute of African Studies, 1965, pp. 39-56.

Simple commercial classes. This is a parallel suggestion, but the organization could be both cheaper and simpler, since relatively little equipment is needed and a single instructor could cover the range of skills. It could also be done part-time in the form of day or evening classes by an itinerant instructor covering five centres in a small radius, in densely populated areas. Something very much shorter than the grade C teachers' course (perhaps six months) might be enough to train instructors for this type of work. It may be asked if it would be possible that some of the grade C teacher training colleges due for closure might be suitable for training these local vocational instructors.

Social organization—young farmers' clubs, etc. Failing opportunities for immediate employment or training, youth club activity with an occupational content can be extremely valuable. The young farmers' club which has its own plot visits successful farmers, learns calf-rearing, bee-keeping etc. and has an occasional visit from a knowledgeable lecturer, can be a highly successful organization. It may be that either the Tanganyika African National Union (TANU) Youth League or voluntary organizations could do more in this line.

Re-opening of post-standard VII/VII training. Technical and financial considerations make it impossible to re-open discontinued forms of training at this level at present; but if the rural agrarian revolution begins to move faster, the sheer volume of work at a simple level may justify the training of assistants to the more expensive officers with post-School Certificate training who now increasingly man the educative services. Manpower utilization studies within the Tanzanian Government departments, including the Ministry of Agriculture, have suggested that more of the simple work could be done by less highly trained staff.

The standard IV leaver

At the end of standard IV about 32 per cent of each age group leaves school finally; and these are children of 11 or 12. Some national effort and finance have been invested in them, and quite soon they will enter the ranks of those seeking work. It may be wondered if they will have lost the literacy they gained at school. Unfortunately, if they do not read or write any more after the day they leave school, they certainly will. Since further schooling is, by definition, impossible for lack of funds, it is only through social organization that some effort can be made to keep them mentally alert and literate.

The old tribal culture assigned a definite place in society to each main age level, and a definite system of social education leading up to the passage from childhood to young adult status. As this cultural pattern weakens, a substitute is needed which prepares a child better for the modern element in a decreasingly tribal/traditional

world. The scout or guide movement comes to mind for this age group—a movement which teaches its members simple skills for which a badge is given. At present in Tanzania this movement appears to be based almost wholly on the school; but it is outside school that it is most needed, by children who have lost the companionship and stimulus of the school. It is worth asking whether a very junior wing of the youth movement, or of women's organizations, or of the scout movement might not do much to keep these children literate and learning. Some of the simple texts which the East African Literature Bureau turns out would be extremely useful for this purpose. Voluntary social work and youth leadership are badly needed to supplement an educational system which, however regretfully, has to reject so many children at the very moment when they are ready to learn so much.

In Tanzania many of the churches and affiliated organizations have a notable record in social-educational work, and they have in some cases increasing sources of support from overseas. With direct support from the government, additional funds and staff might be mobilized from abroad to keep this very large number of older children in contact with an educative influence at least until they reach an age for paid employment or productive activity. It is also possible that the Community Development Department could take a special responsibility for this group.

All the suggestions in this section would need far more careful and detailed examination between the appropriate departments and voluntary organizations. Some of them might be able to attract foreign aid, either to government or to voluntary agencies acting within government policy. All of them, however, cost money. The sheer numbers of young people leaving primary schools every year is so daunting that there is a temptation to despair of tackling their problem at all. But some methods are cheaper than others; some may be felt more appropriate than others; in some cases foreign aid and voluntary societies can relieve government of some of the financial and manpower requirements. It is surely worth while (a) to decide upon certain preferred methods, having regard to a balance between cost and effectiveness; (b) to test new methods in selected centres; (c) to expand proven successes as finance becomes available.

In all probability not one but several approaches could be tried; schemes which succeed tend to acquire a momentum and a reputation which attracts new money and effort. Only the government and the voluntary agencies are in a position to work out the detailed costings and the scale of effort which is possible from year to year. But the fact that not all can be helped is no reason for not helping some; and the experience gained now will prove increasingly valuable over the next few years as national income rises and greater investment in young people becomes possible. In the long run this problem will be solved because of the tremendous pressures which it generates. It is a question of an early, orderly and considered approach, or of a late and hasty one, probably made in emergency conditions.

7 Implications for the educative services

While the main burden of this monograph is to emphasize the present need for expansion in the agricultural and simple vocational services, in order to provide a broader economic basis for the others, there are also implications which affect the formal educational system itself, as well as other individual services.

Formal education

The basic framework of educational policy is clearly established by the Tanzanian Government and is being strictly maintained. The key decision is to restrict temporarily the growth of primary education, until the economy can generate more recurrent income. This decision provides essential control which gives room for future constructive planning. The extent of restriction must not, however, be overstressed. It is planned, if possible, to keep pace with population growth, so that at least a constant percentage enter primary. This involves opening about seventy new standard I streams per annum, and would bring primary entry up to about 160,000 per annum by the end of the plan period. Meanwhile, secondary places will be expanded to over 7,000 per annum in form 1 by 1969 and the annual enrolment in Dar-es-Salaam University College to 450, or slightly higher. At the same time a programme of concentrating teacher training into ten larger colleges from the existing, twenty-one upgrading grade C teachers and progressively reducing the intake of grade C trainees (possibly to zero by 1968) will be going on.

Two dangers in this situation must be noted. First, the decision to give a good quality primary education to slowly increasing numbers is a courageous one. It is bound to be strongly attacked in areas where school entry is less than 50 per cent of an age group. It will have to be carefully and constantly explained and defended.

Second, the scales of fortune are very heavily weighted in favour of the lucky 2.75 per cent who enter secondary, and especially as to training opportunities. Those who pass School Certificate (and even some of those who fail) are at present virtually guaranteed either entry to training schemes, salaried employment or (about 25 per cent) entry to form 5. For the moment a very high proportion of form 5 entrants will reach the university—the plan states that 680 will enter form 5 in 1964 and 400 will enter the university in 1966. Meanwhile the opportunities for training for standard VII/VIII leavers are being reduced. This level of entry is either disappearing or has disappeared for teacher training, agricultural training (Tengeru and Ukuriguru), community development training (form 4 is now to be the standard entry level), and most medical training. Thus there is not only a danger of the upper layer of society drawing away from the lower, but of destroy-

ing the bridges between the two. That entry-points to certain vital training systems should rise is inevitably right; but some lower forms of training and opportunity, in substitution, are needed for the primary leavers; and the later sections of this monograph have been primarily concerned with the forms these might take. It might be added that another bridge could be made by a more open career and salary structure, so that the standard VII/VIII leaver, if he performs effectively, can rise well into the ranks and salary levels of those who originally entered training from a higher level.

There appear to be three planning issues which arise for the Ministry of Education at this level of the primary age groups, issues which will become more acute as the next plan period draws nearer, and particularly if any finance for expansion becomes available.

The first is whether to devote any small additional resources which may be available to some simple vocational education in rural areas, or to use it for adding new primary streams. The reasoning which supports some vocational expenditure is the anxiety not to waste the huge investment which is represented by current standard IV and standard VII/VIII leavers, who will receive no more schooling. It may be that all this vocational work should be carried by other ministries and services (pre-farm training, national service, youth services, voluntary organizations). But the Ministry of Education has certain experiences and facilities—particularly the experience of training simple teachers and instructors, some surplus buildings (discontinued grade C teacher-training colleges), some evening classroom space, much knowledge of trade training and evening classes through its responsibility for trade schools, secondary technical schools and the technical college. It could scarcely avoid playing a large part, in wisdom and facilities, in guiding the development of post-school training.

The second issue lies in the choice between expanding standard I entry or adding more standards V-VII. The general policy is believed to be in favour of adding new standard I-IV streams. In the light of the general argument of the monograph, this policy should be particularly appropriate in the richer and fast-developing areas, where private enterprise may well be able to find finance for standards V-VII and where the social context will be more stimulating for standard IV leavers. However, in the poorer and more static areas there may be a case for putting more weight on standards V-VII/VIII, for three reasons: (a) there is no local money to add standards V-VII; (b) the social atmosphere is far less stimulating and relapse to illiteracy more probable; and (c) the area will especially need a share of educated local citizens, only obtainable by increasing standard VII output and therefore its share of secondary places.

The third issue is in the contribution the ministry can make to the attitude of primary leavers by the syllabus, and still more by the attitude and atmosphere, of the primary course. What is needed is well known—a primary course which gives

the essential skills of literacy, but with an emphasis on the practical, illustrations from the real conditions of the rural economy, and a power to awaken the imagination of pupils as to the possibilities of a fruitful, modern life in a rural economy which has to be transformed by the application of scientific methods. Only the teachers can achieve this; it is therefore the syllabus and training in the training colleges which counts—and which may have to be watched all the more carefully because a higher proportion of teachers will be ex-secondary pupils, who are rather more divorced from village economy and attitudes than grade C predecessors.

Other educative services

An indication of the possible role of other educative services—community development, co-operatives, national service, voluntary organizations and clubs, and the agricultural extension services—has already been given. Certainly, extremely careful consideration needs to be given to the present concentration of community development on adult literacy work. Over the next five years about 600,000 children of school age will not even enter standard I of primary school, and probably nearly 400,000 will cease school after standard IV. In this situation, adult literacy programmes might seem like an attempt to fill a bath with a small tap while a much larger waste-pipe is emptying it. Two other strategies are possible. One would be to concentrate on keeping educative contact with the standard IV leavers, in whom a large investment has been made; the second would be to concentrate on the support of agricultural innovation, through which higher incomes and eventually more primary schools can be generated. Only if adult literacy were proved to be the greatest single aid to extension work—and this is not yet proved—would the present programme fit this second strategy.

In general, the Ministry of Agriculture and the Ministry of Education must be the two senior partners, the former in creating opportunity for the young manpower of Tanzania, the latter in helping them to use it: the other departments and organizations are allies and assistants to the main thrust of policy. There is ready-made machinery for co-ordination from village development committees upwards—an example is the Morogoro Regional Committee for placing school leavers, in which the regional education and regional agricultural officers play a leading part.

Wider implications

The social dangers of a situation in which 3 per cent of an age group, by virtue of getting secondary education, enter a life of high opportunity and usefulness while 97 per cent see even the opportunities of training diminish, surely need emphasis. It would seem clear that some new chance of progress must be put before the primary leaver whose predecessor, only a few years ago, could become

teacher, clerk, artisan, extension worker. Some interim action to alleviate this situation—which is in the nature of a national emergency—is needed. In the longer term the answer is not in palliatives but in the creation of economic opportunity which also brings economic wealth. It is for this reason that, of the two senior partners in educative effort, agricultural extension and every service which stimulates economic growth in the rural economy must come first. Until they succeed, much of the investment in formal education will still run to waste.

8 Summary of argument

A large part both of the natural and of the human resources of Tanzania is at present only partially developed. Less than one-tenth of the labour force is in paid employment. Most of the able-bodied men and women, 95 per cent of whom live in the rural economy, are still engaged in relatively low-yielding agriculture and herding.

To increase the proportion in modernized production needs not only capital but much strengthened educative services. These include not merely formal education but all services which provide advice, technical assistance, and training in various forms to the producer. While the industrial sector will absorb an increasing but still small proportion, only a modernized rural economy is large enough to affect the great bulk of the labour force.

• At present it is impossible to provide modern productive employment for more than a small fraction even of those who have completed a full primary education, still less for those who have had only four years or less. It can thus be stated that investment in formal education has outrun investment in those other educative services directly aimed at increasing production and economic opportunity. To this extent, expenditure on formal education is partially wasted.

It is therefore argued that, for the present, the highest priority is needed for services which actively foster an agrarian revolution, while the further expansion of formal primary education is temporarily restricted.

Since shortage of extension services is mainly due to shortage of recurrent revenue, with which to train and pay staff, and since revenue is short because of low productivity, the only way to break the vicious circle is to increase extension services with an absolute minimum of additional recurrent expenditure by the government. A number of methods to achieve this are suggested.

Further economies in capital and recurrent expenditure may be possible after appraisal of the results of pilot settlementschemes, thus releasing financial resources for further strengthening of extension staff.

Successful modernization of the rural economy would set in train some highly beneficial results:

1. Higher farm incomes mean higher purchasing power, leading to increased employment, in services to the farmer, in distribution of consumption goods, and in industries which can be established once there is a market for their products.
2. Higher farm output also encourages the development of processing industries for farm produce.
3. Higher output increases the yield of cesses and taxation, thus providing local and central government with additional recurrent revenue from which additional educative services can be provided.

More widespread, simple craft and commercial training is badly needed in rural areas to fit primary school leavers for this increasing range of employment in a developing rural economy. A number of suggestions are made for such a programme.

While the medium-term solution to the problem of providing more productive and acceptable employment or self-employment lies in rapid agricultural modernization, in the short-term action is needed to preserve the morale and improve the training of school leavers who cannot find worth-while employment. A number of suggestions are made, particularly concerning pre-settlement farm-training, youth service, national service and the activities of community development, co-operatives and voluntary agencies.

While the main strategy of formal educational planning is well fitted to the present situation, some question is raised concerning the discontinuation of training from a standard VIII entry-point (grade C teachers, field assistants, etc.). Since over 97 per cent of an age group do not enter secondary education, it would be unfortunate if all entry-points to training were raised beyond their reach. Addition of simpler forms of training (mentioned above) and possibly a limited continuance of post-standard VIII training for rural instructors and operators of many kinds may need to be considered.

Some consideration is given to the co-ordination of other educative services—community development, youth service, co-operative training, national service—with the two principal services of school and agricultural education. It is suggested that two main criteria should be used in considering expansion of these services: (a) they should contribute directly to raising economic output and thus to raising recurrent revenue; (b) they should help to preserve and make fruitful the existing investment in education. In particular, community development might be more concentrated on schemes directly aimed at increasing production, and on maintaining and improving the literacy and training of standard IV leavers.

Finally, the extreme importance of the agricultural extension services is restated.

IIEP publications

The following publications are obtainable from Unesco and its national distributors throughout the world:

Educational Planning: a Directory of Training and Research Institutions
1964. Also available in French

Educational Planning: a Bibliography
1964. Also available in French

Educational Planning: an Inventory of Major Research Needs
1965. Also available in French

Problems and Strategies of Educational Planning: Lessons from Latin America
1965. Also available in Spanish

New Educational Media in Action: Case Studies for Planners
Three volumes. In preparation

The New Media: Memo to an Educational Planner
W. Schramm, P.H. Coombs, F. Kahnert, J. Lyle
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