



UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL



Distr.
LIMITED

E/CN.14/WP.6/40
30 September 1974

Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA

MIDDLE-LEVEL MANPOWER REQUIREMENTS
AND TRAINING NEEDS IN AFRICAN COUNTRIES

by the Secretariat ^{1/}

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^{1/} A study prepared by the Manpower and Training Section, Human Resources Development Division of ECA.

MIDDLE-LEVEL MANPOWER REQUIREMENTS AND TRAINING NEEDS IN AFRICAN COUNTRIES

I. INTRODUCTION

(a) The lack of knowledge about middle-level manpower

It is frequently remarked that shortages of middle-level or intermediate manpower of various kinds are restricting development efforts in different ways. This is usually expressed in terms of the resulting under-utilization of the scarce high-level manpower, e.g. a doctor's inability to function effectively without a staff of trained nurses to support him. Alternatively it is asserted that the scarcity of skilled or supervisory middle-level manpower limits the possibilities of job-creation for the unskilled and semi-skilled. ^{1/} But beyond these general observations on the bottleneck nature of current supplies of middle-level manpower vis-a-vis different development activities, little detailed information on either the nature or extent of the problem seems available. Moreover, appropriate policy measures to satisfy the current and future needs for middle-level manpower are generally lacking. Hitherto, the main effort has been devoted to the satisfaction of high-level manpower needs.

A further complicating factor in defining the problem is that middle-level manpower is not a static entity. Both the nature and occupational characteristics of middle-level manpower are changing as economies develop and stocks of educated people increase. This aspect will be discussed in greater detail below. In the rest of this Introduction we will go on to examine some of the distinguishing characteristics of middle-level manpower, its changing nature, some of the questions about middle-level manpower that need to be answered, and finally to indicate the scope of the present study.

(b) Some characteristics of middle-level manpower

Attempting to define middle-level manpower is not easy. Evidently the term refers to a group who fall in between those at the top, who use their own initiative and direct the work of others, and those at the bottom who follow instructions and carry out routine jobs. These latter two groups correspond roughly to high-level and low-level manpower, the former normally being considered to require some kind of tertiary education, while the latter need only a certain minimum of education, or even none at all, to carry out their unskilled and semi-skilled tasks. By contrast, middle-level workers frequently both receive orders from above, and direct the work of others. Similarly, the educational requirements for middle-level jobs can vary from a partial primary education upwards, according to the nature of the work and the level of educational development in the country concerned.

^{1/} I.L.O. Employment Policy in Africa, Pt. 1 Problems and Policies, Geneva, 1969..p.42

Among the basic characteristics of middle-level work are a significant degree of personal responsibility, the necessity to exercise judgement within certain usually well-defined parameters, a supervisory relationship with one or more semi-skilled or unskilled workers, but little or no requirement to take any kind of innovative or precedent - setting decisions. In other words, middle-level workers have certain usually well-defined tasks to carry out, but an appreciable degree of personal initiative in deciding how to go about them, and frequently may draw on the services of other less skilled workers to assist in the achievement of these tasks. Of course in a particular middle-level job situation such characteristics are applicable in varying degrees, but all of them are likely to be present to some extent in any middle-level position. Jobs possessing these characteristics are to be found in all types of economic and social activity, in both the public and private sectors. Hence a very wide range of occupations are middle-level occupations, or include a proportion of persons working in middle-level type jobs.

This extreme occupational heterogeneity constitutes one of the most complex aspects of any study of middle-level manpower. Among major occupational groupings of middle-level manpower, the following may be singled out for mention at this stage:

- (i) Teachers at the primary and possibly lower-secondary levels.
- (ii) Medical and health staffs, e.g. nurses, qualified midwives, health assistants, various medical and laboratory technicians.
- (iii) Clerical, accounting, and sales personnel. These may be identified as the "staff" members of the labour force in private enterprise undertakings, in particular those occupying supervisory positions, and their equivalents in the public service. Therefore junior personnel such as shop assistants, typists, and junior clerks would be excluded, whereas, e.g. stenographers, personal assistants, bookkeepers, and sales supervisors ought to be included.
- (iv) Craftsmen. The persons to be covered under this heading are the foremen and master craftsmen, who will normally have apprentices, learners, or semi-or un-skilled workers under their direction. Almost by definition these positions are not open to school-leavers or recent trainees, as a large part of their required qualifications is substantial job experience. However, the relation between these position and apprenticeship arrangements etc. which supposedly lead to them, needs investigation.
- (v) Technicians and Scientific Workers. Assistants to engineers and scientists in experimental work, and supervisors of routine operations, plant installation and modification, etc. Also meteorological assistants.

- (vi) Transport and communications workers. This category includes a wide variety of occupations such as air traffic controllers, rail operations supervisors, broadcasting and telecommunications supervisors and technicians.
- (vii) Agricultural, forestry and fisheries workers. In particular those supervising the implementation of projects in the field, e.g. for extension conservation, regeneration, whether working with individual farmers, fishermen etc. as government agents, or for large-scale commercial operations, e.g. plantation agriculture, lumbering.

The groups of occupations listed above include some important areas of female employment, e.g. nursing, teaching, secretarial work. Given the widely felt need to expand employment opportunities for women and girls, and their increasing access to education in many countries, the female component of the middle-level workforce is one which particularly requires further examination.

A further complex characteristic of middle-level manpower, apart from its occupational heterogeneity, is that it is to be found in all sectors of the economy. But while some middle-level occupations are characteristic of particular sectors, many others, e.g. clerical and sales workers, some types of transport workers, are found in a number of economic sectors. This factor needs to be taken into consideration when discussing the development of training facilities.

Not all of the holders of middle-level positions necessarily stay permanently at that level. There may be instances of graduates who enter various types of middle-level jobs as a form of preparation for entry to high-level posts within a more or less short time. This practice is known in developed economies, and it would be interesting to know whether it also occurs in developing countries, as it obviously has an impact on the composition of new manpower requirements. Similarly, long-time holders of middle-level positions may on occasion be promoted to high-level jobs on the basis of long experience, particularly in managerial fields, and conversely various types of semi-skilled workers may with experience move up to supervisory or more skilled positions at the middle-level. Thus many or even most middle-level occupations cannot be regarded as terminal, and sources of recruitment are not limited to the output of the formal educational systems.

(c) The changing nature of middle-level manpower

Economic development implies increasing diversification of economic activities, and hitherto has often resulted also in the introduction of more modern production techniques. On both of these scores, new occupations may be created in a country, at the middle-level as at other employment levels.

Conversely, the introduction of a new industry or new production processes may lead to the supersession of previous activities, or a particular natural resource may be exhausted, possibly leading in, either case to the disappearance of certain occupations. Thus there are a number of influences at work in a developing economy potentially leading to modifications of the occupational composition of the employed labour force, and this applies at the middle-level as at other levels of employment. Even if occupational titles remain the same, the content of the work associated with a particular occupation may change over time due to the factors mentioned above.

The characteristics associated with middle-level manpower also vary with changes in the qualifications of new entrants to middle-level occupations. As African educational systems develop, the number of new entrants to the labour force with a given number of years of education is increasing. This increases competition for jobs requiring education, and leads to a tendency to raise the level of educational qualifications demanded for entry to a particular job, e.g. primary school-teachers, who may previously have received only a primary education themselves, are now increasingly recruited from those with at least a completed lower secondary education or a B.E.P.C. in the majority of African countries. Again as increasing numbers of educated girls enter the labour force, this circumstance may also have repercussions on the composition of middle-level manpower.

These considerations indicate the desirability, in any study of middle-level manpower, of continually bearing in mind that the entity to be studied is not a static one. There is a need to consider not only the characteristics of middle-level manpower, but also the trends of change, in assessing future demand and the policies to satisfy it.

(d) Questions about middle-level manpower that need answering.

The basic objective of studies of middle-level manpower must be to contribute towards the provision of the personnel required to service the continuing socio-economic development of each country. This implies in the first instance finding ways to satisfy current and future requirements for scarce middle-level manpower. A starting point is to build up a comprehensive picture of the current employment of middle-level manpower, by occupations, and current and anticipated shortages as seen by employers. Subsequently, following this approach, it would be necessary to make a further independent assessment of future middle-level manpower needs, and then to indicate policy measures (e.g. provision of additional training facilities) to ensure that the forecast needs are satisfied.

In practice, however, the situation is likely to be more complicated. Many countries are now experiencing the simultaneous occurrence of scarcities of middle-level manpower and the presence of growing numbers of job-seekers, in particular the products of secondary education, looking for middle-level jobs for which they are at best only partly qualified. This is reflected in the presence together of vacancies and significant unemployment.

The reasons for this joint occurrence of vacancies and unemployment need to be analysed as a prerequisite for policy measures to satisfy middle-level manpower needs. This will involve the examination of a number of aspects of manpower utilization, such as the age and sex structure of the employed labour force, and of job-seekers, and also the elucidation of employers' recruitment practices and preferences. But first the mechanism of the simultaneous occurrence of vacancies and unemployment needs to be examined in more detail.

African populations are generally young, as compared to those of developed countries, due to their relatively recent rapid increase, and this is reflected in a predominantly young employed labour force (the expansion of the modern economic sector and of the educational system are also both relatively recent phenomena in most of Africa). Thus most occupants of posts requiring, say, more than a completed primary education, are also relatively young, perhaps under 45 years of age. This implies that wastage due to deaths and retirements is not yet a significant factor in labour turnover. On the other hand localisation and economic expansion have recently been major sources of new employment opportunities in African economies, and while the significance of localisation in this context has now declined in most countries, efforts to provide more jobs through continuing economic expansion are increasing, particularly in view of the recent growth of emphasis on employment creation as an objective of national development.

It may be expected, therefore, that most African countries will in future show a growing demand for new workers to satisfy the needs of economic expansion and employment creation, plus a limited growth of demand as the natural wastage of a mature labour force has to be fully covered, but a diminution of demand as the requirements of localisation are met. Except in the case of a few high-level occupations, predominantly administrative in character, which were previously largely expatriate-held, this picture implies that for most types of employment there will be a continuing demand for new workers, though its extent will vary between occupations according to the structure of economic development in any particular country. Conversely, under the joint stimuli of decolonisation and localisation, African countries have also experienced rapid growth of educational enrolments, so that the output of educated entrants to the labour force has also increased rapidly ^{1/}. The current picture is therefore one of vacancies for many kinds of skilled workers paralleled by a growing number of primary and secondary school-leavers seeking jobs of different kinds.

At first sight it might be expected that the joint occurrence of these two phenomena would result in their progressive disappearance as increased numbers of school-leavers were recruited to fill vacancies. Yet both vacancies

1/ The parallel ECA study "Evaluation of Secondary School Enrolment and Output in relation to Middle-level Manpower Requirements in Selected African Countries" gives detailed attention to this aspect.

for skilled workers and unemployment among school-leavers continue to exist and even to increase. Many possible factors contributing to this situation may be mentioned.

In the first place, there is probably a tendency for the numbers of school-leavers to increase faster than the numbers of new job opportunities. That this is so is suggested by the increasing efforts to make job creation a concomitant of all new development projects, particularly in the context of relieving subsistence-level poverty. But since the successful creation of large numbers of unskilled jobs in turn depends on the provision of middle-level supervisory staff, this in turn implies a further pressure to bring educated job seekers into contact with middle-level employment opportunities.

There are two obvious ways of entering any type or level of employment, either from outside the employed labour force, or by promotion or transfer from another form of employment.^{1/} The first of these avenues of entry is of particular concern to school-leavers as a group, while the second refers mainly to an older group, or at least to one with more work experience. This latter group probably has fewer formal qualifications, but in the eyes of many employers more than makes up for this by its experience and more realistic work and salary expectations. The drawbacks, from an employer's point of view, to recruiting school-leavers for middle-level jobs, are their lack of any work-experiences, the possibly limited relevance of their education and training for the job in question, and their frequently inflated aspirations with reference to earnings and job responsibilities. Reasons such as these have been cited in many studies for the reluctance of employers to recruit school-leavers for middle-level jobs. On the other hand, the possibilities of internal promotion to middle-level positions from within the employed labour force may be limited in most African countries by the poor educational background of the present stock of lower-level workers, from which promotion candidates would have to be drawn. Again, the relative attractiveness of experience and education as qualifications for recruitment to middle-level positions vary in different types of work and different sectors of the economy. As an initial generalisation, it may be observed that the public sector is better equipped than a private employer to absorb the costs of recruiting and training inexperienced school-leavers. Also, possession of the educational background necessary to make a recruit more easily trainable is perhaps more important in some technical occupations, where job experience counts for less than the capacity to absorb new information and make immediate use of it.

Even supposing that school-leavers did have reasonable aspirations with regard to their potential employment in middle-level position, it may still be doubted how far they would be recruited by employers. Such a doubt stems from the unlikelihood that most teenagers or young people possess

^{1/} Another possibility is to recruit badly needed middle-level manpower from another firm or organization, but this is only a solution at the level of the recruiting body, the problem of shortage merely being transferred to the body from which the recruit comes.

many of the qualities required for satisfactory performance in middle-level positions. By definition they cannot have the experience necessary as a basis for the decisions which have to be taken regularly by occupants of many middle-level positions. Similarly, supervision of frequently older subordinates will be difficult for a young and inexperienced person unable to command the necessary degree of respect. These considerations suggest the need for preparatory training for middle-level positions to be more than simply vocational in character.

The structure of incomes and incentives in many African countries is such as to discourage many school-leavers from seeking middle-level positions except as a last resort, and then only on unrealistic terms. Many newly-independent African countries carried on with expatriate terms of service for their newly-appointed African senior administrators. This in effect created a privileged class of highly-paid senior officials, with a vested interest in maintaining this situation, and also control of most of the positions of power, which permitted them to do so. The salary differential between this group and others is in most cases considerable. Hence there is a temptation to school-leavers to avoid immediate employment and seek ways of obtaining additional education in order to qualify for high-level positions, even though the competition for these is intensive and tending to increase. Those who succeed in fulfilling the qualifications for entry to a high-level position, but are unsuccessful in finding an opening, then feel themselves to be over-qualified for entry to a middle-level position, and accordingly are reluctant to take this latter step. In such ways the existing pattern of salaries and conditions of service in African countries, especially in the public sector, militates against the successful placement of school-leavers in middle-level positions.

The urban-rural gap and its implications for development is another consideration potentially affecting the satisfaction of middle-level manpower needs. Virtually all African countries are predominantly rural, yet much of the thrust of development has been concentrated in a few urban areas where most industrial and commercial activities are located, as are the majority of government establishments. Thus high-wage, employment opportunities are also concentrated in these locations, and so are the better educational facilities. By contrast the rural masses have remained largely neglected, and the benefits of development have passed them by. Education and wage employment have become associated with the urban centres, and this has encouraged the drift of semi-educated youth from rural areas in search of what they consider acceptable employment. But the increasing emphasis on rural development implies increasing numbers of new middle-level job opportunities in rural areas, to provide the cadres of officials to lead development projects, to foster agricultural self-employment, and to encourage rural enterprise. ^{1/} To the extent that such rural development efforts are successful, they will in time also provide additional commercial opportunities which may be taken advantage of by those with education. These factors suggest that the current equation of the possession of educational qualifications with urban employment will become progressively less realistic, and increased efforts will be needed to orient urban-focussed school-leavers towards jobs in the rural areas, if newly-created rural middle-level employment opportunities are to be filled, and rural development encouraged.

^{1/} In this context, see the paper by A.A. Mironov, "Intermediate Manpower : the Gap in Development Strategy". New York, UNITAR, 1972. pp.3-4.

Another of the problems involved in satisfying middle-level manpower requirements derives from the changing female participation in education and employment. Many countries are committed to the increase of female participation in the national life, and in many cases female enrolments in education have increased faster than male enrolments, though admittedly from a very low initial level. This implies an increasing need to create female employment opportunities, and to overcome the resistance of husbands and sometimes parents to girls working. A variety of service occupations at the middle-level, such as secretarial work, nursing and teaching, are particularly suitable for female employment in the first instance, so that in such areas male employment may be expected to decline relatively. Also female middle-level employment may be expected to expand more rapidly in the towns, because that is where many of the immediately suitable opportunities are available, and also where social resistance to female paid employment is likely to be least. In due course, as female participation in various types of training and education increases, they may be expected to enter a far wider variety of middle-level jobs. The implication of these developments for male aspirants to middle-level employment is likely to be greater competition for entry to the types of job not yet open to women, and also for entry to jobs in rural areas where women compete less as yet.

The foregoing paragraphs have attempted to indicate some of the issues which need to be considered in the assessment of middle-level manpower needs and the preparation of policy measures to satisfy such needs. It is not enough simply to quantify additional needs and then propose additional training facilities on the requisite scale. Attention must be given to the extent to which employers prefer to recruit new entrants to the labour force for middle-level positions, or to promote existing lower-level workers. It is also necessary to investigate and assess the influence of some of the factors mentioned above which may impede the smooth working of the transition from education or training to paid employment. Only then can proposals for training policies be made, probably in the context of other proposals designed to ensure the efficient satisfaction of middle-level manpower requirements, and a higher rate of absorption of school-leavers.

(e) The scope of the present study

The aims of the present study are limited. This is primarily because much of the information that would be necessary to conduct the types of study suggested in the previous section is scarcely available in most African countries. Also, as the foregoing remarks have indicated, middle-level manpower is not an entity which lends itself to precise study. The term is not one whose content is universally agreed, due to the imprecise boundaries of its coverage, and the very varied occupations which can be included. This is the more so since conventional occupational classifications are based on the type of work involved, whereas the concept of middle-level manpower refers rather to a particular level of work in a wide variety of occupations. Some occupations may be completely outside the middle-level, while in certain other occupations a proportion of those employed may properly be described as middle-level manpower, and a third category of occupations may be wholly comprised of middle-level manpower.

The present study will confine itself to attempting to ventilate some of the many unsettled, and sometimes barely formulated, questions about middle-level manpower stocks, requirements, and training policies as they relate to Africa. Because of the limitations of existing data, and in particular the limited comparability of much of what is available, the study will not be primarily quantitative in character, though it will draw on African and other data wherever it exists and is appropriate. The main purpose of this type of study must be to clarify the issues, to pose questions more clearly, and where possible to point a way towards some of the answers.

The first part of the study will discuss some of the characteristics of the currently-employed middle-level manpower in Africa, going into such factors as age, sex, and educational background to the extent that available data permit. This will be followed by a consideration of future requirements for middle-level manpower, based on the information to be found in various national manpower reports and forecasts. A subject for special consideration is the potential role of middle-level manpower in rural development. The other major concern of the study will be with the new training policies necessary to turn out the middle-level manpower required for the further development of African countries. The study will conclude with suggestions for further studies and research.

II. CURRENT EMPLOYMENT CHARACTERISTICS OF MIDDLE-LEVEL MANPOWER

(a) Introduction

Even to provide basic employment figures for middle-level manpower is difficult because the entity under consideration is not easily defined and does not fit readily into conventional occupational classifications. Meaningful international comparisons are thus made all the more difficult. What follows can only be considered as roughly illustrative in relation to the type and extent of information which is desirable.

A further complication arises because the anglophone and francophone African countries by and large use different systems of occupational classification in their manpower studies. The anglophone countries usually either use the ILO International Standard Classification of Occupation (ISCO) ^{1/}, or some locally-oriented derivative of this. For a study of a particular level of manpower the ISCO has certain limitations, in particular because it concentrates primarily on distinguishing occupations, and gives less attention to the level at which they are performed. The revised edition has gone some way to correct this, e.g. by introducing distinct occupational categories for certain types of supervisors and foremen. But it still remains difficult to evaluate the responsibility levels of such occupational categories as managers and working proprietors, especially in major group 4: sales workers, and this may also be true of some artisan occupations especially in the construction industry and printing.

For the francophone countries a system of occupational classification ^{2/} has recently been devised which attempts to remedy the limitations of the ISCO by creating four educational qualification levels into which each occu-

^{1/} ILO International Standard Classification of Occupations.
(Revised Edition). Geneva, 1969

^{2/} See in particular: Betti, M. et al Classification des emplois et planification des ressources humaines. Paris, IEDES, 1970.

pation may be divided (not all of these levels are filled in every occupation). The rationale of the approach derives from the public sector, where the different job levels have prescribed educational qualifications for entry. By also defining the character of the work undertaken at each qualification level, irrespective of occupation, this system permits the equation of manpower needs with training needs, and the specific identification of middle-level manpower needs. But it is less clear that private sector jobs can always be readily equated with particular educational qualifications for entry, except as a theoretical ideal, or that private employers, especially the smaller ones, think this way in trying to satisfy their needs for additional manpower. Thus there is a danger that formal qualifications for work may be over-emphasized at the expense of more clearly job-oriented training related closely to the needs of a particular employer, and perhaps organized by him. The risk is that rigid adherence to the approach of this system may lead to an over-emphasis on formal qualifications for entry into employment, and hence an over-investment in formal training, irrespective of the readiness of employers to recruit the graduates of such programmes. In fact, there is growing evidence that for many jobs employers prefer to recruit less educated persons and give them on-the-job training, rather than use the formally better-qualified graduates of vocational training institutions.

If anything, the system adopted for occupational classification in the francophone countries perhaps tends to go too far in the opposite direction of emphasizing the required levels of qualification, at the expense of specific occupational requirements, as compared with the ISCO. This is reflected in the tendency of manpower studies for francophone countries to concentrate on the requirements for manpower with particular levels of qualification, rather than requirements in specific occupations.

This facilitates the identification of overall middle-level manpower requirements, but makes more detailed studies at the occupational level difficult.

With these remarks as a background we turn to a consideration of some of the available data on middle-level employment in specific African countries.

(b) Some Recent Examples of Employment of Middle-level Manpower

(i) Malawi: The 1971 Manpower Survey undertaken in Malawi provides detailed occupational data covering over 80% of the estimated high and intermediate level manpower (called HLLMP in the Survey). This is broken down into a number of categories relating to levels and types of work and responsibilities. For each category the desirable educational background is also indicated. The most relevant categories for our purposes are 4,5,6,

1/ See, e.g. Zamiti, Khalil. "Problematique de la contradiction survenue entre formation professionnelle et emploi en Tunisie" Revue Tunisienne de Sciences Sociales, n°. 25, mai 1971. especially pp. 25-27.

and a small part of 2. These are defined as follows, together with their preferred educational backgrounds ^{1/} :

Category	Description	Educational Requirement
2	Middle and Junior Management : general managerial staff not involved in policy-making decisions, plus top managers in small enterprises.	School Certificate plus <u>either</u> a university degree and 5 years job experience <u>or</u> 10 years' job experience.
	(The only workers in this category who fall clearly within our concept of middle-level manpower are small numbers of office and production supervisors)	
4	Technical and Sub-Professional : occupations requiring formal training but to a lower level than professionals and usually involving direct support of professionals.	School Certificate plus <u>either</u> diploma (up to 3 years) <u>or</u> up to 5 years' job experience.
5	Skilled Craftsmen and Artisans : Sub-technical occupations requiring manual skills.	Primary education plus up to 5 years' job experience, <u>or</u> Junior Certificate plus 2 years' job experience.
6	Office Workers : general office workers with no supervisory functions.	Junior Certificate <u>or</u> School Certificate (depending on precise job), plus up to 2 years' diploma course <u>or</u> 2 years' job experience.

^{1/} Malawi Manpower Survey, 1971 - Results of the Survey and Analysis of Requirements, 1971-80. Zomba, 1972. p.42

(again it is open to doubt whether all of the workers in this category fall strictly within the concept of middle-level manpower, since the group 'other clerks not elsewhere classified', comprising over half the total for the category, has been described in an earlier manpower survey ^{1/} as being mostly very low-paid, and hence probably poorly qualified and with limited responsibilities.)

On the basis of these categories, and subject to the limitation of coverage noted earlier, employment of middle-level manpower in Malawi in 1971 may be shown as in Table 1 below, which gives data for categories and also for some of their main constituent occupations..

Table 1: Middle-level Manpower in Malawi, 1971

Category	Occupation	Code (ISCO)	Total Emp.	Malawian Component	Vacancies
2	including: Production Supervisors and General Foremen	(7-00)	426	249	18
4.			10260	9529	300
	including: Civil Engineering Technicians	(0-33)	145	87	43
	Electrical Engineering Technicians	(0-34)	153	64	3
	Mechanical Engineering Technicians	(0-35)	219	58	121
	Agronomic Technicians	(0-53-95)	104	140	43
	Medical Assistants	(0-02)	798	790	13
	Professional Nurses	(0-71)	196	111	10
	Accountants and auditors	(1-10)	193	105	15
	Secondary Teachers	(1-32)	610	247	-
	Primary Teachers	(1-33)	7148	7148	

^{1/} Robert Brown: Report on Survey of Requirements for Trained Manpower in Malawi. mimeo, 1967, paragraph 53.

Table 1 continued.

Category	Occupation	Code (ISCO)	Total Emp.	Malawian Component	Vacancies
5.			14164	13585	402
including:	Agronomic Assistants	(0-54)	1195	1194	80
	Veterinary "	(0-66)	415	415	37
	Secondary Technical Teachers	(1-32-10)	195	194	4
	Social Workers	(1-93)	1244	1241	1
	Forestry Assistants	(0-32)	492	492	2
	Supervisors/Foremen	(7-00)	371	218	17
	General Fitters	(8-41)	382	325	9
	Electrician	(8-55)	242	215	8
	Printing Pressmen	(9-22)	101	100	-
	Carpenters	(9-54)	1696	1606	17
6.			7241	6581	172
including:	Clerical Supervisors	(3-00)	105	64	-
	Stenographers	(3-21-10)	341	82	7
	Bookkeepers	(3-31)	366	326	20
	Bank Clerks	(3-31-40)	257	233	-
	Accounts Clerks	(3-96)	480	393	13

Source: Malawi, Manpower Survey 1971 Appendix A7

From the examples of middle-level manpower given in section (b) of Chapter 1 above, it is open to doubt whether all of the occupation in Table 1, or more especially all of their members, qualify for consideration as middle-level manpower. Against this there is the possibility, that, for example, even the most junior carpenter may in time become a master-craftsman with his own assistants. Thus a truer picture of the current stock of middle-level manpower in Malawi could only be obtained by supplementing the above occupational data with age and earnings profiles of the members of any given occupation. Unfortunately also, no sex breakdown of middle-level manpower in Malawi is available from the 1971 Manpower Survey.

- (ii) Tanzania: As one of the African countries making the most determined efforts at planned development, Tanzania's approach to the provision of middle-level manpower is of particular interest. For some years the authorities have followed a policy of using manpower requirements as the guideline for all provision of educational facilities beyond the primary level. Thus the manpower survey undertaken in conjunction with the Tanzania Second Five Year Plan 1964-1974 divides occupations into a number of categories, according to the educational inputs they require. In relation to middle-level employment the significant categories are:

Category B - Jobs which normally require from one to three years formal post-secondary (Form 4) education/training.

Category C - Jobs which normally require a secondary school education for standard performance of the full array of tasks involved in the occupation. This category includes the skilled office workers and the skilled manual workers in the "modern crafts". ^{1/}

The Survey was estimated to have covered 73.8% of all non-agricultural wage and salary employment in Tanzania, and a much higher proportion of high- and middle-level manpower, since the larger employers, which were those mostly surveyed, provide the great majority of jobs at these levels. Accordingly the employment recorded in the two occupational categories mentioned above was as given in Table 2 below, including some of the major constituent occupations.

Table 2: Middle-level Manpower in Tanzania, 1969

(No occupational codes are given in this table as the coding was done according to the unrevised ISCO)

Category	Occupation	Total Emp.	Tanzanian Component	Vacancies
B		10943	8797	668
	including: Nurses	2155	1754	169
	Primary Teachers (Grade 'A')	2009	1881	-
	Draughtsmen (General)	172	94	39
	Engineering Technician (General)	1095	659	174
	Agric/vet/Forest/Fish/Game	2411	2323	48
	Extension Worker (Cert. Level)			
	Agric. Extension Worker (Diploma Level)	321	200	17
	Accountants (Non-certified)	744	453	85

^{1/} Tanzania: Tanzania Second Five-Year Plan for Economic and Social Development, vol. IV, p.4. Dar-es-Salaam, 1969

Table 2 continued.

Category	Occupation	Total Emp.	Tanzanian Component	Vacancies
C		29083	25486	2607
	of which Skilled Office Workers	20330	18074	2415
	including: Executive Officer, Government	1683	1513	446
	Bookkeepers, Cashiers and			
	Office machine Operators	2248	1996	34
	Stenographers and Typists	2377	2007	595
	of which Skilled Manual Workers	8753	7412	192
	including: Transport Service Inspector			
	(Railway)	358	252	11
	Fitter-Machinists, Toolmakers,			
	and Machine-Tool Setters	437	342	14
	Mechanic-Repairman (Vehicles)	2060	1843	36
	Electricians	859	723	19
	Telephone and Telegraph			
	Operators	622	595	20

Source: Tanzania, Tanzania Second Five-Year Plan for Economic and Social Development, vol. IV. tables 5 and 6

One disadvantage of these figures for our purposes is that they make no separate distinction for foremen and supervisors in most cases, these being merely included within their respective occupations. Also there are no age and sex breakdowns of employment. However, the preliminary findings of the National Urban Labour Force Survey, 1971 ^{1/} suggest that the commonest employment of women at the skilled level and above is in clerical and office jobs. The final report of the Survey should provide more information on this question.

- (iii) Ivory Coast: As was mentioned at the beginning of this Chapter, the occupational classification system used in the francophone countries is different from the I.S.C.O. The following data from the Ivory Coast show employment in the private and parastatal sectors at the levels which correspond to middle-level manpower. Unfortunately it has not been possible to obtain comparable data for the public.

^{1/} Tanzania, Annual Manpower Report to the President, 1971 Dar-es-Salaam-1971 . pp. 92-111.

Table 3: Middle-level employment in the private and para-statal sector, Ivory Coast

Professional Categories (see note)	<u>Ivory Coast Citizens</u>			<u>Total Employment</u>		
	males	Females	Total	males	Females	Total
Maitrise	2490	183	2473	4861	826	5687
Employés qualifiés (catégories 5 et +)	5569	736	6305	7262	2171	9433
Ouvriers qualifiés (catégories 5 et +)	10259	155	10414	14384	249	14633

Source: Côte d'Ivoire, Office National de Formation Professionnelle, Le Secteur Privé et Para-Publique en Côte d'Ivoire, 1971, 3ème partie: La main-d'oeuvre salariée-tableaux statistiques. Abidjan, April 1972, p.6.

Note: The professional categories referred to in the above table may be described as follows:

- (a) Maîtrise - Foremen and supervisors
- (b) Employés qualifiés (catégories 5 et +) - Skilled clerical and accounting workers.

- (c) Ouvriers qualifiés (cat. 5 et +) - Skilled and highly skilled manual workers and artisans.

The very noticeable differences between total employment and the numbers of Ivory Coast citizens employed is mainly due to the presence of many non-African at the supervisory levels and among the female component of the skilled clerical workers, whereas Africans from neighbouring countries largely account for this difference in the case of skilled manual workers and male skilled clerical workers. Most of the female employment in these categories is found in the services sector.

The Ivory Coast authorities have also undertaken very detailed sample surveys of the above categories of workers within the industrial sector of the economy,^{1/} some of the findings of which are of considerable interest, although unfortunately the sample included scarcely any females. In the tables which follow, the same employment categories are used as in Table 3 above.

^{1/} Achic, Françoise. Travailleurs Qualifiés et Agents de Maîtrise du Secteur Secondaire - Résultats Statistiques
Abidjan, Office National de formation professionnelle
May, 1970.

Table 4: Average ages of middle-level manpower in the Ivory Coast industrial sector

Type of work/Employment Category	5	6	7	Supervisors
Manual and Technical	35.1	34.9	34.0	32.5
Administrative and Clerical	29.7	31.0	32.0	37.8

Source: Achio, F. Travailleurs Qualifiés et Agents de Maîtrise du Secteur Secondaire, 1970, Table 4, p.13.

As can be seen from Table 4, the average age tends to decline as the level of employment increases in the technical occupations, whereas average age and level of employment rise together in administrative occupations. The probable explanation for this contrast is that, for technical occupations, employers prefer to appoint younger workers, who are normally much better educated, to higher level jobs including supervisory positions, instead of the older and more experienced but less- or even un-educated workers. In the larger modern sector establishments from which the sample of respondents for the survey under consideration was drawn, supervisory positions would normally be expected to involve an appreciable degree of literacy, and perhaps numeracy, in order to work effectively. By comparison, at least a certain basic level of education is required even to enter the administrative group of occupations. Thus, in this case the educational differential is less significant, and experience becomes a much more important factor in promotion to the higher levels. It may be hypothesized that as education spreads through the population, so that new entrants to even the lower categories of middle-level manpower are relatively well educated, the age profile in technical occupations will in time come to resemble that now found among the administrative group.

The educational background of this same group of workers shows wide variations, illustrated in Table 5.

Table 5 - Level of Education by Employment Categories (in Percentages)

Employment Category	Level of Education	Illite- rate	Under 6 years Primary	6 years Primary	Incomplete First Cycle Secondary	Completed First Cycle Secondary	Bac. Com- Pleted 2nd cycle Secondary	Total
<u>Technical occupations</u>								
5		54.1	27.2	12.5	5.3	0.9	0	100.0
6		35.0	28.4	19.0	10.0	6.2	1.4	100.0
7		18.2	16.4	25.4	12.7	18.2	9.1	100.0
Supervisors		7.4	13.2	23.1	17.4	25.6	13.2	100.0
<u>Administrative Occupations</u>								
5		12.1	6.1	37.9	24.2	18.2	1.5	100.0
6		1.7	11.9	37.3	25.4	20.3	3.4	100.0
7		2.0	2.0	37.2	29.4	23.5	5.9	100.0
Supervisors		2.4	7.1	42.9	23.8	19.0	4.8	100.0

Source: as for Table 4 above, Table 33 and 34, p. 48.

For the technical occupations there is a clear correlation between employment category and level of education, with both rising together. This bears out the previous suggestion that employers have sought younger and hence more educated workers for the higher level posts in this group of occupations. At first sight this finding appears to be at variance with the suggestion made in the introduction to this Chapter, on the basis of research findings elsewhere, that employers seek less-educated recruits to many types of technical employment. A reconciliation of these two points of view may possibly be effected by noting that in the Ivory Coast sample, even at the supervisory level, nearly half of those employed have only a completed primary education or less, and this proportion rises rapidly in the lower employment categories. Furthermore, the enterprises covered in the sample tend to be large and probably mainly expatriate-operated, so may not be typical of the economy as a whole in their hiring policies. Also, the employers' opposition to employing better-educated recruits, noted from other countries, refers particularly to the graduates of secondary-level vocational education, a group which is only lightly represented in the Ivory Coast sample.

Among the administrative occupations, the relation between education and level of employment is less clear, because of the requirement for at least a basic education before entry (though this raises the question as to how a small percentage of illiterates are recorded in these occupations). Moreover, since promotion is more a function of age and experience, and education tends to be less among the older groups, age and education are in opposition to one another in their relationships to the level of employment.

Only 13% of the sample referred to in the above tables had followed some course of vocational training before employment, and only some two-thirds of these had succeeded in obtaining the respective qualification. In general, both attendance at and successful completion of such training were found to be more frequent among the upper employment categories, suggesting that they had some favourable influence on promotion. The only exception to this generalisation was in the case of the lowest employment category (5) of the administrative occupations, of whom almost a third had previous training. But this may be explained by the relative youthfulness of this group, and hence their greater access to educational and training opportunities. ^{1/}

A slightly larger proportion of the Ivory Coast sample, nearly 20% had received some kind of refresher or up-grading training in the course of their working lives. In general those workers who had received special training before recruitment were also more likely to have participated in further training during their work. But the rate of successful completion of further training was rather low, less than 25% of those participating, i.e. under 5% of the total sample. Most of the successful trainees were in administrative occupations or at the higher levels of the technical group, suggesting that their better basic education was a factor in their success.

- (iv) Cameroon. The information available from Cameroon on middle-level employment in 1971 again follows broad categories on the lines of the IEDES classification referred to in the Introduction to this Chapter. The two relevant categories for middle-level manpower studies are "technicians" (Supervisory-level) and "personnel qualifié" (Skilled workers), and in Table 6 their employment in the public and private sectors is shown, broken down into technical and administrative occupations for the private sector.

^{1/} Achio, op.cit., pp. 50-53

Table 6. Middle-level employment in Cameroon, 1971

Employment category	Private Sector		Public Sector (1970)
Supervisory level			
Technical occupations	3302	}	2326
Administrative occupations	1571		
Skilled Worker-level			
Technical occupations	13322	}	4063
Administrative occupations	5788		
Total	23983		6389

Source: Cameroun, Emploi et Formation au Cameroun (Elements Statistiques) June 1971. Table 3, p.6, Table 10, p.24, and Table 11, p.25

(v) Senegal: For Senegal slightly more detailed though less recent information on middle-level employment in the modern sector of the economy is available. The employment categories used are the same as in Cameroon.

Table 7. Modern sector middle-level employment, Senegal, 1968.

Employment category	Private Sector		Public Sector		Total
	Senegalese	Non-Senegalese	Senegalese	Non-Senegalese	
Supervisory level					
Technical occupations	820	1055	1934	126	3935
Administrative Occup.	710	769	8373	66	9918
Skilled worker level					
Technical occupations	3534	115	2780	54	6483
Administrative Occup.	3420	1836	5881	14	11151
Other occupations	1656	213	2338	148	4355
Total	10140	3988	21306	408	35842

Source : Verspoor, A. l'Evolution de l'Emploi Salarié et les Besoins en main-d'oeuvre au Sénégal. Dakar, UNESCO, 1972. Annex 1

The large employment of non-Senegalese in the private sector, especially at the supervisory level, is noticeable. Another notable feature is the large proportion of employment in administrative occupations, especially in the private sector, as compared with both Cameroon and Ivory Coast. This is perhaps an indication of the relative lack of development of secondary activities in the Senegalese economy. Finally, the scale of middle-level employment in the public sector in Senegal, nearly 22,000, appears very large by comparison with that for Cameroon, which is a larger country and moreover has a more complex federal administrative structure. It may be suspected that the Cameroon figures are incomplete, e.g. through the exclusion of teachers.

(vi) Kenya: Similar data are available from the recent Kenya manpower survey, as shown in Table 8, which covered employment in the modern sector.

Table 8. Middle-level employment in Kenya, 1972

Occupation	Private Sector		Public Sector		Total
	Citizens	Non-Citizens	Citizens	Non-Citizens	
Semi-professional or technical	5819	4391	17520	3580	31310
Skilled office and clerical	10599	3086	10580	1360	25625
Skilled manual	13414	3117	4420	480	21431
Total	29832	10594	32520	5420	78366

Source: Kenya, A Preliminary report on the Kenya High- and Middle-level Manpower Survey 1972 (Kenya Statistical Digest, December 1972,) Table 4.

Total modern-sector employment was some 670,000, so that middle-level employment thus represented about 12% of employment in the modern sector. Again, a notable feature is the substantial employment of non-citizens, particularly in the private sector and at the semi-professional level, though in Kenya's case this may be largely accounted for by the Asian

community. Another interesting feature of middle-level employment in Kenya which is not shown in Table 8 is its concentration around the capital. The same source ^{1/} shows that 79% of semi-professional and technical level employment, 73.2% of skilled office and clerical employment, and 50% of skilled manual employment were to be found in Nairobi district.

(c) Conclusions

The heterogeneity and varying degree of completeness of the data presented in the body of this Chapter seriously limits their comparability and hence the possibility of drawing many meaningful conclusions. There is in all the countries reviewed a significant employment of non-citizens in middle-level positions, and this tends to be most prevalent throughout the private sector, and at the supervisory level in both public and private sectors. This implies that an appreciable part of future requirements for middle-level manpower will be generated by the drive towards localization.

Information on the age and sex composition of middle-level workers, and their educational background was available only for Ivory Coast, and this was discussed in detail in the relevant section of the Chapter. But it is evident that because of their relatively recent access to any education beyond the primary level, females are as yet only employed in small numbers in middle-level positions. The general experience is that such employment tends to be concentrated in secretarial, teaching and nursing occupations.

The somewhat conflicting information on the age-structure of middle-level manpower provided by the Ivory Coast sample does not permit any further generalization as to the relation between age and employment in middle-level occupations. Concerning the link between education and middle-level employment, it may be noted a significant proportion of such employment is in such professional fields as nursing, teaching etc. for which there are clearly prescribed educational entry qualifications. Again government employment at this level usually has fixed entry requirements. It is in the private sector, and particularly in the craft and artisan occupations, where this link is less obvious, and here the Ivory Coast data indicate the wide variety of educational backgrounds associated with jobs at the same level.

^{1/} Kenya, op.cit, Table 3.

III. FUTURE REQUIREMENTS OF MIDDLE-LEVEL MANPOWER

(a) Introduction

There is widespread evidence that, throughout the world, demand for middle-level manpower is tending to increase. Partly this is a reflection of the previous relative neglect to provide adequately for this level of manpower. But it is basically a function of the increasing requirements for skilled and technical manpower of various types associated with continuing economic development. As economies become more diversified and more sophisticated, their requirements for skilled manpower tend to increase more than proportionately. Even the growing emphasis on labour-intensive production methods and employment creation as adjuncts of development need not falsify this conclusion, since it implies the use of larger numbers of supervisory manpower in particular.

Among examples of the failure to make adequate provision for the production of middle-level manpower, the case of India may be cited, where it has recently been observed ^{1/} that there are more doctors than nurses. Similarly Brazil in another example of a country that has hitherto been short of qualified personnel to fill middle-level positions ^{2/}, with the result that many such positions are filled by under-qualified or untrained persons, to the detriment of the economy's performance.

Italy and France both provide evidence that the more advanced countries also are experiencing a growing demand for middle-level manpower. Table 9 shows figures for Italy indicating the increasing proportion of middle-level manpower in total employment. Growth during the decade 1951-61, when not

Table 9. Italy-middle-level employment
(percentage of total employment)

Occupational category	1951	1961	1975
Supervisory grades	5.8	5.9	11.6
Foremen	0.8	1.0	3.5
Skilled personnel	22.1	28.9	51.6

Source: Gretter, A. The Training of Adult Middle-Level Personnel Paris, UNESCO, 1972. p.58, table 11.

^{1/} Abraham, P.M. "Manpower Planning in India: A review of Studies and Problems" Manpower Journal vol. VII, n° 3, p. 27.

^{2/} Havighurst, R.J. and Gouveia, A.J. Brazilian Secondary Education and Socio-Economic Development. New York, 1969

much attempt was made at overall planning of human resource development, was slow. Data for France, given in Table 10, provide an even more striking demonstration of the anticipated rise in demand for middle-level manpower. As in the case of Italy, very substantial increases are forecast, but in this instance there was also notable growth between 1954 and 1962.

These increases in demand for middle-level manpower in more developed economies imply a need not only to recruit additional school-leavers, but also to retrain substantial numbers of adult workers currently in less-skilled jobs.

Table 10 - France, employment in selected middle-level occupations, 1954, 1962 and forecasts for 1978

(percentages of total employment)			
Occupation	1954	1962	1978
Technicians	1.32	1.79	3.53
Draughtsmen	0.44	0.62	1.22
Midwives and nurses	0.42	0.50	1.07
Primary school-teachers	1.41	1.97	2.41
Secondary school-teachers	0.29	0.43	0.78

Source: Gretter, A. The Training of Adult Middle-level Personnel
Paris, UNESCO, 1972. p.61, table 13

Having indicated briefly the world-wide trend of increased demand for middle-level manpower, we turn to consideration of some examples of Africa's future requirements, to the extent that the data available permit.

(b) Some examples from African countries of future middle-level manpower requirements.

- (i) Zambia: Zambia is one of the African countries which needs to make the greatest efforts to achieve both localization of its skilled manpower and the satisfaction of additional manpower needs. In this context a number of manpower surveys have been undertaken and reports produced, so that a substantial amount of information is available.

The total number of additional Zambians required to fill white-collar jobs, at the diploma level and below, during the decade 1971-80 has been estimated to be about 110,000. In addition there is estimated to be an average annual requirement for additional skilled manual workers of over 7,000. Not all of these additional workers fall clearly within the middle-level category, a proportion in certain occupations probably being not more than semi-skilled. These and other details are shown in Tables 11 and 12.

Table 11: Estimated Numbers of Zambians at Diploma Level and Below required to fill white-collar Jobs, 1971-80.

Occupation	Additional Zambians Required		
	Total	with Diploma	Other
All occupations	109733	30423	79310
of which:			
Accountants	2500	700	1800
Primary Teachers	8290	8290	-
Medical Assistants	1320	1320	-
Nurses (Professional)	1934	1934	-
Nurses (Practical)	2023	2023	-
Health Technicians	530	280	250
Technicians, other than Health	8778	2970	5808
Book-keepers and cashiers	5004	900	4164
Secretaries and stenographers	1500	1500	-

Source: Zambia - Zambian Manpower, Lusaka, 1969. Table 20

The category "Other" mainly comprises non-government managers, presumably mostly in charge of small commercial and trading activities, and unclassified clerical and sales workers. The majority of those requiring diplomas are in the occupations shown in Table 11.

Table 12: Zambia, Estimated Average Annual Requirements for Skilled Manual workers, 1971 - 80

Occupation	Amount of Formal Training			Total
	Extensive	Brief or Intermediate	None *	
All occupations	1733	3680	1747	7160
of which:				
Foremen and Supervisors	300	300	24	684
Welders	42	64	-	106
Carpenters and Joiners	50	368	150	568
Bricklayers and Masons	80	400	408	888
Electricians	250	160	-	410

Table 12 continued.

Occupation	Amount of Formal Training			Total
	Extensive	Brief or Intermediate	None	
Construction Equipment Operators	-	60	45	105
Vehicle Mechanics	200	168	-	368
Plumbers	45	77	12	134

Source: Zambia, Zambian Manpower, Lusaka, 1969, Table 25.

- * The jobs listed as requiring no formal training do however require a varying amount of on-the-job training.

The term "extensive" training as used in Table 12 refers to full-time formal training for a period of 2 years or more, while "intermediate" training is of a formal character but for shorter periods. It may be noted that whereas a majority of foremen electricians and vehicle mechanics are considered to require extensive training, in the case of welders, carpenters and plumbers intermediate training is the norm, while substantial numbers of masons require only on-the-job training. This bears out the suggestion made earlier in the paper that particular skilled occupations include more than one level of skill, so that their significance as a component of middle-level manpower is difficult to delineate with precision.

It is expected that during the 1970's the output from educational and training institutions in Zambia will progressively expand towards satisfying the above-mentioned annual requirements. Already by 1976 it is anticipated that the currently planned outputs in some areas of training will exceed requirements, though in other fields there will still be shortfalls even at the end of the decade ^{1/}, in particular in jobs requiring diploma level qualifications. Particular areas of continuing shortage at the diploma level include occupations in the health sector, and accountants. Another area of major potential shortage relates to those jobs in the craft occupations requiring "extensive" training (see Table 12). Against the annual estimated requirement of some 1700 graduates from this type of training during the 1970s, as late as 1968 less than 100 were being produced each year. ^{2/} Together these various potential shortfalls and excesses in the outputs of Zambian training institutions suggest a need for regular systematic reviews of the whole training structure, with a view to minimising such disequilibria, at least to the extent that the lags inherent in any programme of training permit. Other possible means of avoiding continuing shortages in particular occupations are greater reliance on training facilities abroad, and giving more emphasis to the possibility of obtaining recruits for training from lower level positions. This last possibility tends to be neglected or even ignored in some manpower reports, both for Zambia and for other countries.

^{1/} See Zambia, Second National Development Plan, 1972-76, p.137, Table X-10, and Zambia, Zambian Manpower, 1969, p.67

^{2/} Zambia, Zambian Manpower, 1969, p.79

Conversely, it is expected that the output of the educational system below the lower secondary level will far exceed the possibilities for wage employment. This implies an increasing need to prepare school-leavers for self-employment, and to undertake employment creation activities, in both rural and urban areas. ^{1/} The implications of this trend for the additional skilled manpower needed to administer and supervise such activities, and undertake appropriate training, will also have to be taken into account in assessing future requirements for middle-level manpower.

- (ii) Ivory Coast: As was the case with the studies of current middle-level employment in Ivory Coast, the information available on future requirements is also less detailed than that emanating from some anglophone countries, because the analysis is again in terms of broad occupational categories corresponding to particular levels of qualifications. The national development plan for the period 1971-75 provides some information on the anticipated evolution of the structure of the labour force in different economic sectors, as shown in the following Tables.

Table 13: Ivory Coast, Secondary Sector Structure of Employment (in percentage)

Year	Technical Occupations						Administrative Occupations				
	CS	CM	OQ	OS	M	Total	CS	CM	EQ	ENQ	Total
1969	0.9	3.3	11.3	30.9	42.8	89.2	0.8	1.4	3.6	5.0	10.8
1975	0.8	3.5	15.0	31.9	35.0	86.2	1.0	2.1	5.7	5.0	13.8

Source: Côte d'Ivoire, Ministère du Plan. Plan Quinquennal de Développement Economique, Social et Culturel, 1971 - 1975
Abidjan 1971. Table 4, p.383

Key: CS - Cadres supérieurs (high-level manpower)
CM - Cadres moyens (technicians, supervisors and foremen)
OQ - Ouvriers qualifiés (skilled workers)
OS - Ouvriers spécialisés (semi-skilled workers)
M - Manœuvres (unskilled workers)
EQ - Employés qualifiés (skilled clerical workers)
ENQ - Employés non-qualifiés (semi-skilled clerical workers)

In Table 13 the categories which are of concern for a study of middle-level manpower are CM and OQ in the technical occupations, and CM and EQ in the administrative occupations. All four of these groups are expected to increase their share of the secondary sector labour force during

^{1/} Zambia, Second Development Plan, 1972-76 p.127

the 1969-75 period, with the increases being more marked at the skilled worker level. Similar data showing the changing labour-force structure are not available for the other sectors of the economy, but data on the additional middle-level manpower required in all sectors during the 1970's are shown in Tables 14 and 15.

Table 14: Ivory Coast, additional requirements for technicians, supervisors and foremen, 1971-75 and 1976-80.

Years	Sectors				
	Primary	Secondary	Tertiary	Public Service *	Total
1971-75	219	3311	3737	1950	9217
1976-80	554	4255	4053	2525	11987

±/ "Cadre B" in the public service hierarchy is assumed to correspond to the "Cadres moyens" in the private sector, and hence both are included in this Table

source: as for Table 13 above, but taken from tables 11, 12, 13 and 14, pp. 385-6.

Table 15: Ivory Coast, additional requirements for skilled workers, 1971-75 and 1976-80.

Years	Sectors				
	Primary	Secondary	Tertiary	Public Service *	Total
1971-75	493	13687	10907	6065	31152
1976-80	2185	17490	14516	7845	42036

±/ "Cadre C" in the public service hierarchy is assumed to correspond to the "emplois qualifiés" in the private sector, and hence both are included in this Table.

Source: as for Table 14 above.

In Tables 14 and 15 the additional requirements for workers include both those due to economic growth and those due to losses from the existing labour force (deaths, retirements, etc.). At both the supervisory and skilled worker levels, the greatest proportionate increases in requirements are expected to be in the primary sector, though this is and will continue to be the smallest user of middle-level manpower in absolute terms. The proportion of middle-level manpower in the public sector appears unlikely to change significantly, judging by the public sector's additional requirements as a proportion of the total. Otherwise it is notable that in all sectors, and at both levels of qualification, additional requirements are expected to be larger in the second half of the decade.

- (iii) Sénégal: Projections for the total additional middle-level manpower required to 1980 are shown in Table 16.

Table 16: Sénégal, Additional Needs for Middle-Level Manpower, 1968-80

Employment Category	Private Sector			Public Sector			Total
	Replace- ment	Locali- zation	Growth	Replace- ment	Locali- zation	Growth	
Supervisory Level							
Technical Occupations	273	1055	799	645	126	1162	4060
Administrative Occupations	237	769	630	2791	66	4760	9253
Skilled Worker-Level							
Technical Occupations	1178	115	1554	927	54	1598	5426
Administrative Occupations	1140	1835	2249	1894	214	3325	10057
Other Occupations	552	213	796	779	148	1462	3950
Total	3380	3987	6028	7036	608	12307	33346

Source: Verspoor, A. L'Evolution de l'Emploi Salarié et les Besoins en Main-d'oeuvre au Sénégal, Dakar, UNESCO, 1972. Annex I.

These projections of additional needs are based on assumptions of complete localisation of middle-level manpower by 1980, (due to deaths, retirements etc.), and annual growth rates of 3% in the private sector labour force and 3.8% in the public sector. While the needs due to wastage and localisation appear unexceptionable, the recent agricultural difficulties in Senegal must make it seem doubtful whether the assumed growth rates, and

consequent demands for extra labour, can be maintained throughout the period. Another weakness of these projections is that they assume virtually no change in the occupational composition of the labour force at each level of qualification (other than slight changes due to the different growth levels assumed for the public and private sectors). Similarly the 1968 structure of the labour force, in terms of the different levels of qualification, is assumed to continue virtually unchanged ^{1/}. But given the growing need for Senegal to devote most of its attention to rural development and agricultural diversification, due to the pressures of drought relief, unemployment and an unviable monoculture based on peanuts, these assumptions of an unchanging labour force structure appear unrealistic. This in turn implies that not all of the proposed additional requirements to satisfy wastage may in fact be needed, since some types of present employment may decline or disappear.

Thus while the projections in Table 16 can serve a useful purpose in showing the implications of uninterrupted growth without significant structural change, revised projections are now needed in order to show what are the more realistic future requirements for middle-level manpower in Senegal, taking account of the probable pattern and rate of growth of the economy. At the broad level of basic categories of manpower (of which supervisors and skilled workers are the two lowest normally used), as described in the IEDES system of occupational classification ^{2/}, the overall figures may not alter so much, but it may be expected that there will be far greater variations as between individual occupations at each level, and hence in the demand for specific types of training facilities.

- (iv) Tanzania: For Tanzania the available sources include a national manpower forecast, and various sectoral studies. The future requirements for middle-level manpower at the national level in different categories, and for particular occupations, are set out in Table 17, covering the period from 1969/70 to 1973/74. This Table follows the format of Table 2 above, which showed current employment for the same groups. The Category B occupations cover those employed at the sub-professional and technician level, while Category C refers to skilled workers; this group being further sub-divided between skilled office workers and skilled manual workers. One disadvantage of this classification is that it does not make any distinction for foremen and supervisors (with one or two exceptions), these being included within their respective occupations.

^{1/} C.f. Table 7 above

^{2/} See the Introduction to Chapter 2 above.

Table 11. Barbados, Additional Middle-Level Manpower Required, 1969/70-1973/74

Occupation	Existing Vacancies (1969)	Localisation Target	New Needs	Total Needs 1/ 1969/70 1973/74	Estimated 2/ Supply
CATEGORY B	668	990	10515	12173	9706
of which:					
Nurses	109	119	986	1274	1274
Primary Teacher (Grade A)	-	51	4923	4974	4974
Draughtsmen (General)	39	31	44	114	60
Engineering Tech. (General)	174	175	435	784	528
Agric./Vet./Forest/ Fish/Game Extension Worker (Cert. level)	48	35	2738	2821	1550
Agric. Extension Worker (Dip. level)	17	48	584	649	Under 500
Accountants (non- certified)	85	116	307	508	N.A. 3/
CATEGORY C	2007	1430	8603	12646	N.A.
(a) of which skilled office workers	2415	901	5262	8578	870
including: Govt. Execu- tive Officer	446	68	286	800	800
Bookkeepers, cashiers and office-machine operators	34	101	915	1050	N.A.
Stenographers and typists	595	148	923	1666	N.A.
(b) of which skilled manual workers	192	535	3341	4068	N.A.
including: Transport Service Inspector (Rly.)	11	42	123	176	N.A.
Fitter-machinists, tool-makers and Machine tool-setters	14	38	183	235	26
Mechanic-repairmen (vehicles)	30	87	779	902	73
Electricians	19	54	352	425	4
Telephone & Telegraph Operators	20	11	210	241	N.A.

Source: as for Table 2.

At the Category B level significant shortages are anticipated to continue in certain occupations, in particular agricultural technicians and agricultural extension workers. These will be difficult to overcome in the short run because proficiency in these jobs depends largely on knowledge of local languages and conditions, which effectively rules out any significant reliance on expatriate recruitment as a solution. Given Tanzania's emphasis on rural and agricultural development, this is a serious shortcoming.

For Category C jobs it is not possible to indicate likely shortages of recruits, because no account has been taken of the products of informal training efforts. Secondary school enrolments and output are being increased to attempt to meet the additional manpower needs specified, but there will undoubtedly be some lags in achieving this, so that at least temporary shortages are likely. Another question arises as to the quality of entrants to Category C positions and their effectiveness on the job. Their inexperience and need for on-the-job training implies that, for an initial period at least, many of these positions will be inadequately filled, so that both the quality and the quantity of output are likely to be diminished.

Moreover, subsequent studies by the Tanzanian authorities suggest that the requirements for additional workers in skilled manual occupations have been underestimated. Thus, of the occupations shown in Table 17, the additional need for motor mechanics from 1969 to 1974 has been increased from 902 to 1351, while for electricians the corresponding increase is from 425 to 559. Further large increases in new requirements during the 1975-80 period are also now anticipated, e.g. 2068 motor mechanics and 724 electricians. ^{1/} In 1971 the combined output of the various training institutions producing for this group of occupations was less than the revised estimate of demand in the relevant trades.

In the medical sector substantial increases in health manpower up to 1980 are planned. As far as middle-level personnel are concerned, rural medical aides should increase from approximately 600 in 1972 to about 3000 by 1980, while medical assistants increase from 300 in 1972 to 1200 by 1980.

Notes to Table 17:

- 1/ In the original source, the totals for Category B and Category C were each increased by 1.89% to allow for citizen wastage. These increases have been excluded here as they were not broken down by occupation in the original.
- 2/ The estimated supply is that which is expected to be produced by organized training schemes. For Category C occupations in particular, most of the supply will come from informal training, and no estimate of this has been made.
- 3/ N.A. = "not available".

The number of trained nurses is intended to almost double, from 3100 to 6100 over the same period. ^{1/} To achieve these increases the number of training centers for rural medical assistants is being built. Other categories of medical personnel are to be similarly expanded, and the whole emphasis of the health effort is to be moved in the direction of preventive programmes, with the major objective of improving the standard of health in rural communities, and hence their capacity for productive activity.

Detailed projections of staff needs in the agricultural sector have also been undertaken, in connexion with the proposed expansion of agricultural education. These data are shown in Table 18, for the Ministry's middle level manpower.

Table 18: Tanzania, Agricultural Sector's Manpower Requirements;

	<u>Additional Numbers Required, 1969-1979</u>	<u>Manpower Stock</u>	
		<u>1969</u>	<u>1979</u>
DIPLOMATES			
Agricultural	702	368	973
Veterinary	236	161	350
Forestry	88	68	136
Fishery	63	18	75
Wildlife	49	22	66
Total	1136	657	1600
CERTIFICATE HOLDERS			
Agricultural	2308	1533	3533
Veterinary	770	693	1335
Forestry	606	279	823
Fishery	268	100	344
Wildlife	298	101	374
Total	4250	2706	6409

Source: Tanzania, Ministry of Agriculture; A Project to Expand and Improve Facilities for Agricultural Education in Tanzania Vol.1, Dar-es-Salaam, 1969. Table 2.02

The additional numbers required, as shown in Table 18, cover not only the needs due to new posts, but also those due to localisation and attrition. The stock required by 1979 is estimated in accordance with what is likely to be afforded by that date, and not according to any theoretical ideal.

^{1/} Tanzania, Ministry of Health, Tanzania Health Sector in 1980, mimeo, 1973. p.2 1970

Foot note of page 32 - ^{1/} Tanzania. Annual Manpower Report to the President Dar-es-Salaam, 1971. Appendix 1, p.17, Table 2 (a)

An interesting point which is not shown in Table 18 is that the rate of increase in the stock is expected to be higher at the diploma and certificate levels than at the graduate level. Conversely the ratio of graduates to middle-level manpower is expected to decline. The rates of increase will also be faster in fishery and wildlife activities than in the other areas.

- (v) Malawi: Malawi has undertaken two detailed manpower surveys, in 1966 and 1971. ^{1/} Since the earlier of these surveys also made estimates of employment in 1970, the 1971 survey thus provides a rough check on the accuracy of the 1966 projections. However, it must be borne in mind that while the 1966 survey covered more establishments, the 1971 survey probably covered a rather greater proportion of the labour force, since it used a broader concept of skilled labour. ^{2/} Given these reservations, comparison of the findings from the two surveys provides interesting evidence of the difficulties in projecting middle-level manpower requirements. Some relevant figures are shown in Table 19.

Table 19. Malawi, actual and anticipated employment in selected middle-level occupations

Occupation	1966 Employment	1966 Vacancies	1970 Forecast	1971 Employment	1971 Vacancies
Medical Assistants	570	53	943	798	13
Veterinary Assistants	224	31	252	415	37
Professional Nurses	161	23	256	196	10
Motor Mechanics	541	22	840	1078	16
Electricians	135	8	179	242	8
Plumbers	98	18	159	240	1
Carpenters & Joiners	769	83	1019	1696	17

Sources: 1966 Survey, Tables III & IV, and 1971 Survey, Appendix A7
(for full references see Chapter 2 (b) (i).)

It is noticeable in Table 19 that the 1966 Survey appears to have overestimated the future needs at the sub-professional and technician level, as exemplified in the figures for medical occupations. This is also found to be so in several technical occupations, and the case of veterinary assistants where the opposite is true appears to be an isolated example. By contrast, at the craftsman and skilled artisan level, the estimates made by the 1966 Survey are substantially below the 1971 employment figures. However, this may partly be accounted for by an observation in the 1966 Survey (para.55) that these estimates failed to give adequate attention to the planned heavy building programme, in particular for schools and for the new capital.

^{1/} See references in the section on Malawi in Chapter 2.

^{2/} Account must be taken of differences in coverage between the two surveys. The 1966 survey covered all establishments with more than 10 employees, but only those employees earning above 140 p.a. The 1971 survey covered establishments with over 20 employees, but all those positions for which some secondary education was considered desirable.

Again, the Introduction to the 1971 Survey remarks on the recent structural changes in the Malawi economy, in particular the rapid growth of manufacturing. It can be suggested that the overestimates at the technician level in 1966 were at least partly due to too optimistic forecasts by some of the government departments which are major users of this type of manpower.

The 1971 Survey restricts its forecasts of future requirements for additional manpower to the broad levels covered by the occupational categories (described in Chapter 2, section (b) (i) above) used in the Survey. It also assumes that the great majority of new positions can be filled by recruits with only academic education and no additional experience. This assumption needs to be clearly justified before it can be accepted. In view of the very broad nature of the 1971 forecasts, and their limited relevance to middle-level manpower needs, they are not considered further here.

(c) Conclusions

The limited extent and non-comparability of the data on future requirements of middle-level manpower available from various African countries restricts the nature of the conclusions that can be drawn. Two points seem clear though. One is that requirements are growing, and in some cases at an increasing rate, or at least faster than the growth in requirements for other levels of manpower. Secondly, some of the projections of needs, at least as instanced by Tanzania and Malawi, have been subject to fairly drastic revision, or have been shown by events to be substantially inaccurate.

This suggests that more thought needs to be given to methods and techniques of projecting middle-level manpower requirements. In particular it is not adequate to make straight-line projections of the existing occupational structure, both in terms of occupational levels and individual occupations. Close consideration needs to be given to possible directions of structural change in developing economies, e.g. in the growth of manufacturing, greater emphasis on development activities in rural areas, etc. and their implications for changes in the structure of the Labour force. Also more thought is required as to methods of satisfying increasing middle-level manpower needs. Is the formal educational system the only, or even the main source of future recruits? (This point is referred to again in the next chapter). Finally, the implications for future skilled manpower needs of the increasing attention being given to employment creation as a goal of development need considering, e.g. requirements for supervisors of various types are likely to increase faster with the widespread introduction of more labour-intensive methods.

With such thoughts in mind, attention is given in the next chapter to the desirable responses of the education and training system to the growing middle-level manpower needs.

IV. FUTURE TRAINING POLICIES FOR MIDDLE-LEVEL MANPOWER

(a) Introduction

The heterogeneity of middle-level manpower prevents any simple prescription for appropriate training policies or programmes. However, the rapid expansion in the demand for various types of middle-level manpower which appears likely implies a need to quickly increase the provision of various types of training facilities. This is particularly true because in the past the training of middle-level manpower has often tended to receive less attention than it merits. But the need is not simply to expand existing types of training facilities. Thought must be given also to adapting the content and approach of training in order to satisfy the needs in qualitative as well as quantitative terms.

At present the attitudes of students, employers, and trainers towards middle-level employment tend to be out of step with one another. It is these discords which need to be removed if an effective mechanism for the provision of middle-level manpower is to be evolved.

Given the relative newness of post-primary education in most of Africa, secondary school-leavers tend still to regard themselves as the intellectual superiors of their elders or contemporaries already in the labour force. This attitude has been widely reported among the graduates from various types of technical and vocational education. They fail to appreciate that only a few middle-level jobs can be performed directly on the basis of formal education, without need of any further training. Furthermore, a basic characteristic of the responsibilities attaching to many middle-level positions is that they require the exercise of judgement based on accumulated experience, which necessarily is not available to the new entrant. Hence the newly-educated are seldom the most desirable recruits for middle-level positions unless they are prepared to undergo a period of further training sometimes of considerable length, in order to become proficient.

From the employer's point of view, the preferred recruit for a middle-level position is someone immediately able to exercise the responsibilities attaching to it, and able to command the respect of any subordinates. The less time and resources that need to be devoted to training the new recruit, the better is the employer suited, since he wants a fully productive worker as soon as possible. This consideration is particularly likely to apply in the case of smaller employers, who will be less able to afford the costs involved in providing extensive training to newly hired personnel.

In theory the trainer should be in an intermediate position between the pupil and his future employer, and be able to bring their interests together. But in practice the standard of vocational and technical instruction is often poor. If the instructors have had an adequate theoretical training, which is often not the case, they generally lack any significant job experience in the trade in which they provide instruction. This means

that their knowledge of their pupils' future working situation is inadequate, or at best based on observation rather than direct experience.

A strategy is needed which can resolve the differences inherent in these various and potentially conflicting attitudes.

(b) Some elements of a strategy for training middle-level manpower

The areas in which action is required to set up an effective system of training for middle-level manpower include the formal educational system, vocational guidance, instructor training, on-the-job and in-service training activities, and upgrading and retraining schemes.

At present the content of secondary education in most of the African countries is oriented towards the goal of facilitating entry to higher education. This is true particularly of general secondary education, but also frequently of vocational and technical secondary education. The institutions providing these latter types of education thus face a dilemma. If the education they provide is terminal in nature they cannot attract good students because of the greater prestige attaching to the academic stream, but if they are not terminal then they risk becoming just another route to higher education.^{1/} In either case they largely fail in the goal of turning out well-qualified entrants to the technical occupations at the middle-level. Such a goal requires that formal technical and vocational education should be related closely to satisfying the educational needs of middle-level manpower, in terms both of curriculum content and also of the approach adopted to the subject-matter. This suggests an education which is terminal in relation to the rest of the formal educational system, but not terminal in the sense that it should aim to create a graduate who is still trainable, i.e. ready and eager to learn more on-the-job when he starts work, and who does not feel he has nothing further to learn. This implies also that there must be clear career prospects for those entering middle-level positions.

In order that such a "counsel of perfection" for the development of education in relation to the needs of future entrants to middle-level positions should be made more effective, a complementary effort is needed in the area of vocational guidance, an activity relatively neglected in many developing countries. At present the belief of many technical education graduates in their own capacities is matched only by their lack of knowledge of job opportunities and the realities of working life. Guidance is required before students opt to enter technical or vocational forms of education, during their studies, and also when they successfully complete those studies or when they drop out before completion, in either case before they enter the job market. Whether guidance should be given by their subject instructors or by specialist careers advisers is open to question, but this issue does lead to consideration of the next component in a strategy for better educating future middle-level manpower, namely the appropriate training and experience of the instructors.

1/ T.D. Williams "The Ashby Report in Retrospect : Lessons for the Seventies" Economic Bulletin of Ghana 1971, vol. 1, No. 3, P.38

Instructors in different types of technical and vocational education leading to middle-level employment need to be more than simply teachers of their particular subject-matter. Besides teaching facts they need also to instill in their pupils the ability to manipulate the knowledge provided and improvise solutions in the light of the situations they are likely to face in their future working life. In many instances this also involves developing a certain manual ability and dexterity relevant to a particular type of employment. ^{1/} In order to be able to pass on such insights and practices the instructors themselves need considerable working experience in the appropriate area, e.g. it is not sufficient to be able to explain to students how to make a particular type of joint in carpentry, it is also necessary to demonstrate the work to them, supervise them doing it for themselves, show them how to avoid mistakes or overcome them, and show them how to improvise when the available materials or tools are deficient. Only in this way can an effective employee be created as opposed to a diploma-holder who can describe how to do things but has no first-hand experience of doing them for himself.

This presupposes too that qualified and experienced instructors are also provided with the necessary equipment and materials for their field of teaching. Unfortunately this is often not the case in developing countries, where insufficient attention may be given to the appreciable recurrent costs involved in many types of vocational and technical education, so that the upkeep and effective operation of institutions is liable to be progressively impaired.

Employers too have potentially an important role to play in the provision of vocational and technical education. As the potential users of the product they should be encouraged to participate in the preparation of the curriculum, as a means of trying to ensure that graduates have developed competences which employers require and can use. Another aspect of employers' involvement is the desirability of institutions arranging with them, possibly through the medium of careers advisers, for periods of vacation work for pupils of vocational and technical institutions. This permits employers to identify potential recruits to their labour force, but more importantly exposes the students to the realities of working life. But to be fully effective, vacation training must consist of a well-designed programme providing the student with a realistic working experience, and not be simply a period of observation.

So far we have written in terms of the need to modify educational practices for those approaching middle-level employment via secondary technical or vocational education. But this is by no means the only route and many would argue not the most important. We must also consider the roles of on-the job and part-time training, and various upgrading and retraining schemes.

^{1/} See R.P. Hennequin "Technical Education in Developing Countries", a paper in C.E.S.O. Educational Problems in Developing Countries, The Hague 1969. pp. 102-3.

These types of training activity are in the first instance of most relevance for those workers already in the labour force who are judged potentially capable of taking on the added responsibilities implied by middle-level employment. Here again a combined effort is required on the part of both the government authorities with a responsibility for training and the employers. ^{1/} The employers' participation is important because of their frequently critical attitude to much of the training that is provided. One way of overcoming this is for them to be involved in deciding the content and method of training, to ensure that it meets their requirements. (This can be a useful exercise for employers too, since frequently their criticisms express the nature of their dissatisfaction with current training, without containing any positive formulation of their needs, which they may not have clearly thought out.)

There are a great many possible forms of training which enter to the varying needs of employees, e.g. refresher courses, upgrading courses, supervisory training courses, courses to introduce the labour force to new production processes or techniques or new types of equipment. Similarly, training can be organized on a part-time basis during working hours or in evening classes, or on a full-time basis during a leave of absence from regular employment.

A number of countries in Africa, e.g. Ivory Coast, Nigeria, Gabon, have established organisms charged with the development of training activities, in which both government and employers participate. In general these organisms function on the basis of financial contributions made by both parties, which are then used to provide training institutions or activities which are meant to reflect the expressed needs of the employers. This appears to be a very useful device for ensuring the active participation of employers in the training of middle-level manpower in particular, and it is noteworthy that other African countries are considering adopting a similar formula.

In the first instance the various forms of training for employees enumerated above have as their goal improvement of the trainees to enable them to assume more responsible or more skilled positions in their respective enterprises. There has been considerable debate as to the best way of doing this. ^{2/} The essential point at issue is whether enhanced competence at work can best be induced through a narrowly-conceived vocational training process, or through some form of adult education approximating more to general education, or through some combination of these two. There is a large body of opinion which says, on the basis of various surveys, that both work performance and supervisory ability are improved if trainees receive some elements of general education in conjunction with vocational training. The trainability of trainees is considered greater the higher their level of previous general education, and to the extent that this is deficient the combination of vocational training with elements of general education can help to make up any gap. Conversely the findings of other surveys have attached far less importance to general education as a requisite for job performance and vocational training. There is as yet no clear answer on this question, but it may be noted that a number of countries have used a variety of institutional devices to introduce a significant element of general education into their workers' training schemes.

^{1/} Kenya, Report of the Training Review Committee, 1971-72 Nairobi, 1972, p.29.

^{2/} See Gretler, op.cit. Ch.6 for a discussion of this question, citing various studies which express conflicting points of view.

African countries for the most part have not yet proceeded very far with the organisation of training facilities for on-the-job, in-service or part-time training. The main exceptions to this generalization are the larger government departments or public utilities which in many countries have developed training activities for their own labour force. By contrast there is generally a dearth of such training, other than in the most informal sense, among private employers. The primary reason is that the growth of enterprises requiring any significant numbers of skilled or supervisory workers is a recent phenomenon which is still inhibited by the scarcity of such workers. Thus private employers seldom have the resources to operate their own training activities. Hence again the pressing need to develop machinery, e.g. some form of national training organ, which can bring together the interests of employers and the national interest in establishing the various forms of training required for the improvement of the labour force. Such an organ must also be, responsible for continuing supervision over the operation of such training facilities, whether they be in the form of specially-created institutions or of activities undertaken on the premises of employers. A further special responsibility of a national training body is to pay close attention to the training needs of small and indigenous employers, often only recently-established, who do not have the capacity to undertake any significant training activities themselves. Larger employers may be induced to participate in such efforts when they realise their own interest in expanding a limited labour supply, and so avoiding mutually damaging competition to attract scarce workers away from other employers.

The first priority for a national training organ is the development of effective on-the-job and in-service training schemes, in order to expand the current stock of skilled and supervisory manpower as quickly as possible. Once a somewhat more satisfactory supply position is achieved, increased attention will also have to be given to retraining and upgrading schemes, to ensure the continuing supply of qualified manpower necessitated by a growing economy, characterized by the appearance of new industries and new production processes. The most important consideration in all of these efforts is that the training provided should be of a standard to ensure the output of well-qualified workers. Too often in African countries employers complain that the available labour is inadequately qualified to work in positions, e.g. at the supervisory level, in which it should be able to function with minimal supervision. An associated requirement is the establishment of standards of performance e.g. through a trade-testing structure, in order that employers can be further assured of the value of the training provided.

V. OVERALL CONCLUSIONS

The main result of this study has been to ventilate some of the hitherto unanswered or ignored questions concerning middle-level manpower—the nature of the concept, the present stock, the future requirements, and training needs. It cannot be pretended that very much light has been thrown on many of the issues which were raised at the beginning of the study, mainly due to the scarcity of information, and the limited comparability of most of what is available. Nevertheless, if it has been possible to indicate some of the areas where further study is required as a prelude to more comprehensive policy formulation for the satisfaction of middle-level manpower needs, this in itself is a useful although limited step.

Among the lessons which can be drawn from the study are the following :

- (a) Middle-level manpower is an entity which is both complex and imprecise. There are no generally agreed limits as to the types of manpower which are to be counted as middle-level, but nevertheless there are many different types of manpower which clearly fall under the category middle-level. This implies immediately that there can be no simple policy prescriptions with reference to the development of middle-level manpower. Detailed policies with respect to particular categories of middle-level manpower will be required.
- (b) It is even difficult to identify the present stock of middle-level manpower in many instances in the first place because of the limited availability of manpower and employment statistics in many African countries, and secondly because where such statistics do exist they are frequently classified by occupations, and it is not possible to see what proportion of workers in the occupation are holding middle-level positions. As we have seen, in many occupations only a proportion of the jobs can be categorised as middle-level. Beyond this, even where we can reasonably estimate middle-level employment, it is almost never possible to find out other characteristics associated with such employment, e.g. age, education, etc. This is particularly regrettable because there is plenty of evidence to suggest that middle-level manpower is one of the most rapidly expanding components of the employed labour force, and it is all the more difficult to undertake planning or policy-making exercises in a dynamic context when even the base situation remains little known.
- (c) Further evidence of the difficulties this lack of knowledge creates can be seen in some of the attempts that have been made to forecast future middle-level manpower needs in African countries. Frequently these forecasts have proved to be wide off the mark. In particular the likely direction and dimension of future structural changes in the economy need to be considered, as a basis for assessing the consequent changes in the structure of middle-level employment, both within the middle-level, and in relation to the other levels of employment. It is suggested that development efforts oriented more towards employment creation are prima facie likely to further stimulate the demand for middle-level manpower, because of the increased supervisory role thus implied.

(d) The training requirements resulting from an increased demand for middle-level manpower have implications both for the formal educational system and for vocational training. On the side of formal education there is a need to rethink the necessary educational background of future entrants to middle-level positions, and to establish the provision of such entrants as one of the legitimate goals of the educational system. This has further implications for teacher-training and the development of vocational guidance services. The other important point is to develop a continuing dialogue between the education and training systems and potential employers and to establish machinery to build on this which can devise new forms of training as required, and also involve employers actively in the provision of such training. Beyond this, any new pattern or structure of training thus developed must have its own built-in review mechanism, to facilitate quick responses to the changing demand pattern for middle-level manpower.

(e) Much further research is required if a better attempt is to be made to satisfy changing and expanding requirements for middle-level manpower.

The first necessity is to develop much better information about the nature and extent of the existing stock of middle-level manpower, and its principal characteristics, by means of detailed manpower surveys. This will permit a better understanding of the deficiencies in the existing stock, a necessary first step in the formulation of remedial policies. The majority of African countries have barely scratched the surface in this respect.

Better knowledge of the current supply situation will also facilitate efforts to project future demand for middle-level manpower. Two areas for particular attention are the need to assess the impact of impending structural economic changes on the utilisation of middle-level manpower, and the need to examine the manpower demand implications of increased emphasis on employment creation as a goal of development. Such an emphasis implies different patterns of labour utilisation, and this will obviously have an effect on the future demand for middle-level manpower.

Lastly, there is need to develop better information on innovations in the education and training of middle-level manpower, and to develop means for its diffusion. Beyond this, both educators (including trainers) and employers should come together to devise new means of training which will satisfy the needs of the employers.