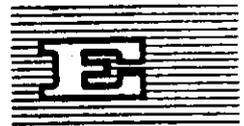


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THE STRATEGY OF HUMAN RESOURCE DEVELOPMENT

IN
MODERNIZING ECONOMIES

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I

Introduction

The newly developing nations of the world are in a state of revolt. They have rejected the notion that poverty, squalor, and disease are preordained. They are no longer disposed to entrust their economic and political future to the free forces of the market, the will of God, or the omnipotent judgment of colonial rulers. On the contrary, they want high-speed modernization. These newly developing nations are resentful of those who caution that economic growth in the presently advanced Western Nations was a gradual process. They are interested not just in economic growth, but are hoping and planning for accelerated development. They think in terms of leaps rather than steps in building a modern social, political, and economic order.

Accelerated development is, of course, a goal rather than a promise or a firm prospect for the future. All of the newly modernizing nations may not in practice be able to leap forward; some may even stand still, and others may fall backward. But the vast majority of the nations of Asia, Africa, and Latin America are dedicated to this goal of high-speed modernization, and increasingly they are engaging in deliberate planning to achieve it. They are groping for a strategy of accelerated development, and with it and necessary for it, a strategy also for getting aid from the richer and more economically advanced countries.

In this article, I propose to list briefly some of the imperatives and also some of the constraints in devising a strategy for accelerated development. I then propose to concentrate on the elements of a strategy of human resource development, after first examining the patterns of manpower problems which seem to be emerging in the modernizing countries. Finally, I shall discuss the machinery for implementation of a strategy for human resource development.

The concepts set forth in this paper have grown out of my work during the past several years with the Inter-University Study of Labor Problems in Economic Development, and I am indebted to my colleagues, Clark Kerr, Charles A. Myers, and John T. Dunlop for many of the thoughts expressed. They, however, will not want to be held responsible for any perversions of their ideas in the pages which follow.

II

The Imperatives and Constraints of Accelerated Development

A. Imperatives

The country which commits itself to accelerated growth will find that it is imperative to do certain things. It must increase sharply its rate of savings by one means or another. It must place emphasis on industrial development, but at the same time it must modernize and increase the productivity of agriculture. It must invest wisely both in things and in people. In so doing, it must develop a sense of priority and timing, so that savings and manpower are directed into the most productive channels. All of this requires integrated planning and coordination of effort in implementation of the plans which are devised.

If the newly developing nations are to have accelerated growth -- more rapid, more sweeping and more dramatic than the "historical development" of the presently advanced nations -- they must take deliberate, unprecedented and sometimes drastic measures. For example, they must quickly and sharply increase taxes; they must restrict the too rapid expansion of consumption particularly by the wealthier classes; they must compete successfully for available foreign aid; and they must be prepared on many occasions to think in terms of long-range economic growth rather than short-term political expediency. Most countries have the capacity for rapid growth, but it is questionable whether some of them can develop the will to do the hard things which are necessary to bring it about. On this point, Arthur Lewis has sounded a rather pessimistic note:

"Politics is exciting to young countries, and politicians in these countries have attracted to themselves all the glamour which was previously reserved for priests and kings, not excluding the military parades, the salutes of guns, the yachts and the country houses. We must resign ourselves to the fact that most of the new countries will be too preoccupied with other matters to give to economic development the priority which it needs."^{1/}

I do not share completely Lewis' pessimism concerning the prospects for the young countries. Some, though certainly not all, will find the road to accelerated development. In general, the countries which are successful will be those which are able to accumulate physical and human capital at high rates of speed and to utilize both in high-priority, productive activities.

So much has been written by other economists about physical capital formation that no further elaboration is called for here. Let us assume that, on the average, a rapidly modernizing country may need to invest 20 per cent or more of its national income each year in order to achieve something approaching the goal of accelerated growth, and, that through taxation, forced savings, foreign aid or other measures, it must accumulate savings at this rate. My contention then is that it must have a correspondingly high rate of human capital formation in the form of accumulation of the kinds of skilled people and institutions which are indispensable for the modernization process.^{2/}

^{1/}W.A. Lewis, "Problems of New States," paper delivered at the Weizman Institute, Rehovoth, Israel. August 1960

^{2/}Some of above 20 per cent investment, of course, may be in institutions contributing to human resource development as discussed later.

In the view of prominent economists, less than one-third of the increase in national income of countries can be explained by quantitative increases in factor inputs -- such as capital and labor.^{1/} The "residual" is to be explained by qualitative improvements in these inputs which include such things as more productive capital, more productive human resources, economies of scale and other factors. Though an accurate breakdown of the residual has not yet been made, the most important factors appear to be the up-grading of human resources -- through education, training, health improvement, etc. -- as well as the development of knowledge and technology, which are, of course, closely associated with education. From this, it is reasonable to conclude that the wealth of a nation is at least as dependent upon the development of human resources -- the building of people and institutions -- as upon the accumulation of material capital.

There is, however, little to be gained by argument over which is the more important -- physical or human capital. Both must be accumulated at high rates of speed if rapid growth is to be achieved. A country's capacity to utilize effectively physical capital is dependent upon the availability of human capital, and vice-versa. And it is essential for politicians and planners to understand that any development plan which does not give high priority to human capital formation is simply unrealistic and almost certainly destined to fail, for experience has shown repeatedly that high-level manpower does not appear automatically or magically as dams, roads, factories, hospitals, radio stations, and airports come into existence.

^{1/} See Theodore W. Schultz, "Capital Formation by Education," Journal of Political Economy, vol. LXVIII, no. 6. For estimates as low as 10 to 25 per cent, see H. M. Phillips, "Education as a Basic Factor in Economic and Social Development," Final Report of Conference of African States on the Development of Education in Africa, Addis Ababa, May, 1961.

B. Constraints

In planning their forward march of modernization, the leaders of the newly developing countries operate within a context of pressures which limit the range of realistic policy alternatives. Try as they may, the planners and politicians can neither escape these constraints, nor alter them significantly.

The first is rapidly rising population growth. In nearly all of the newly modernizing societies, birth rates tend to remain high, while death rates decline as a result of the spread of public health measures and medical services. Even if there are no religious or cultural resistances to birth control, it is virtually impossible to have a fall in birth rates commensurate with the drop in death rates in the newly modernizing countries. Overpopulation in Asia and parts of the Near East is already a serious problem. The high rates of population increase in Latin America give cause for alarm. And even in the relatively uncrowded areas of Africa, the population explosion is imminent. An increasing population in nearly every case complicates the achievement of accelerated growth. The problems of feeding and health are magnified; expenditures for education must be augmented. A new nation attempting to achieve accelerated growth is in a sense like a man weighing over 250 pounds in training for a two-mile run!

Second, along with mounting population is the problem of rural-urban migration. With the spread of education, the development of transportation, and the very success of the appeal of modernization, people seek an escape from a "life-sentence" to traditional farming, and they flock to the cities much faster than employment, houses, water supplies, and other public services can be provided.

Third, as the idea of modernization takes root, so does the desire for immediate improvements in levels of living. The upper classes in

particular will increase their consumption of such things as motor scooters, automobiles, refrigerators, radios, hi-fi sets, and television. The poorer class will want more to eat and more to wear.

Men are told today by their leaders and by international organizations such as UNESCO that education is a human right. As a result, the demand for education on the part of all classes becomes particularly strong. In Brazil, families will wait in queues for two or three days at the opening of schools in an attempt to get their children in school only to be turned away because of insufficient places. In some countries, children who cannot get in schools seek to learn by standing outside at the windows, straining to hear what the teacher is saying inside. In the African countries, the building of a school in one village immediately results in pressure from surrounding villages for schools.

Universal primary education is a goal to which all political leaders today must be committed. The increase of primary education creates irresistible pressures for increases in secondary education, and the expansion of secondary education makes expenditures for higher education almost mandatory.

Fourth, practically all of the modernizing nations are dependent upon external aid of one kind or another. If they are to achieve accelerated growth, they must have financial help from the advanced countries; they must import, temporarily at least, high-level man-power from abroad in order to make use of accumulated knowledge and modern technology. In many cases they must count on foreign countries to maintain and stabilize the prices of raw materials which they sell in the world markets. Distasteful though it may be to the leaders of the modernizing countries, they are in significant respects at the mercy of the more advanced nations. They cannot go it alone.

Fifth, although inextricably dependent upon the services of foreigners, the modernizing countries are always under pressure to get rid of them as speedily as possible. In countries newly emerging from colonial status, the expatriates in the civil service must be replaced wherever possible by local nationals. The foreign-owned industrial corporation must open the avenues of access to higher managerial positions to local nationals as soon as they can qualify. The resentment against expatriates who cultivate the art of making themselves indispensable runs high. The newly educated elites of the modernizing countries are strongly convinced that they have a right to the foreigners' jobs. This is why so much store is placed upon "Nigerianization," "Africanization," or "Indianization" of high-level manpower. The foreigner is needed desperately. He may come through technical assistance, or with a new enterprise, or as a consultant. But, except in those countries (i.e. Brazil, Argentina, Chile, Mexico, etc.) where he may remain to become a citizen, he is supposed to expedite his departure. No perceptive political leaders rests easily when the top posts in government or industry are occupied by foreigners.

Sixth, the newly modernization nations must above all maintain political independence and strive for economic independence as well. The desire to remain neutral in the East-West struggle is becoming ever stronger. Indeed, many nations look at the East-West competition as an opportunity to increase their demands for foreign aid. Political independence, however, is not enough. The quest to escape economic dependence on or domination by foreign nations is equally strong.

Seventh, the leaders of modernizing nations always encounter some resistance to change. The extended family system, traditional ethical valuations, and legal concepts sometimes stand in the way of innovation. In particular, those with vested interests such as large rural landowners

or organized religious powers, and their political allies may be expected to offer resistance to basic reforms which the modernization process demands. Such traditions and powerful groups are not easy to brush aside. For many years to come, the developing countries will continue to have dual economies consisting of a modernizing sector and a vast traditional society which responds very slowly to the need for change.

Finally, the symbols of modernization are important to the newly developing countries. For example, to several African nations, an international airline is an imperative. In Egypt, the new steel mill is a tangible symbol of the commitment of the United Arab Republic to industrialization. Brazil has built a fabulous new capital city in the heart of the country. Nigeria and Ghana have lavishly appointed new universities, and more are planned for the future. In most modernizing countries, there are likely to be impressive new government buildings, modern apartments, luxury hotels, and broad new boulevards. Television stations are appearing throughout Latin America and Africa. Everywhere there are new shining factories, huge dams and power projects, and plans for big-jetports. These and many other impressive projects are tangible manifestations of association with modern ways and concrete reminders of the commitment to accelerated growth. As such they are, in the minds of the modernizing elites, almost indispensable elements in any program of development.

The constraints listed above lend support to the view that economic development is as much a political as an economic process. At any rate, the politicians cannot be expected to follow the theoretical trails blazed by the economists. So, the planners and their technical supporters, while being fully aware of the imperatives for rapid growth, must help to design a strategy which will be viable under the cross-fire of practical constraints which throw obstacles in the path of development and narrow the range of rational choice.

III

The Manpower Problems of Modernizing Economies

Most modernizing economies are confronted simultaneously with two persistent yet seemingly diverse manpower problems: the shortage of persons with critical skills in the modernizing sector and surplus labor in both the modernizing and traditional sectors. Thus, the strategy of human resource development is concerned with the two-fold objective of building skills and providing productive employment for unutilized or under-utilized manpower. The shortages and surplus of human resources, however, are not separate and distinct problems; they are very intimately related. Both have their roots in the changes which are inherent in the development process. Both are related in part to education. Characteristically, both are aggravated as the tempo of modernization is quickened. And, paradoxically, the shortage of persons with critical skills is one of the contributing causes of the surplus of people without jobs. Although the manpower problems of no two countries are exactly alike, there are some shortages and surpluses which appear to be universal in modernizing societies.

A. Manpower Shortages

The manpower shortages of modernizing countries are quite easy to identify, and fall into several categories:

(1) In all modernizing countries there is likely to be a shortage of highly educated professional manpower such as, for example, scientists, agronomists, veterinarians, engineers, and doctors. Such persons, moreover, usually prefer to live in the major cities rather than in the rural areas where in many cases their services are most urgently needed. Thus, their shortage is magnified by their relative immobility. And, ironically, their skills are seldom used effectively. In West Africa

and also in many Asian and Latin American countries, for example, graduate engineers may be found managing the routine operation of an electric power substation or doing the work of draftsmen. Doctors may spend long hours making the most routine medical tests. The reason is obvious:

(2) The shortage of technicians, nurses, agricultural assistants, technical supervisors, and other sub-professional personnel is generally even more critical than the shortage of fully qualified professionals. For this there are several explanations: First, the modernizing countries usually fail to recognize that the requirements for this category of manpower exceed by many times those for senior professional personnel. Second, the few persons who are qualified to enter a technical institute may also be qualified to enter a university, and they prefer the latter because of the higher status and pay which is accorded the holder of a university degree. And finally, there are often fewer places available in institutions providing intermediate training than in the universities.

(3) The shortage of top-level managerial and administrative personnel, in both the private and public sectors, is almost universal, as is the dearth of persons with entrepreneurial talents.

(4) Teachers are almost always in short supply, and their turnover is high because they tend to leave the teaching profession if and when more attractive jobs become available in government, politics, or private enterprise. And, this shortage is generally most serious in secondary education, and particularly acute in the fields of science and mathematics. This shortage of competent teachers is a "master bottleneck" which retards the entire process of human resource development.

(5) In most modernizing countries there are also shortages of craftsmen of all kinds as well as senior clerical personnel such as bookkeepers, secretaries, stenographers, and business machine operators.

(6) Finally, there are usually in addition several other miscellaneous categories of personnel in short supply, such as, for example, radio and television specialists, airplane pilots, accountants, economists, and statisticians.

I shall use the term "high-level manpower," or alternatively "human capital," as a convenient designation for the persons who fall into categories such as those mentioned above. The term "human capital formation," as used in this paper, is the process of acquiring and increasing the numbers of persons who have the skills, education, and experience which are critical for the economic and political development of a country. Human capital formation is thus associated with investment in man and his development as a creative and productive resource. It includes investment by society in education, investment by employers in training, as well as investment by individuals of time and money in their own development. Such investments have both qualitative and quantitative dimensions -- i.e. human capital formation includes not only expenditures for education and training, but also the development of attitudes toward productive activity.

As stressed earlier, a central problem of all modernizing countries is to accelerate the process of human capital formation. Human capital, or high-level manpower, may be accumulated in several ways: It may be imported from abroad through a variety of means such as technical assistance, expatriate enterprises, hiring of consultants, or immigration. It may be developed in employment through on-the-job training, in-service programs of formal training, management development seminars, part-time adult education classes, and many other means. It is also developed in employment through better organization of work, creation of appropriate attitudes and incentives, and better management of people. Finally, it is developed through formal education in schools, technical training centers, colleges, universities and other institutions of higher learning. The development process is assisted at all levels by improvements in public health and by better nutrition.

The analysis of human capital formation is thus parallel and complementary to the study of the processes of savings and investment (in the material sense). In designing a strategy for development, one needs to consider the total stock of human capital required, its rates of accumulation, and its commitment to (or investment in) high-priority productive activities.

The rate of modernization of a country is associated with both its stock and rate of accumulation of human capital. High-level manpower is needed to staff new and expanding government services, to introduce new systems of land use and new methods of agriculture, to develop new means of communication, to carry forward industrialization, and to build the educational system. In other words, innovation, or the process of change from a static or traditional society, requires very large "doses" of strategic human capital. The countries which are making the most rapid and spectacular innovations are invariably those which are under the greatest pressure to accumulate this kind of human capital at a fast rate. Here we may make two tentative generalizations:

First, the rate of accumulation of strategic human capital must always exceed the rate of increase in the labor force as a whole. In most countries, for example, the rate of increase in scientific and engineering personnel needs to be at least three times that of the labor force. Sub-professional personnel may have to increase 6 to 9 times as fast. Clerical personnel and craftsmen usually should increase at least twice as fast, and top managerial and administrative personnel will normally need to increase at a comparable rate.

Second, in most cases, the rate of increase in human capital will exceed the rate of economic growth. In newly developing countries which already are faced with critical shortages of highly skilled persons, the ratio of the annual increase in high-level manpower to the annual

increase in national income may need to be as high as three-to-one, or even higher in those cases where expatriates are to be replaced by citizens of the developing countries.

The accumulation of high-level manpower to overcome skill bottlenecks is a never-ending process. Advanced industrial societies as well as underdeveloped countries are normally short of critical skills. Indeed as long as the pace of innovation is rapid, the appetite of any growing country for high-level manpower is almost insatiable.

B. Labor Surpluses

The overabundance of labor is in most countries as serious a problem as the shortage of skills. Its more common manifestations are the following:

(1) In nearly all countries, the supply of unskilled and untrained manpower in the urban areas exceeds the available employment opportunities. The reasons are not far to find. First, large urban populations are likely to build up prior to rather than as a consequence of the expansion of industrial employment. Second, as industrialization gains momentum, the productivity of factory labor tends to rise sharply, and this limits the expansion of demand for general industrial labor. Indeed, modern industrialization may even displace labor from cottage and handicraft industries faster than it is absorbed in newly created factories. Third, the government service is able to provide employment for relatively few people. And finally, unless development is extremely rapid, trade, commerce, and other services simply do not absorb those who cannot find jobs in other activities. But despite relatively limited employment opportunities and overcrowded conditions, the modernization process impels people to migrate from the rural areas to the cities. And, as progress is made toward universal primary education, nearly every modernizing country is faced with the problem of mounting unemployment of primary school leavers.

(2) In overpopulated countries, such as for example Egypt or India, the rural areas are also overcrowded resulting in widespread underemployment and disguised unemployment of human resources. Indeed, in many countries it is evident that total agricultural output could be increased if fewer people were living on the land and the size of agricultural units was increased. Thus, surplus labor in rural areas in most cases is no asset and in some cases is definitely a liability for increasing agricultural output.

(3) The "unemployed intellectual" constitutes an entirely different kind of surplus. In many countries, it is reported, for example, that there are too many lawyers or too many graduates of the arts and literature faculties. And, there may be instances also of unemployed or underemployed engineers, scientists, economists, and even agronomists. The unused intellectual, however, is unemployed only because he is unwilling to accept work which he considers beneath his status or educational level. In particular, a university education creates very high employment expectations. In some countries, a university degree may be looked upon almost as a guarantee of a soft and secure job in the government service, and in most it is assumed to be a membership card in the elite class. But, even in rapidly modernizing countries, the purely administrative jobs in the government service become filled fairly rapidly; the demand for lawyers is certainly not as great as, for example, the demand for technically trained personnel. And in some societies where large enterprises are owned and managed by members of family dynasties, even the opportunities for professionally trained engineers and technicians may be limited, at least in the early stages of development. Rather than accept work beneath his status or employment in remote rural areas, the university graduate, and sometimes even the secondary school leaver as well, may prefer to join the ranks of the unemployed. A sizeable quantity of unused

human capital of this kind reflects a wasteful investment in human resource development and poses a serious threat to a country's social and political stability.

(4) There are other miscellaneous kinds of surplus labor. For example, the introduction of new processes and automated machinery may throw skilled labor out of work. Or, secondary school leavers, who feel that they should qualify for white collar jobs, may shun manual work of any kind. And, in some countries, immigrants and refugees swell the ranks of the unemployed.

Unfortunately, there is no reason to believe that accelerated growth will by itself solve the problems of labor surplus such as those described above. In part they are the inevitable consequence of too rapid increases in population growth over which planners and politicians may have little or no control. In part, they are diseases inherent in the modernization process itself, and are directly related to rising aspirations. Some are aggravated, and others are alleviated by rapid growth.

Some labor surplus, however, can be eliminated and others reduced substantially by a well-concerned and balanced program of economic growth. A strategy of human resource development, therefore, must include an attack on surpluses as well as shortages.

C. Manpower Analysis

As indicated above, no two countries have exactly the same manpower problems. Some have unusually serious surpluses, and others have very specialized kinds of skill bottlenecks. Politicians and planners, therefore, need to make a systematic assessment of the human resource problems in their particular countries. Such assessment may be called "manpower analysis."

The objectives of manpower analysis are as follows: (1) the identification of the principal critical shortages of skilled manpower in each major sector of the economy, and an analysis of the reasons for such shortages; (2) the identification of surpluses, both of trained manpower as well as unskilled labor, and the reasons for such surpluses; and (3) the setting of forward targets for human resource development based upon reasonable expectations of growth. Such forward targets are best determined by a careful examination, sector by sector, of the utilization of manpower in a number of countries which are somewhat more advanced politically, socially, and economically.

Manpower analysis need not be based on an elaborate or exhaustive survey. It involves no precise calculation of the numbers of people needed in every occupation at a future period of time. Nor is it a projection of past trends. The purpose of manpower analysis is to give a reasonable objective picture of a country's major human resource problems, the interrelationships between these problems, and the causes of them, together with an informed guess about probable future trends. It is both qualitative and quantitative, but it is based more upon wise judgment than upon precise statistics. In countries where statistics are either unavailable or clearly unreliable, the initial manpower analysis may be frankly impressionistic. Indeed, detailed manpower surveys and precise projections are likely to be misleading, because they give a false impression of accuracy.^{1/}

^{1/} The Inter-University Study has developed some working papers on manpower assessments and human resource development which treat this matter in greater detail. It is also working on comparisons of manpower utilization in countries at various stages of development.

In conclusion, the major shortages and surpluses of manpower in most countries are easy to identify. Many of them are common to all modernizing societies. Manpower analysis, based on relevant comparisons with other countries at different stages of development, is useful in assessing particular problems and probable future trends. To be sure, there is need for research in manpower supply and demand as related to economic growth. But those who are responsible for the planning of accelerated growth cannot and need not wait for the completion of definite studies before designing a realistic strategy for human resource development.

IV

The Components of a Strategy of Human Resource Development

A strategy of human resource development is one of the imperatives of any program for accelerated growth. And to be viable, it must take into consideration the realistic constraints which were mentioned earlier. The planners can do little to stem the burdens and increase in population. The politicians cannot go back on their promises of rapid achievement of universal primary education. They can rely only temporarily on expatriate manpower as a source of human capital. The resources which they can allocate to education are limited by competing demands for investment in roads, factories, dams, and irrigation systems. And, nothing can be done which is inconsistent with the bolstering of economic and political independence.

What then are the feasible policy alternatives? What instruments are available for policy implementation? What obstacles lie in the path of development of a sound strategy? These are the central questions posed in this paper.

A strategy of human resource development has three essential components: the building of appropriate incentives, the promotion of effective training of employed manpower, and the rational development of formal education. These three parts are interdependent. Progress in one area is dependent upon progress in the other two. The country's leaders cannot concentrate on only one or two of them at a time; they must plan an integrated attack on all three fronts at once.

A. The Building of Incentives

In the strategy of human resource development, the purpose of building incentives is to encourage men and women to prepare for and engage in the kinds of productive activity which are needed for accelerated growth. To accomplish this, the compensation of an individual should be related to the importance of his job in the modernizing society. It should not depend upon his level of formal education, the number of degrees held, family status, or political connections. And the relative importance of jobs should be based not on tradition or heritage, from colonial regimes, but on an assessment of the manpower needs of the developing economy.

If, for example, agricultural officers or village workers are desperately needed in rural areas to carry forward a program of modernizing traditional agriculture, their pay may have to exceed that of professionally trained people who have desk jobs in the cities. If a technician with limited education can perform work normally assigned to an engineer, he should receive the same pay as the engineer on that job. If science and mathematics teachers are urgently needed in secondary schools, their rates of compensation should be higher than other less urgently needed teachers (whether university graduates or not) and perhaps higher also than professionally trained people in some other less essential activities. If technicians, nurses, and foremen are in very short supply (as is the case in most modernizing countries), their rates of pay may need to be higher than those of some university graduates holding down administrative jobs for which many persons could qualify. In some cases, the medical technician or the agricultural assistant who is willing to live in the bush deserves to be paid as much as the doctor or the agronomist who insists upon living in the city. And, the manager of an enterprise, who may have had only a limited secondary education, is entitled to higher compensation than the university graduates who are his subordinates.

Large outlays for education are unlikely to produce the kind of high-level manpower needed if the proper incentives are lacking. In many developing countries, any university degree is looked upon almost as a right to employment in the government service. Thus, if one is admitted to a university and completes the requirements for a degree, he may thereby have gained tenure in the higher-paid ranks of government employees. He is also strongly motivated to prefer work in the large urban areas. The idea that a university education is a "permanent escape from the bush" is widespread, for example, in Africa. In Nigeria, the reason for the critical short-age of agricultural specialists of all kinds is not the lack of places in agricultural schools but rather the reluctance of students to go into them.^{1/} Obviously, in the minds of young people, the employment opportunities are not as attractive in agriculture as in some other fields which are less vital for the country's development. For the same reasons, technical education, particularly at the intermediate level, has had little appeal in Nigeria. As the Ashby Commission pointed out,

"...the literary tradition and the university degree have become indelible symbols of prestige in Nigeria; by contrast technology, agriculture and other practical subjects, particularly at the sub-professional level, have not won esteem."^{2/}

I would argue most strongly that situations of this kind will not be corrected by publicity, exhortations of prime ministers, and the building of more educational institutions. They will be changed only

^{1/} See Investment in Education, The Report of the Commission on Post-School Certificate and Higher Education in Nigeria, Federal Ministry of Education, Lagos, 1960, p. 21.

^{2/} Ibid., p. 5.

when the system of rewards and status in a modernizing society are changed, and the initiative in making changes must come from the government itself in the form of a complete revision of the entire system of compensation of government employees. The failure of politicians and planners to come to grips with this problem will produce in the newer countries, as it has produced already in Egypt and India, an army of unemployed intellectuals.

By the same token, the problems of rural-urban migration and the unemployed primary school leavers are not likely to be alleviated substantially by mere changes in the curriculum of primary and secondary schools. In this age of rising aspirations and spreading mass communication, the sons of farmers are not going to sentence themselves to traditional agriculture if they can possibly avoid it. The only fundamental solution is the modernization of rural life. This calls for sweeping measures such as land reform, agricultural research and extension services, widespread rural community development programs, the effective utilization of rural labor in the building of roads, irrigation systems, houses, and schools, and other programs aimed at making rural life more productive and attractive. If people see a positive reason for remaining in the rural areas and a promise of a better life there, the problem of revision of curricula in the schools is relatively easy to handle.

A detailed discussion of the need to develop agriculture lies beyond the scope of this paper. It is necessary only to point out that none of the modernizing countries are likely to solve many of their most pressing human resource problems unless they find the means of revolutionizing rural life. Industrialization by itself will never solve the problem of surplus labor in most of today's underdeveloped countries; government employment, petty trade, and domestic services will not soak up the teeming masses in overcrowded cities; and the retention of surplus human

resources in traditional agriculture, even if it were possible, would simply result in more disguised unemployment. Again to quote Arthur Lewis, "If agriculture is stagnant, it offers only a stagnant market, and inhibits the growth of the rest of the economy. The core of the doctrine 'balanced growth' is that neglect to develop agriculture makes it more difficult to develop anything else."^{1/} Similarly, the failure to develop effective measures for productive utilization of human resources in rural areas will make it infinitely more difficult to solve the manpower problems in any other part of the economy.

Thus, a primary condition for solution of all manpower problems, whether they be critical skill bottlenecks in the modernizing sector or mounting labor surpluses throughout the nation, is the building of appropriate incentives. Lacking this, massive expenditures on training and education will contribute little to accelerated development. The notion that there is always a direct relation between the development of education and economic growth can be misleading, and planners should be wary of accepting it without careful scrutiny.

The leaders of the modernizing nations probably have the means to influence the structure of wages and salaries in a country if they have the courage to do so. In most cases, the government is by far the largest employer of manpower, and private employing institutions are strongly influenced by the patterns which it sets. But, being bound by tradition and constrained by established interests which are bent on preserving the status quo, some politicians and planners think that it would be rather arbitrary to suddenly gear compensation to the relative importance of occupations as determined by development objectives. Yet, it is

^{1/} W. Arthur Lewis, "Reflections on the Economic Problem," paper delivered to the Oxford Conference on Tensions in Development, New College, Oxford. September 1961.

equally arbitrary and even politically dangerous to cling to an archaic system of compensation which may have been inherited from a past era of colonialism. In committing themselves to planned, accelerated development, the modernizing nations are charting a revolutionary course. And if they are to follow it successfully, they must discard many traditional and orthodox ideas, many of which they have borrowed from the advanced nations which never had to face the same kinds of problems.

B. The Training of Employed Manpower

The potentialities of fully utilizing government agencies, private employers, expatriate firms and foreign technical experts as trainers and developers of manpower are enormous, but they are seldom fully understood by the leaders of most modernizing countries. Human resource development is usually equated with investments in formal education, and government, business, and education leaders for some reason cling to the notion that schools and universities can prefabricate the skills needed. To be sure, they may be quick to see the need for technical training, but, unfortunately, just as quick to assume that the system of formal education must somehow be given the responsibility for it.

At this point, it is important to understand that training and education are two quite different processes, and planners should draw a sharp distinction between them. Training involves the development of specific skills which are needed to perform a particular job or series of jobs. Education involves the acquisition of general knowledge and development of basic mental ability. Both training and education are involved in human capital formation. Education is, of course, a prerequisite for various kinds of training. But this does not mean that the responsibility for training and the responsibility for education are inseparable.

The strategy of modernizing nations should be to shift as much responsibility as possible for training to the major employing institutions. These include government ministries, public or quasi-public enterprises, private industry and commerce, and foreign-owned and managed firms. At the same time, the strategy should aim to exploit more systematically the training possibilities of technical assistance.

The government, as the largest employing institution, should take the lead in shouldering this responsibility. Most of the arts of public administration can be developed effectively by a well conceived and organized program of in-service training. It is likewise practical for the appropriate employing ministries to train craftsmen, senior clerical employees, and even certain categories of sub-professional technical personnel. Each major government ministry, therefore, should have a training organization responsible for on-the-job training, in-service programs of instruction, supplementary off-the-job programs of training in cooperation with educational institutions, periodic examination of accomplishment, and certification of qualification for promotion and advancement. The techniques of in-service training of this kind are available, but the idea that the government-as-employer should assume responsibility for such training is to most leaders in newly developing countries completely strange and unorthodox.

At the same time, pressure should be exerted upon the non-government employing institutions to assume a corresponding responsibility for training. The larger enterprises should be expected to have foreman training and manager development programs. They should also be required to assume major responsibility for training of their own craftsmen clerical workers, and some categories of technicians as well as semi-skilled production workers. In short, the development of human capital through in-service training should be accepted as an integral part of business operations.

The small employer can also carry some of the burden of training, and in practice he often carries more than his share. In Nigeria, for example, most lorries and automobiles are repaired in small shops consisting of an owner and several apprentices, who may even pay him for the opportunity of learning a trade. The handicraft industries in most countries are completely dependent upon an informal apprenticeship system. The planners in the modernizing countries will be well advised not to replace such systems with costly vocational schools, but rather to try to improve them by providing programs of technical assistance in apprenticeship and on-the-job training.

The foreign-owned enterprise can be a powerful instrument of human capital formation if it is handled properly, because its training capacity is usually greater than that of the local enterprises. The host country should allow the foreign firm to bring in as many expatriates as it wishes, provided that it guarantees to train local nationals to take over their jobs within a reasonably specified time. In most instances, the foreign firm develops more people than it uses itself. For example, craftsmen and mechanics trained by an expatriate oil company may take jobs in other local industries; or service station attendants may soon become independent dealers. A well-trained foreman in a foreign-owned truck assembly plant may be a future organizer of a locally managed parts factory. Unquestionably, a more deliberate and carefully planned policy of using the expatriate firm as a training institution could greatly accelerate the process of human capital formation in many countries, and politicians should be more concerned with exploiting this asset to the maximum than in placing arbitrary restrictions on the employment of expatriate personnel.

Finally, the newly developing countries should fully exploit the potentialities of technical assistance as a training institution. To the maximum extent possible, the purpose of technical assistance should be

to train one or more individuals to do work which was previously done by a foreigner, or not done at all. It is short-sighted to invite foreign technical experts to a country to handle operations or merely to make studies or surveys. In whatever activity they are engaged, the responsibility of foreign experts should be to train counterparts -- to transmit knowledge by developing people.

The advantages of utilizing employing institutions and technical assistance as trainers and developers of manpower would appear to be blindingly obvious. But the failure to do so is almost universal in newly developing countries. Outside technical experts are employed to engage in operations, and often local counterparts are not assigned to them for training. The government ministries are too busy to spend time on in-service training, and complain when vocational schools and universities send them poorly trained recruits with queer attitudes towards work. The idea that training is a continuous process of human resource development rather than a simple pre-employment indoctrination seems to escape politicians, planners, and public and private employers alike. The solution here is relatively simple. If the employing institutions are shouldered with the responsibility for a considerable amount of training, they will have an incentive to provide it. If they have the incentive to undertake it, the technical means of carrying it out are available from a variety of sources.

C. Formal Education

No one would argue, of course, that all training activity can or should be undertaken by the employing institutions. Many skills must be developed in schools, colleges, and universities. Teachers, engineers, scientists, agronomists, doctors, and many kinds of sub-professional personnel are not likely to be effectively trained in employment. And, some kinds of crafts are learned better in schools than through apprenticeship or on-the-job training arrangements.

In the main, however, the essential function of formal education is to prepare people for training rather than to train people for particular occupations. In other words, the principal output of formal education should be educated "trainable" people. Like a photographic film, the capacities of people are developed after exposure to productive activity. Pre-employment education, as in the coating of the film, determines the future sensitivity of man for understanding and continuous learning. In this three-phase strategy of human resource development, therefore, the right incentives and the proper arrangements for continuous in-service training are necessary in order for formal pre-employment education to contribute effectively to accelerated growth.

Nearly all modernizing countries have rejected the idea of gradual elimination of illiteracy; they are determined to have universal primary education in record time. This must be accepted as a major objective in any program of accelerated development. But, in many countries, and particularly those in Africa and parts of Asia, universal primary education cannot be achieved in the next ten to fifteen years if the educators insist on the same teacher-student ratios and teacher qualifications as those in the advanced countries. For the most part, the developing countries are being forced to sacrifice quality for quantity in their mass attack upon illiteracy.

It is unquestionably true that the cost of primary education must be held down; otherwise it will consume most of the resources which are more urgently needed for secondary and higher education. Most of the developing countries currently spend less than 4 per cent per annum for formal education of all kinds, and, in view of competing demands for funds for development purposes, it is doubtful whether many of them will be able to raise this to 5 or 6 per cent in the next decade or two. And, the need for high-level man-power is such that most modernizing countries will have to devote well over two-thirds of total educational expenditures to secondary and post-secondary institutions.

Consequently, developing countries should concentrate their attention on finding new technologies of education which can be utilized effectively by large numbers of teachers who themselves have had little more than primary education and which can multiply the strategic services of a very small group of more highly trained personnel. The application of new teaching techniques -- visual aids, programmed learning, instruction by radio and television, revised and simplified curricula and texts -- offer a real challenge both to the developing countries and the assisting countries as well. The discovery of new technologies for primary education will be given much more serious effort once it is understood by politicians, planners, educators, and outside experts alike that under conditions of accelerated growth it will be impossible to raise substantially either the pay or the qualifications of teachers in the near future.

The main purpose of primary education is to make people literate and to prepare them to participate more effectively as citizens in the modernizing society. It is not and should not be vocational education, and indeed most educators in advanced as well as under-developed countries are united in opposing such an orientation. It must, however, provide a means of selecting and preparing those who proceed to secondary level education.

One of the consequences of rapid introduction of universal primary education is to raise aspirations of people more rapidly than jobs and places in secondary schools can be provided. This is one of the costs of rapid modernization. In time, however, the social and political pressure for more secondary education will assist rather than obstruct the rapid accumulation of high-level manpower.

If a country demands accelerated development, the proportion of students in secondary education must rise sharply. The secondary school leavers constitute the main reservoir from which "trainable" high-level manpower must be drawn. University students, teachers, entrepreneurs, managers, sub-professional technical personnel, rural development center workers, agricultural specialists, senior clerical employees, master craftsmen, foremen and supervisors come directly or indirectly from the pool. Its size and quality, therefore, are critical for human capital formation. As in the case of primary education, streamlined methods of instruction and new educational technologies are needed. But, at the secondary level, the main consideration is not to keep costs from rising; it must be to provide high-quality education for an ever increasing minority of the school-age population.

The proportion of the school-age population in secondary education will depend upon the stage of development. In the most under-developed countries, less than one per cent of the normally eligible age groups (12-18 years) are in secondary schools. Some of the more advanced African countries have been able to raise this to 4 or 5 per cent. Egypt and India and some of the Latin American countries have ratios as high as 15-20 per cent. In most of the industrially advanced countries, it is already in excess of 50 per cent. But in most, though not all, modernizing countries (Egypt and India being notable exceptions), there is underinvestment in secondary education, and thus accelerated growth calls for immediate and sharp increases in education at this level. (The Conference of African States on the Development of Education recommended that the tropical African countries as a whole increase the proportion of school-age population in secondary schools from an average of 3 per cent in 1961 to 23 per cent in 1981, during which period universal primary education would also be achieved.^{1/}

^{1/} Conference of African States on the Development of Education in Africa, Addis Ababa, 15-25 May, 1961: Outline of a Plan for African Educational Development, UNESCO, Paris, 1961.

The major mission of secondary education is to give students firm grounding in verbal and written communication skills, mathematics, foreign languages, history, social studies, and science. In this process, some attention should be given to development of manual skills as well. In most cases, the human resource development strategist should press for breadth of education for all rather than specialization at an early stage, and he can feel safe in doing so if a large part of occupational skill development is to be left to later training in employment or to post-secondary educational institutions.

Vocational training at the secondary level presents particular problems. It is expensive, and competent teachers are very difficult to find. Modernizing countries often waste large sums of money in misplaced emphasis on primary and secondary vocational schools. In some countries, for example, students who prove to be unfit for higher academic training are sent to vocational schools, and as a consequence these institutions become the catch-basins for incompetents. And, in many instances, the training they receive tends to be of poor quality and not specifically enough related to the occupations which the students later enter. As stressed above, the policy of newly developing countries should be to place more responsibility on employing institutions to train workers for specific occupations, and to this end funds might better be channelled into training of trainers in employing institutions than into the proliferation of poorly equipped and poorly staffed general vocational schools.

There is a need, however, for teacher training institutions at the secondary level (primarily for elementary school teachers). A limited number of well-staffed and well-equipped craft training centers are undoubtedly necessary, as are others such as certain kinds of secretarial schools and agricultural training institutions. But plans for these

should be carefully scrutinized after analysis of expected manpower requirements and training potentialities of the employing institutions.

The mission of higher education is two-fold: (1) to provide liberally educated persons for positions of leadership in the modernizing society and (2) to develop high-level technically trained and technically educated manpower. The newly developing countries are keenly aware of the importance of university-level education. Except in rare cases, they are not likely to underinvest in higher education, but, in terms of development objectives, they are prone to place the wrong emphasis on the investments which they make.

It is probably reasonable to assume that on the average the newly developing countries can and will provide higher education for about 20 per cent of those who complete secondary education. The crucial questions then are: What proportion of these should have university level education and what proportion should take intermediate training? What proportion should concentrate on technical studies and what proportion should devote themselves to academic studies? And, of those who should have university-level education, what proportion should be educated at home and what proportion should be sent abroad to foreign institutions? In each country these issues are likely to be resolved partly by logical analysis and partly by political expediency.

The answers may be given in part by a manpower assessment. Typically, a manpower analysis might suggest that 2-4 students should pursue studies at the intermediate level (two or three years beyond secondary) for every one who takes a full university course (ranging from four to six years). The manpower assessment would probably also suggest that, in a country committed to accelerated growth (with emphasis on industrialization and modernization of agriculture) at least half of the students at both the intermediate and university level should concentrate on technical

subjects such as science, engineering, medicine, agriculture, veterinary medicine, or pharmacy. Another 25 per cent should go to intermediate-level teacher training colleges, and the remainder should concentrate on law, letters, social sciences, and business administration.^{1/}

From an economic standpoint, the logical course for the typical country would be to build institutions at home to take care of practically all students at the intermediate level, and to send a substantial portion of those qualified for university level work to foreign institutions, at least until the country is rich enough to afford first-class university-level education without cutting into the high-priority need for investment in secondary and intermediate higher education.

The politicians, however, will have difficulty in accepting such a rationalized program for higher education, even if it is based upon a quite reliable manpower assessment and even if it can be demonstrated to be the more rapid and least expensive way of producing trainable high-level manpower. The reasons are obvious:

As the number of secondary school graduates increases (as it must if accelerated growth is desired), the government will be under pressure from students and irate parents to provide more places in universities. And as long as university degrees determine in large measure the starting salaries for the better jobs (irrespective of what subjects may have been studied), students will want to by-pass the intermediate institutions if at all possible. If numbers of people in universities are important to the politicians, moreover, the universities will tend to offer work in the non-scientific areas than is needed. The cost of educating an engineer or scientist, for example, is 3-4 times that of educating a lawyer or a man of letters and arts.

^{1/} In practice, of course, manpower assessments in individual countries will show a wide variation from this "typical model." The Inter-University Study is engaged in research in this area, and hopes to have available shortly more empirical evidence on this subject.

Thus, both the expansion of institutions designed to provide urgently needed intermediate education and the objective of placing more emphasis on science and engineering education in the universities meets strong resistance. But this is not all. From the standpoint of national grandeur and prestige, a university is a much more impressive symbol of modernization than a teacher training college, an intermediate technical training institute, or a "junior college of arts and sciences." A "university," along with an inter-national airline, a steel mill, and several television stations is important in the eyes of the leaders of newly developing nations. Finally, too much reliance on sending university level students abroad for study is often considered to be inconsistent with a country's objective of bolstering its economic and political independence of foreign powers.

For these reasons, therefore, modernizing countries will probably commit themselves to spend more money on university education than they should; they will tend to neglect the development of intermediate education which should have higher priority; and they are likely, in the interest of providing the maximum number of places for university students, to understress scientific and engineering education. This leads eventually to the lowering of standards of the university, reliance on professors who teach only part time because of the poor salaries offered, and the development of built-in obstacles to innovation in the form of professors with academic tenure who have a vested interest in the status quo.^{1/} In the end, the education and training offered in universities may sink to a level below that of a good teacher training institution or technical or junior college, and the curriculum is likely to be unrelated to the needs of a rapidly modernizing society.

^{1/} The Inter-University Study is involved in studies in a number of countries aimed at analysis of the university as a stimulating or retarding force in economic development and the factors which make for adaptability of the system of higher education to development needs.

In view of these pressures, how can modernizing countries give the needed emphasis to intermediate-level training and to science and engineering studies in the universities? As already stressed above, it is rationally desirable and politically feasible to gear the compensation of jobs, particularly in the government service, to their relative importance for the country's development rather than to formal degrees or educational levels. If this were done, the artificial value of the traditional academic university degree would soon disappear. If, for example, the compensation of high-level personnel such as scientists, engineers, agronomists, technicians, and secondary school teachers were to be raised substantially in accordance with the obvious needs of a modernizing society, students would have an incentive to enter the intermediate technical training institutions, secondary teachers' colleges, and scientific and engineering faculties in the universities. These would become the new avenues to positions of high pay and status. Parents and students would then exert pressure to expand and improve these avenues. In this way, the adaptation of the system of higher education to the needs of a rapidly modernizing society would become politically more feasible. And, this need not conflict with the university's mission of providing liberally educated persons for positions of service and leadership in the nation. The modernizing society will always have important and high paying positions for the well-educated lawyer, arts graduate, and social scientist. But, it should not allow large numbers of poorly educated university graduates to use their degrees to claim high-level positions for which they are not well prepared.

V

The Implementation of the Strategy

A. The Strategy in Summary

Only the bare skeleton of a strategy of human resource development has been presented above. It is admittedly over-simplified; many important questions have been passed by; and some elements of the strategy have been implied but not mentioned specifically. However, the strategy as a whole has a consistent rationale, and it has been presented primarily to stimulate serious discussion among those who are committed to accelerated development.

The argument has been made that investments in formal education alone are not likely to solve either critical skill shortages or persistent labor surpluses in modernizing societies. Investments in education are likely to contribute effectively to rapid growth only (1) if there are adequate incentives to encourage men and women to engage in the kinds of productive activity which are needed to accelerate the modernization process and (2) if appropriate measures are taken to shift a large part of the responsibility for training to the principal employing institutions. The building of incentives and the training of employed manpower, therefore, are necessary both as a means of economizing on formal education and as a means of making the investment in it productive.

In building of incentives, a cardinal principle is that the status and compensation attached to occupations should be related to their relative importance as measured by the high-priority needs of a developing society, and not to arbitrary levels of education, degrees, family status or political connections. This is essential for the accumulation of human capital and for its most effective utilization. The surpluses of labor, particularly those connected with rural-urban migration and the unemployment of primary school leavers, may be reduced in part by a

far-reaching program of modernization of agriculture and rural life as a counterpart to a program of industrialization. Because of rapidly increasing populations and the early emphasis on universal primary education, however, there will still be large numbers of unemployed or underemployed persons in most modernizing societies.

The potentialities of fully utilizing government agencies, private employers, expatriate firms and technical experts as trainers and developers of manpower, though very great indeed, are seldom exploited fully. Thus, a key element in the strategy of human resource development is to shift as much as possible the responsibility for training to the major employing institutions, and to provide the necessary technical guidance to enable these institutions to develop in-service training programs along modern lines.

The third component of the strategy is wise judgment and prudent investment in building the system of formal education. This calls for giving priority to investment in and development of broad secondary education. It requires that the costs of universal primary education be kept as low as possible by applying new technologies which can make effective use of relatively untrained teachers and which can multiply the contribution of a very small but strategic group of highly-trained professionals. Finally, in the area of higher education, the strategy stresses the need for giving priority to investment in intermediate level training institutions and the scientific and engineering faculties of universities. But this does not mean that the production of liberally educated persons should be neglected.

The three essential components of the strategy are interdependent, and call for a well designed and integrated attack on all three fronts at once. And, it is imperative that the strategy of building and utilizing human resources be an integral part of a country's national development program.

The strategy assumes that the politicians of the country are firmly committed to the goal of accelerated development, and that they have the will to do the things which are imperative for its attainment. It recognizes, however, that there are certain constraints over which the country's leaders have little or no control and which narrow their choice of policy alternatives.

Such a strategy ought to provide a logical framework for the formulation of policies to govern manpower utilization and development. It should identify the major areas where foreign technical assistance is required, and provide the criteria for determining priorities. It should be instrumental in integrating fragmented activities into a well coordinated effort. Along with a broad plan for accelerated growth of which it should be a part, a strategy of human resource development is today the most urgent need of nearly all modernizing countries.

B. Some Obstacles to be Overcome

Quite apart from the constraints listed earlier in this paper, there are obstacles which lie in the path of implementation of a consistent strategy of human resource development. The most formidable, perhaps, is traditional thinking. For example, those who have experience with traditional methods of elementary education are suspicious of new technologies which might reduce teaching costs. Most of the leaders of the underdeveloped countries are unaware of the great strides made recently in methodology of in-service training in the advanced countries. The thought of over-hauling the wage and salary structure of government ministries is frightening. The idea of tampering with higher education to turn out larger proportions of sub-professional personnel is not consistent with the kind of indoctrination one may have had at Oxford, Cambridge or the Sorbonne. And the very thought that there is a strategic

relationship between incentive, in-service training and formal education is strange and difficult to grasp. Yet, those who preach the revolutionary doctrine of planned, accelerated growth -- more rapid and more sweeping than anything before -- must be prepared to reject outworn concepts and employ the most modern techniques available. In their approach to development, they must be more modern in many respects than the advanced nations from which they seek aid and advice.

The governmental structure of the developing countries is another obstacle. Thinking and planning tends to be in compartments. The ministries of education deal only with formal education, and some do not even have jurisdiction over technical education. Ministries of labor are concerned with employment standards and some aspects of training skilled and semi-skilled labor. The ministries of industry, commerce, and agriculture are likely to be preoccupied with technical and financial questions. The economic development ministries or development boards, if they exist at all, are generally concerned with physical capital formation, the balance of payments, and other urgent economic questions. They are likely to assume that trained manpower will appear magically as soon as factories, dams, roads, and ditches are completed. The traditional economic planners are likely to banish human resource development to that "no-man's-land" of social welfare. Thus, no ministry or board is in position to see the problem as a whole. Each grasps rather blindly for some program of manpower development, and in justification makes wild claims for its indispensable role in promoting rapid growth.

Until recently, moreover, foreign technical experts have added to the confusion and "scatteration" of effort in this field. Each has a particular package to sell; each normally deals with only one ministry; each with tireless zeal tries to "educate the top leadership" on the importance of a particular project. There is "competition among the givers." In

the developing country, offers of help may be forthcoming from the United Nations, UNESCO, the ILO, the ICA, the West German Government, the Soviet Union, and other governments as well as several private philanthropic foundations and a host of church missions and other voluntary organizations. Each has an interest or a program which it may be pushing in the particular country. Each essentially offers assistance in a specialized field.

This "competition among givers" is desirable in many respects. It offers the developing countries a range of choice. It puts pressure on the givers to do as good a job as possible. It gives the recipient countries a feeling that many nations and many institutions are concerned with their welfare. And it makes it easier for these countries to maintain a position of neutrality as recipients of assistance. But there are obvious drawbacks. Aid is given in pieces without regard for broader, underlying problems. The energies of the recipient governments are consumed by a proliferation of scattered and unrelated projects. Often the best qualified local manpower is lured away to foreign countries on fellowships, study tours and other exciting ventures, leaving virtually no one at home to handle the day-to-day work of project development. And, worst of all, in some countries the politicians are tempted to use some of the givers as scapegoats by asking for "a survey by experts" as a convenient means for postponing action on a thorny problem.

C. Implementing Machinery

The design of a strategy calls for integrated rather than compartmentalized planning. The implementation of a strategy requires coordinated activity. Assuming that a strategy can be developed, what machinery is necessary for its implementation?

Since manpower problems are the concern of many ministries, the program of human resource development must be implemented by an inter-ministerial board. In addition to members of the government, this board should normally have representation as well from the non-government employing institutions and organized labor. It is essential, however, that such a board have a secretariat. And this board and its secretariat should be integrated with whatever machinery is established for general economic development planning. Among its key functions are the following:

1. Coordination and approval at the country-level of all requests for external and technical assistance involving manpower and human resource development.
2. The determination of priorities in the strategy of human resource development, and the continuous re-assessment of priorities as the program progresses.
3. The assessment of human resource problems through periodic manpower analysis.
4. The promotion and stimulation of planning activity on the part of the ministries represented on the board, as well as on the part of employer and labor organization.
5. The coordination of the above planning activities.
6. The integration of human resource development strategy with other components of the country's plans of economic and political development.
7. The general review of all activity connected with human resource development, and periodic evaluation of the work of the various agencies which assume responsibility for it.
8. The selection and design of research projects which may be useful for the formulation, implementation, and evaluation of the strategy of human resource development.

Formal machinery such as that suggested above is not difficult to establish. Its effectiveness, however, will depend upon the people who provide its leadership and the kinds of personnel recruited for its secretariat. Its success will be related also to the effective use of the right kind of foreign experts as consultants. In short, the critical element in the creation of machinery for the implementation of the strategy of human resource development is the right kind of high-level manpower.

A human resource strategy board should be neither a statistical agency, a study commission, or a long-range planning organization. Though primarily concerned with policy formulation, it is at the same time involved in certain critical operations. It may have both advisory and executive responsibilities. Its top staff, therefore, should be neither statisticians, professional educators, or economists as such. Its key personnel should be strategists — persons who combine political insight with a rational understanding of the processes of modernization. Such strategists of necessity are generalists, in that they must be able to comprehend the interrelationships between the component parts of an intricate program for accelerated development.

The advanced countries to date have been unable to send such strategists to the newly developing countries. This has been in part because the need for a coherent strategy has not been recognized; in part because the recipient countries have been wary of foreigners who want to "master-mind" their development; but in larger measure because the type of strategists needed are in rare supply.

Here then lies the crux of the problem: the training of strategists in human resource development programming. This is a task which calls for joint effort by both givers and recipients of technical assistance. And indeed no other task is more important to the future of developing nations.

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