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**MANPOWER PROGRAMS AND PLANNING
IN
ECONOMIC DEVELOPMENT**

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PREFACE

This document focuses attention on the significance of manpower in programs of economic development in underdeveloped countries. While there has been a great deal written and published on the general subject of economic development, often with some treatment of population or the workforce, this is the first work wholly devoted to manpower as a factor in development.

Two separate approaches to the subject will be found in the following pages. The reasons for this duality is that although the two approaches are related, each is directed to a different audience. Part I is designed for host country consumption. It is somewhat promotional in tone and has its objective obtaining host country understanding of the place of manpower in economic development. It also seeks to bring about acceptance of the necessity for taking rational steps to bring about the manpower planning and action essential to the achievement of economic development. The treatment is intentionally quite broad in scope, touching upon many of the important considerations related to but not specifically "manpower" programs as such (for example, health, sanitation and housing, problems of motivation, et al). Part I is couched in simple language in order to preserve the basic concepts in translation. It may be lifted from this document by the USOM and prepared as a pamphlet in the host country language.

Part II is intended for the use of U.S. officers who have some familiarity with the manpower field, or who may be expert in one of its aspects but not in others. With the exception of Chapter A, "The Economics of Development" which is provided as a frame of reference, Part II concerns itself with the central manpower problems. It deals with the problems of getting a manpower program under way, the information and administrative machinery needed to plan and carry out such a program from the initial manpower assessment to producing the skills required by the expanding economy.

While Part II is quite specific, and does not avoid technical concepts and terms, it is not intended as a detailed technical handbook. It is intended to supply a sound working grasp of the subject for U.S. officers dealing with host country officials on specific program proposals or in probing with respect to basic program needs in the manpower area. It is intended that this manpower manual will be supplemented by technical handbooks for each of the specialized phases of a total manpower program. Two such technical handbooks have been prepared and issued (1--"Establishment of National Employment Services in Developing Countries" and 2--"The Forecasting of Manpower Requirements").

A note of caution is in order at this point. This manpower document should be regarded as a "preliminary edition." While it is believed that its coverage and treatment is as sound and adequate as it can be at this stage of development of this technology, the time has not yet arrived when a definitive treatment of this whole subject can be written. This is a very new field indeed. Too little is known, and there has been insufficient evaluation of the forces of cause and effect and the relative applicability of different approaches in the varying situations represented by the underdeveloped countries in which some manpower work has been undertaken. As experience is gained and our information grows, this "first edition" must be revised to incorporate the added knowledge.

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PART I

**PLANNING FOR MANPOWER IN
ECONOMIC DEVELOPMENT**

Part I

PLANNING FOR MANPOWER IN ECONOMIC DEVELOPMENT

INTRODUCTION

The great phenomena of the twentieth century in the judgment of historians will very probably not be man's conquest of space or nuclear fission--as spectacular as these accomplishments may seem to us now. Rather, they will mark the progressively successful efforts of men to eliminate the age-old conditions of poverty, disease, lack of opportunity and hope that characterized the lot of over two-thirds of the inhabitants of this planet as the century opened.

Only gradually has the understanding dawned that it might be possible for underdeveloped nations to "catch up" by deliberately forcing and controlling the essential steps in the development of their economics. At the midpoint of this century, an intense desire to accomplish these advances in national and individual well-being is felt in virtually every such area in the world. The aspirations of the people are finding response in the attitudes and actions of conscientious and dedicated national leaders. There is also a strong interest on the part of the more economically developed countries to help in this process through providing technical and material assistance.

AN ECONOMIC DEVELOPMENT PROGRAM REQUIRES CAREFUL PLANNING

In the light of these circumstances, the problem resolves itself primarily into a matter of ways and means. While the specific nature of the ways and means will vary widely from country to country, there is general recognition that development requires an attack in depth. It will not now occur automatically or by a process of natural evolution as it seems to have done in the development of the "western" nations. Even if this still were a possibility, no people would be willing to wait the centuries that it would take. A country which hopes to move rapidly from an archaic to a modern economic and social system has to compress into a few decades a complex interrelated set of fundamental changes which took place gradually over several hundred years in the countries of original industrialism.

A task of this magnitude, urgency and complexity suggests the importance of careful, rational planning for economic development. All other things being equal, there seems to be little question but that the countries which do the most careful and logical planning will achieve their goals sooner and with less discomfort than those which do not so plan. There is also every reason to believe that the failure to plan carefully

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will limit that development seriously and may even cause it to fail entirely. The result of such failure can be catastrophic.

MANPOWER PLANNING MUST BE AN INTEGRAL PART OF THE PLANS FOR ECONOMIC DEVELOPMENT

Whatever the course, the direction and timing of a nation's plans for economic development, they must assure that the development of the country's human resources keeps pace with the development of its material resources. It may seem strange that a proposition so basic and obvious should be so often overlooked or misunderstood. But it is. The assumption frequently seems to exist that the necessary number of workers possessing the needed skills and training will somehow automatically turn up when they are needed. This is a fallacious and dangerous assumption.

It takes quite a bit longer to train a skilled machinist than it does to build a machine shop; it takes far longer to train a metallurgist than it does to build even the largest of steel mills. These familiar truisms are only of academic interest to a static nation which looks forward to no improvement in its economic lot. But they take on a vital significance in a country that expects to have a system of modern industrial establishments -- 5, 10, or 20 years hence.

In this century's great drive for human betterment, the race will probably not go to the swift, but to the carefully planned program of economic development. And it will go only to those who comprehend and include the basic elements of manpower planning and action essential to the achievement of the economic goals sought.

WHAT ARE THE ELEMENTS OF MANPOWER PLANNING AND ACTION ESSENTIAL TO THE SUCCESS OF ECONOMIC DEVELOPMENT?

Since this is not a treatise on the ways and means of economic development per se, no attempt is made to deal with the many plans and steps involved in the physical transformation of a national economy. It is, however, intended to be useful from a manpower standpoint to countries which have launched or contemplate launching a broadscale program of economic development having as its objectives (1) the eventual transformation of a largely agricultural subsistence economy to an industrialized market economy and (2) the achievement of rates of productivity and per capita incomes equalling or approaching those of presently "developed" countries with attendant high consumption levels and the health, vitality, and relative well-being which characterizes the citizens of such countries.

Regardless of the course which economic development may take in different countries, and the courses will vary widely, there are certain basic and common elements of manpower planning and action which are essential to the process of economic development. These must be handled and synchronized in such a way that the necessary numbers of workers

possessing the required skills will be ready and available when they are needed to carry out each succeeding phase of the country's development. This includes all types and kinds of skills from the most highly developed managerial and scientific skills on down.

The steps involved are neither simple nor easy, but they are well within the capacity of any country which has the courage and vision to dedicate its entire resources and strength to the reshaping of its economy for the betterment of the lives of its citizens.

These steps, discussed in more detail below, begin with an initial manpower appraisal based on the current demand and supply of labor, as well as the future relationship of these two factors as they will be affected by plans for economic development. Next in order is treated the essential steps of organizing the machinery of government necessary to carry on the planning and administration of an effective manpower program following the initial appraisal. A brief description is given of each of the governmental functions involved. The principal elements inherent in the training of the workforce for the new, emerging economy are then dealt with in summary form. The treatment concludes with a discussion of related considerations which are vital to the success of manpower development but which are often overlooked in more narrow technical discussions of manpower planning. These include programs essential to the proper conditioning or preparation of the workforce from the standpoint of health and literacy. It also includes a consideration of problems of motivating the workforce in the new economic environment and a summary of the all-important demographic problems, solutions to which are essential to the achievement of a better standard of living for the country's people.

Beginning Steps in Planning the Manpower Phases of Economic Development

In considering these elements there is an underlying assumption that some appraisal of natural resources, and of world and home markets, has been made and that resulting policy decisions have been made as to the direction which the nation's economic developments will take. Otherwise, no rational manpower planning can be undertaken.

As a first step, it is essential that the major phases of the plans for economic development be consolidated, reviewed carefully and, when necessary, clarified as to nature, scope, and timing. These plans should then be translated as specifically as possible into manpower terms, i.e., the amounts and kinds of manpower that will be needed at whatever time phases or intervals the plans contemplate. At the same time, steps should be taken to obtain the best possible information of the country's current manpower status, occupationally, in terms of present supply and shortages, together with prospective addition to the supply (short and long term) expected from existing educational and training institutions which may be located within the country as well as additions resulting from citizens educated abroad. By comparing the current and prospective supply situation with the manpower requirements called for if the economic development

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plans are to be met, the dimensions of the manpower development plans will begin to emerge.

For example, if existing university facilities for training civil engineers turn out only 100 per year, whereas economic development plans indicate 500 will be needed per year, five years hence, it is clear that manpower plans must be made to expand training facilities and teaching staff fairly rapidly so that the supply of engineers will be adequate to support the level of construction activities planned for that time.

Primary attention should be directed during these beginning stages of manpower planning to the requirements of the four categories of so-called high level manpower resources: the idea-men and planners; the administrators and managers; the highly trained technical and scientific personnel; and trainers of others. These are of particular importance because of their central role in economic development. It is on these occupations that the very success of development depends. (See discussion on this point under "Training the Labor Force" below.)

In the beginning the planning process will often be a crude, difficult, and discouraging task owing to the lack of necessary data, lack of systematic occupational concepts and, in fact, the lack of people trained to do analysis and planning of this kind--and even perhaps because of uncertainties, flaws, or omissions in essential elements of the economic plans themselves.

The effort is absolutely essential, however. The analytical and planning skills and the data will develop and improve as agencies of government come into being to provide better information and increased ability in the treatment and solution of these problems.

Organizing for Manpower Planning and Administration

Effective manpower planning and administration depend upon the early establishment of permanent machinery of government necessary to accomplish these things on a regular and sustained basis. Until this is accomplished, manpower planning and the execution of manpower decisions will be makeshift efforts with very limited effectiveness.

Manpower planning requires relatively precise, orderly, and comparable data with respect to such things as: the size of population; the status of the workforce in terms of unemployment, employment, and underemployment, its occupational composition, its industrial attachments; age, sex, degree of literacy, birth and death rates; realistic estimates of demand for labor and supply, identifying current and prospective shortages and overages in meaningful terms.

Manpower administrative machinery is necessary to collect this kind of information at varying intervals, and to analyze it for planning purposes. Other machinery is required to carry out the plans made. A system of modern occupational technology, based on occupational analysis,

must be established as the basis for the collection and analysis of useable manpower information and as the basis for establishing modern personnel management techniques in all sectors of the economy. Manpower machinery is needed also to facilitate the employment process throughout the economy, through improving methods of recruitment, selection, assignment, training, counseling, to organize the labor market and to facilitate the movement of labor between jobs, industries and among different parts of the country as required by the developing economy.

While many other sectors of government, national, provincial, and local, as well as important segments of the private sector of the economy will be involved and will play significant roles in manpower phases of economic development, there are four key functions of government essential to the administration of the manpower program. These four functions may be arranged organizationally in a number of different ways, depending upon different internal structures of government.

Acting together in close cooperation, these four units are capable: of generating the kind of information essential to manpower planning; making the necessary plans in relation to the steps contemplated for economic development and initiating the manpower actions which have been planned. Once action is under way, they provide the continued information on the manpower phases of the economy which is needed to gauge the course and effectiveness of these actions, thus furnishing the basis for adjustment of the plans and the essential data required for further cycles of planning and action.

1. An Office of Manpower Resources and Planning

This functions most effectively as a very high level office, independent of all operational departments of government. It often has cabinet-level advisory participation and makes its recommendations to an executive of the government who possesses authority to instruct the operational departments of government with respect to their specific tasks of providing information and data and taking necessary manpower actions. This office determines the information and analyses to be supplied, performs the overall manpower planning, and formulates the necessary recommendations for action. It consults with the operational departments affected by its planning, functions, but retains the final authority for decisions made. It maintains the closest possible working liaison with all government agencies and leading private organizations involved in economic development.

2. Collection and Analysis of Statistical Data for Manpower Purposes

Several agencies of government may be involved in providing the information essential to manpower planning and management. Because of the unusual administrative tasks involved, a specialized statistical organization such as Census Agency or Central Statistical Agency normally provides the population censuses and the agricultural and business censuses which provide indispensable benchmarks for manpower planning. Such an agency also normally provides the much more frequent (e.g. quarterly)

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labor force sample surveys which furnish information on national totals of unemployment, employment and underemployment. The National Employment Service, when properly organized, provides detailed employment trend information by industry and occupation, employment and unemployment estimates for all of the significant labor market areas of the country. Data on output of training and educational institutions, labor turnover, consumer price indexes, absenteeism reports, index of industrial production and vital statistics are among other basic data supplied by various agencies of government.

3. A Public Employment Service

This is the principal operating agency in the manpower program. It has a major role in the organization and management of the local and national labor markets. It operates through a network of local offices throughout the country, providing recruitment and placement services, clearance of labor, area labor market analysis, employment counseling to job applicants, and personnel management services to private or governmental establishments. It maintains an occupational research and development program in its central administrative headquarters, the products of which are made available to all sectors of the economy. It provides information on labor demand and supply by occupations and industry for all significant local labor markets, and the national market as a whole. It is linked closely with the Office of Manpower Resources and Planning and keeps it aware of employment trends and problems, and provides recommendations with respect to vocational training needs as well as needs for development of higher level manpower (i.e., those with the longer "lead" time, such as engineers, scientists, administrators, et al.).

4. A Central Training Authority

A developing economy requires the preparation and output of large numbers of workers in a wide range of complex skills, from educational and training resources which will barely be able to keep abreast of the minimum requirements. In circumstances such as these the choice of curricula and/or training methods, or the determination of the numbers to be educated or trained for specific fields of work, cannot be left to chance decisions of local governmental units, individual school administrators, or individual plant management. Education and training must be geared closely to the plans for economic development and the manpower resources required to carry them out. Secondary school resources must be directed toward giving basic preparation for the training of skilled workers. Certain phases of their work must also be coordinated closely with the university curricula so that proper and coordinated preparation is given to those who will go on to higher educational levels to complete their training.

Industrial and apprenticeship training resources must similarly be directed toward the output of craftsmen and skilled manual workers needed to man the key work stations of the expanding economy.

In order to accomplish these things some kind of central training authority is needed to translate the decisions of the Office of Manpower Resources and Planning into effective educational-training terms, plans and actions. The central training authority should also be responsible for a central appraisal and inventory of all existing facilities and methods of education and training in order to assure proper expansion or adjustment of facilities and the improvement of curricula and training methods with the objective of securing for the economy better occupational preparation and training in less time.

Organizationally, the central training authority might function well as an appendage of the Office of Manpower Resources and Planning, or it could be lodged in a ministry of education, if one exists, coordinated with and subject to the direction of the Office of Manpower Resources and Planning. Wherever it is placed, it should not be burdened with the administration of educational or training institutions as such. Its character should be that of a developmental, supervisory, and coordinating mechanism.

Training the Labor Force

Providing for the effective and properly synchronized training of the labor force in the skills required to achieve economic development is of vital importance to such development. The determination of the specific skills for which training is needed, the best kinds of institutions and methods, the numbers to be trained, the scheduling of the training and the priorities to be followed all demand the most careful and skillful manpower planning.

1. Institutions of Higher Learning: The Development of High Level Manpower

There are key people in the labor force insofar as economic development is concerned. In fact, achievement of economic development depends pretty much upon the provision of the required number of such individuals, properly trained and placed in government and private enterprise. These people may be said to fall into four broad categories: (a) the idea-men and planners; (b) administrators and managers; (c) highly trained technical and scientific personnel; and (d) trainers of others.

The training of people for these occupations is treated first because of their central role in economic development. They are in a very real sense the prime movers of change, the directors and shapers of development itself. Then, too, these occupations involve the longest training or "lead" time of all. All of these "high level" occupations require training beyond the secondary school level, i.e., university training, in many instances post-graduate work, training in other specialized institutions at home or abroad, not to mention a considerable period of on-the-job or internship training after completion of academic work prior to reaching full competence.

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In addition to planning for future long-range supply (and the institutions which produce it), there is also a problem of improving the competence of individuals who now, or will in the near future, occupy positions which require these "high level" skills. In many ways the early stages of development, or the short-term future often appears to present the most difficult problems because time is so short, and because everything seems to depend on everything else. It sometimes often appears that nothing can be done because everything needs to be done at once. Time pressures preclude recourse to the longer courses of university and specialized training which can aid so greatly in the long-term plan.

For the short-term, reliance must be placed on other means. Special short courses in administration or business management can often be set up in existing universities within the country, at a regional institute in some neighboring country, or abroad in other countries. Technical experts may be brought in to help in organizing and establishing new ventures of government or industry. These experts can be utilized substantially as trainers of other key people.

Other key people may be sent abroad for limited periods to familiarize them and train them in western methodology and management concepts. Partially qualified engineers and scientific workers may be given intensive training abroad for periods not exceeding one or two years, sufficient to complete substantially their training to the point of having a working grasp of their specialties sufficient to enable them to perform adequately. Then, too, a very large amount of the very best training will result from "doing," i.e., many skills in management and administration are acquired and much wisdom and training accrues from the basic and simple process of fixing responsibility and attacking the problems at home, solving them as well as possible with whatever guidelines and advice available.

2. The Role of the Secondary Schools

The schools and institutions occupying a position between the primary levels and the university have an important dual role. They, of course, prepare those who are to enter into the universities. In addition, upon the secondary school lies the burden of providing the basic work-preparation of the individuals who will go on to constitute the important body of "middle-management," the foremen, and second-line supervisors; the whole corps of trained "white collar workers" so essential to a modern economy; the technical aides supporting the high-level skills (e.g., the draftsmen behind the engineers, the laboratory technicians behind the chemists and the doctors). In addition, many of those to be trained in the most highly skilled mechanical and industrial occupations (such as power station operators, machinists, steel melters, et al.) will need the full basic foundation provided by the secondary schools.

The various institutions comprising the secondary school level must be geared to these several objectives and every effort made to create processes that will do this reasonably effectively in the least possible time. This will require drastic changes in philosophy and purpose in

those countries where the secondary schools have served largely to prepare a relatively few people, at a leisurely pace, for classical educations in the universities. With the emphasis of the institutions of higher learning sharply oriented to emphasize meeting the country's urgent needs for scientists, engineers, administrators and business executives, medical and health people, et al., the emphasis of the secondary institutions must be directed toward giving these high level skill candidates the most effective basic preparation, making possible acceleration of the subsequent specialized training. The secondary institutions must in the same way direct their processes toward providing the foundation for the later acquisition of the specific skills needed by the highly skilled technicians, advanced mechanical workers, and the "middle-management" and related groups mentioned above.

3. Industrial Training (Training on the Job and through Apprenticeship)

Except for the "white collar" jobs (typing, stenography, bookkeeping, office machine operators, various technicians, etc.), training in most of the specific semiskilled and skilled jobs is done most effectively in the plant and on the job. With the vast variety of machines and techniques in use today (or tomorrow in a developing economy) and the constant changes which occur in technology, it is increasingly impractical, in a school, to teach a particular youngster how to use a specific machine. The schools, however, have a large and important role in aiding industry in planning vocational training and in providing job-related classroom instruction. The principal contribution of the primary-secondary schools, however, is in providing the indispensable basic preparation for work which is the essential foundation for a skilled labor force.

4. Training in Agriculture

As the industrial sector of the economy grows it naturally requires an expanding number of workers. Since in its underdeveloped status most of the country's labor force is engaged in agriculture, this is the sector from which the industrial labor force must come. The magnitude of the required shift can be appreciated from the fact that 75% or more of the total labor force may be engaged in agriculture prior to development. In a developed country, less than 20% will ordinarily be so engaged. While there is a heavy element of underemployment in agriculture, the average individual's production provides subsistence at least. As the movement of agricultural workers to industry takes place, there is a progressively urgent need for increasing the productivity of the rapidly increasing industrial working population. This process and the need it creates will become evident and critical faster in sparsely settled countries than in densely populated ones. But it inevitably occurs in both.

The only answer to this problem is clearly to increase radically the per capita productivity of the agricultural sector of the economy. This in turn requires intensive training of the agricultural producers.

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Experience indicates that this training can be highly rewarding. United Nations experts have stated that 50% increases in yield in two decades or less is possible through training in and application of modern techniques (mainly in the use of fertilizers and seed control) even without any substantial increase in capital or any substantial reorganization of the agricultural system. Far greater gains may be anticipated if such increases are made or reorganization effected.

Training in agriculture requires greatly expanded agricultural extension services, together with related facilities, such as research stations and experimental farms, schools for training more agricultural trainers, etc. Provision and expansion of this training apparatus has an important place and a high priority in manpower planning for economic development.

5. The Need to Change Traditional Concepts

In considering all of the foregoing aspects of training the labor force it is well to keep constantly in mind the urgency of this problem in terms of time. Economic development generates astonishingly large demands for skilled manpower even in its earliest stages. And the demands get progressively larger as the development picks up momentum. In many ways it bears a great similarity to the demands which war mobilization places upon a highly developed economy, particularly with respect to the vast expansion in the need for skills and the shortage of time in which to meet the need.

Every country invariably discovers, under these mobilization urgencies, that traditional training methods are often much too slow. It also discovers new approaches and methods, discarding many elements and steps deemed indispensable in the more leisurely times of peace, with the result that training is greatly speeded up and the demands are met in time. Human capabilities and capacity for rapid learning are often underestimated in normal times. Then, too, training routines in peace time in developed nations tend to become "institutionalized" and overlaid with possibly relevant, but not essential, elements.

In a country engaged in a program of economic development there will have to be a vast outpouring of men who have received no more than one or two years of training to work in spheres where four or six years' training may be customary in developed countries. Economic development will be held up if underdeveloped countries feel compelled to adopt the expensive standards of the more advanced countries.

Related Considerations of Vital Importance to the Manpower Phases of Economic Development

There are policies, programs, and actions which are closely related and essential to the achievement of an effective manpower program in support of economic development. They are in a broader framework than the specific mechanics of manpower estimating and administration and

the gathering of statistics, and care must be taken not to lose sight of them because of over-absorption in the more direct elements.

1. Conditioning or Preparing the Labor Force for Economic Development

The "labor force" is simply a term devised by economists for technical purposes. It is composed of human beings, and if a country is to achieve the development and improvement in the economy to which it aspires, the work is going to have to be done by human beings.

Economic development demands sharp and continuing increases in the productivity of the nation's workers. An integral part of the manpower program involves planning and taking the steps which are essential to conditioning and preparing the bodies and minds of the workers, on whom the achievement of economic progress depends. There are two main elements involved. Both of them cost money, but they will prove as "profitable" in a purely material sense as any capital investment in material resources.

a. Programs to Improve Health, Sanitation, and Housing

Chronic and epidemic diseases affect the vitality of large numbers of workers in many underdeveloped countries. Such workers have little capacity for productive work on any sustained basis. In addition, these disease conditions (which correlate closely with poor housing, sanitation, and nutrition) sharply limit the productive life spans of the members of the labor force. This in turn reduces greatly the returns of the expensive input of education and training which must be made per worker in the course of development (quite aside from the human values involved). Plans for strong public health, sanitation, housing, and nutrition programs (and provision of the trained professional and technical staffs necessary to carry them out) must be made early in the program of economic and manpower development.

b. Establishing a Broad Base of Literacy in the Labor Force (Primary Schools)

Primary education is viewed properly as a prime step in conditioning the labor force for a developing economy and equipping workers with the basic common tools which they must possess in order to make a significant contribution to that development in almost any occupational capacity. Higher levels of education discussed above under "Training the Labor Force" are considered as lines of preparation toward fairly specific and identifiable fields of work.) Effective manpower planning includes this essential element in the preparation of the labor force. It is not "consumers goods" luxury as it is sometimes mistakenly regarded, to be postponed until after the physical development of the economy has been achieved. That development simply will not occur without it.

The great reservoirs of talent and abilities which are locked and buried in a predominantly illiterate population can only be reached or

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tapped in this way. The vast surge of upward mobility upon which the developing economy depends to meet its skyrocketing demands for skilled hands and trained minds must begin here.

2. Motivating the Labor Force

Human beings are much more effective as workers when they are properly motivated. Realistic manpower planning recognizes this fact and incorporates many courses of action which will provide effective motivation to the workers. Important among these are:

a. Steps to assure that the people understand the economic goals being sought and the steps planned to accomplish them. These goals must hold out real promise of a better life if worker and farmer are to be supplied with the necessary motive to intensify their efforts and acquire the new technology.

b. Workers must be able to see opportunity to improve their lots and those of their children through the chance to obtain a basic education. Workers are aware that upward mobility in the new economy will be possible only for the literate.

c. The necessity for accompanying the importation of western industrial techniques with the western methods of controlling them. Failure to do so can be disastrous. This includes the establishment of institutional bases for democratic control of economic and political policy. These are believed to be basic to providing the elements of motivation essential to an effective program of economic development. (Among other things, these include legislation with respect to fair labor standards of wages and working conditions as well as legal protection of the rights of workers to organize freely and to engage in collective bargaining.)

3. Demographic Considerations in Manpower Planning

One of the most serious hazards to achieving a steadily increasing level of per capita income (and per capita consumption) is the race between the annual rate of economic increase or "development" and the annual growth in population. Where the rates of population increase equal or exceed the rates of economic development the fruits of the increased national production are completely offset, and the result will be no more and in all likelihood less per capita real income. The economic development efforts and hopes of millions of newly aroused people may thus be frustrated by population expansion. The internal political implications could be dire indeed.

The essence of the problem is that modern health methods, accelerated in the course of economic development, quickly bring a drop in the traditionally high death rates characteristic of underdeveloped countries. By sanitation, DDT, antibiotics, and present-day medical services of all kinds, it is now possible for a relatively few modern-trained people to push the death rate sharply downward without much change in traditional

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ways of living. Their birth rates, however, tend to remain for a longer time near the levels formerly necessary for the survival of the society. The resulting lag between the swift fall in the death rate and the subsequent fall in the birth rate means a period of very rapid population growth unless determined measures are taken against it. In the past, this lag has extended over generations.

Any serious program of manpower planning in relation to a program of economic development must come to grips with this central problem. While there is a considerable body of information on the subject freely available in the more highly developed countries, these countries for a number of reasons find themselves (and the international agencies in which they participate) inhibited from stressing or promoting actively birth control programs in countries to which they provide other technical assistance. The initiation in obtaining and applying the information in effective programs must have its origin in the countries which are seeking to achieve economic development.

PART II

**ESTABLISHING MANPOWER PROGRAMS
AND ORGANIZATION**

Part II—Chapter A

THE ECONOMICS OF DEVELOPMENT

Note: (While this manual is devoted to the Manpower Aspects of Economic Development, it was believed that a summary treatment of the broader aspects of economic development might be useful. This treatment is intended to provide a more general frame of reference for those US officials who are not economists but who may be involved in discussing manpower matters or providing specialized manpower assistance in underdeveloped countries. It is not, nor was it intended to be, an inclusive or definitive treatment of this extensive subject.

1. What Is Meant by an "Underdeveloped" Country?

The term underdeveloped is a comparative one and is used to refer to the performance record of a nation's economy. In non-economic fields an economically underdeveloped country may be highly developed indeed in art, social organization, religion or philosophy, or other fields. In economic terms, however, it means that such a country is one which affords its people a comparatively poor end product of consumption and material well-being, and that this relatively poor economic performance could be improved by means which are known, understood, and have already been applied by the "developed" countries.

A number of objective measurements of economic performance have been devised over the years which, when applied, demonstrate the above definition fairly well. By whichever measure is used (death rates, infant mortality, consumption indexes, per capita incomes, et al.) the results are about the same. One group of countries, the "developed" ones, tend to cluster at the favorable end of the scale; another much larger group falls fairly consistently at the unfavorable end. Thus, countries can be roughly differentiated into those which provide their people with a relatively good end product of consumption and material well-being, and those which do not. Those which do not occupy most of Asia, the Middle East, Africa, and much of Latin America.

An examination of a few of these measuring devices will be helpful in demonstrating the extremes which separate the economic performance of the developed countries from the others. It must be borne in mind in using these measurements that the statistical data from underdeveloped countries tend to be somewhat inaccurate. In addition, statistical comparisons are difficult for a number of reasons. For example, in the developed countries, almost wholly market economies, measurements can be

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fairly precise, since almost all items of "production" and "consumption" are valued in money and can easily be "counted in." In underdeveloped countries much of the production and consumption, such as subsistence agriculture, is outside the market economy and is not caught in statistical measurements. In spite of this, however, the extremes are so far apart in most cases that the pattern is clear enough. These measurements are not intended to be inclusive, but simply list enough countries to illustrate the point in each case.

The comparison most frequently used and regarded the best broad index of relative economic well-being or "progress" is that of per capita income.

<u>Developed Countries</u>	<u>Annual Per Capita Income</u> <u>in U. S. Dollars</u>
United States of America	\$1,870
United Kingdom	780
France	740
W. Germany	510
 <u>Underdeveloped Countries</u>	
Libya	35
Ethopia	50
India	54
Bolivia	55
Nigeria	64
Indonesia	89
Iran	85
Egypt	110

(Data from Report of the Committee for Economic Development. "Econ. Develop. Asst.," April 1957.)

Another generally accepted comparison which offers a rough relative measurement of "well-being" is that of life expectancy. It is regarded as reflecting in varying degrees the influences of high infant mortality, the adequacy of medical services and care, nutrition and sanitation.

<u>Developed Countries</u>	<u>Life Expectancy of Males</u> <u>at Birth (Years)</u> <u>(Stillbirth Excluded)</u>	<u>Period When the Infor-</u> <u>mation Was Gathered</u>
United States of America	69.5	1955
Canada	66.3	1952
United Kingdom	67.5	1955
Denmark	67.8	1950
France	63.6	1951
Sweden	70.5	1955
Australia	66.07	1948

<u>Underdeveloped Countries</u>	<u>Life Expectancy of Males at Birth (Years) (Stillbirth Excluded)</u>	<u>Period When the Infor- mation Was Gathered</u>
India	32.5	1950
Egypt	35.7	1938
Belgian Congo (African Pop.)	37.6	1952
Mexico	37.9	1940
Haiti (M & F)	32.6	1950
Guatemala	39.6	1951

(Data from UN Statistical Yearbook, 1957)

In underdeveloped countries the majority of the labor force, characteristically, is engaged in agriculture, lives on the land or in small villages in the center of the cultivated plots. Per capita productivity is generally very low. In economically developed countries the great majority of the labor force is engaged in nonagricultural activities and is heavily urbanized. A very small group of highly productive agricultural workers sustain the larger industrial sector and in addition may provide a substantial quantity for export.

<u>Developed Countries</u>	<u>Percent of Labor Force Engaged in Agriculture</u>
United Kingdom	5
Belgium	12
United States of America	13
Australia	13
Canada	19
Denmark	25
W. Germany	23
<u>Underdeveloped Countries</u>	
India	72
Turkey	70
Philippines	65
Colombia	60
Mexico	57
Bolivia	60

(Data from the UN Statistical Yearbook, 1957)

Per capita consumption of certain key things shows a high degree of correlation with the other indicators of "development" or lack of it. Two of three of these, i.e., per capita consumption of steel and per capita consumption of mechanical energy (a substitute for human or animal energy), are close corollaries of industrialization. The third, which indicates the number of population per each physician, is a rough measure of the availability or "consumption" of a vital service which seems to have a meaningful correlation with the other indicators of development.

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<u>Developed Countries</u>	<u>Per Capita Steel Consumption in Kilograms</u>	<u>Per Capita Mechanical Energy Consumption (Coal Equivalents Given in Metric Tons)</u>	<u>No. of Pop. to Each Physician</u>
U.S. of America	600	8.58	790
W. Germany	417	3.60	740
Canada	399	8.25	940
Sweden	385	4.59	1300
United Kingdom	380	5.03	900
Belgium	296	4.34	920
<u>Underdeveloped Countries</u>			
Mexico	43	0.75	2200
Colombia	30	0.50	INA
Iraq	29	0.48	6000
Turkey	15	0.23	3400
Philippines	14	0.19	9600
Egypt	10	0.24	3600
India	9	0.12	5500
Indonesia	3	0.12	71000

(UN Statistical Yearbook, 1957)

The degree of literacy among the population provides a significant indicator of "development." Because the number of illiterates has dropped to such low levels in the developed countries of Western Europe and North America, most of them no longer ask this information during the regular census. France and Belgium still do, however, and the percent of illiteracy there (both sexes) runs around 3 percent of the population. It can be assumed that the other developed countries have similar proportions. This may be contrasted to the proportion in selected underdeveloped countries.

Algeria (Moslem population only)	94.0%	Guatemala	70.3%
Haiti	89.3%	Bolivia	68.9%
India	82.1%	Turkey	65.4%
Egypt	74.5%		

(UN Statistical Yearbook, 1957)

2. What Does the Process of Economic Development Involve?
How Is It Achieved?

To put it as briefly as possible, economic development is the process whereby the people of a country come to utilize the resources available to bring about a sustained increase in per capita production of goods and services. This is done through four principal lines of endeavor:

Improving the technology;

Increasing savings and the formation of capital;

Improving the labor force;

Creating a climate and institutions (social, legal and political) which makes the accomplishment of these things possible by a self-reliant citizenship in a free society.

The objective of these endeavors is primarily a better individual standard of living for the people of the country undertaking the program of development. There are often related objectives, such as increasing the nation's strength to preserve its independence or to avoid encroachment from enemies or to satisfy the desire for national and personal respect, status, prestige, and importance in the world which experience shows is not readily accorded to "backward" weak countries or their citizens. These related objectives seldom materialize unless the primary one is achieved.

There needs to be recognition in discussing economic development that while an effective program will raise any country from its present levels it does not necessarily produce or guarantee an ultimate, ideally high and uniform standard of living for all countries. Given exactly the same skill and vigor applied in a number of different countries, the differences in basic resources as among the countries will bestow advantages or impose absolute limitations on the level of development achievable by the individual nations. In short, a country very poor in resources will rarely achieve the same levels of development that a country rich in resources will achieve, other things being equal. Even within highly developed countries, for example, there are regions which, being poor in resources, lag far behind in all the national indicators of "development."

There also needs to be clear recognition that the social developments and upheavals, the frustrations and early-stage hardships involved in the process will provide fertile seed for communist exploitation or internal moves to totalitarianism and dictatorship. As a noted economist has astutely observed: "Economic development doesn't necessarily make nice people." This is no argument against economic development, however, for unrest and turmoil often occur even in the complete absence of any development at all. It is simply a caution against over-optimism in what might otherwise be regarded as a guaranteed panacea for world democracy.

The task of describing specifically how a country achieves a larger income per capita (i.e., "develops") would be much easier if there were a generally accepted theory of economic growth. Unfortunately, no such thing exists for reasons stemming from the extreme complexity of the subject and man's present, limited state of knowledge of it. Because of this no step-by-step blueprint can be formulated or offered here as to exactly "how" development is achieved. There does exist a workable

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understanding of what development is and what it accomplishes, and there is agreement as to the four general lines of endeavor (above) which are involved in its accomplishment. A more detailed examination of the nature and characteristics of these several lines of endeavor, moreover, can throw considerable light on how a sustained increase in per capita production of goods and services is achieved.

a. Improving the Technology

Efficient technological advance, i.e., the development and use of techniques which will do the most to raise productivity and increase income, is used here in its broadest terms. Basic first steps in the country to survey the natural resources and to survey the potential local and foreign markets are important technological measures.

Significant advances in technology are often achieved through relatively simple and inexpensive techniques, already well known in advanced countries. In rural India, for example, pilot projects in community development have brought increases in farm output of more than 40% in three years, mainly from such innovations as better seeds, fertilizers, and pest control. Simple seed drills drawn by bullocks have resulted in great savings in costly seed and have improved productivity in wide areas where the early use of power driven mechanical equipment could neither be financed or maintained with existing capital and skill resources. Increases of 25% in production from hand looms have been achieved by substituting a fly for the throw shuttle.

There is a desirable sequence in effecting technological advances, partly imposed by circumstances and partly by logic and experience, which promises better ultimate results than if no real thought is devoted to the order of steps. Most countries start the process of development with very little available capital and an unskilled, largely illiterate workforce. The use of techniques (such as those touched upon above) during the early period of development, which are skill and capital saving, will often prepare an effective base for a further and a sustained advance into more capital and skill intensive techniques. Plunging too soon into the use of complex, costly techniques before the scene is prepared for further advance can be highly wasteful.

As capital is accumulated (see b below) and skills are developed (see c below) increasing amounts of machinery and new techniques are introduced, accompanied by growing amounts of mechanical energy replacing human and animal effort. With each such step increases result in a higher output per man hour of labor. As productivity increases, national income grows. The worker in a new textile factory produces far more cloth than one using a hand loom. A motor truck transports far more goods and faster than an animal drawn vehicle. And so it goes, virtually every new element introduced as a part of the process of economic growth leads to higher labor productivity.

It is also important to bear in mind that improvements in the whole range of techniques involved in management, organization, and planning are vital elements and have major impact on this process.

b. Improving Savings and the Formation of Capital

Economic development requires ever-increasing amounts of capital. The rate of investment (money from earnings and savings) in a country correlates fairly closely with the rate of economic growth and has a direct causal relationship to it. United Nations' Economic Commission for Asia and the Far East Secretariat provides a benchmark which is of help in understanding the contrast in capital formation between economically developed countries and those which are yet economically underdeveloped.

In the dynamic economies of Western Europe and North America, it points out, annual net investment runs about 15% of national income or more, and such rates of capital formation are associated with growth rates which allow consumption per person to rise by 1.5 to 2 percent a year. In Asia, on the other hand, annual net investment is about 5% of national income. The Commission concludes, and with considerable logic, that in countries where population is increasing by 1.5% per annum or more (and most Asian nations are either close to, or exceed this rate), an annual net investment of 5% or less of national income is not enough to raise the standard of living and may not even be enough to keep the standard of living from falling.

The importance of an underdeveloped country's endeavor to increase its savings and the formation of capital for investment clearly cannot be overestimated. Furthermore, the rate of capital formation must be very greatly increased over the rate existing in the pre-development period. As a practical matter, the great bulk of the capital invested in economic development must be saved, or generated, within the country itself. Capital supply (funds from outside the country, foreign aid, et al.), while normally a minor portion of the total which will be needed, can, however, play a vital catalytic role. This role is particularly influential and effective during the initial phases of the development program. It is during these early phases that income and savings are usually lowest, whereas the initial development must attain a certain minimum velocity or it will not "take" or become self-generating. Capital from outside can assist greatly in attaining this needed minimum velocity.

In order to achieve the necessary internal increases in the rate of capital formation, social institutions have to be built up and new social habits have to be formed. These institutions must handle two problems, because capital formation is a two-edged proposition: (a) the population must be induced or forced to consume less than the whole annual output, that is, to save, directly or indirectly; (b) the margin between total output and consumption must be directed into productive investment which will increase the country's capacity to produce in future years.

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There are several principal methods for assembling capital. These will be touched upon here only briefly:

- (1) Private savings and investment (with a corresponding growth in institutions and organizations which mobilize savings and channel them into constructive activity: i.e., commercial and savings banks, agricultural and industrial banks, insurance companies, credit unions and securities markets). Government supervision and insurance of safety and liquidity of savings can also provide incentives for increased savings. Drastic curtailment of imports of luxury items and of money spent abroad in travel or for investment by wealthy groups also tend to increase domestic savings volume.
- (2) Government taxation, borrowing and earnings from government enterprise. In addition to bringing in funds, taxation acts to curtail consumption which is important in capital formation.
- (3) Investment in kind. Finance is only one technique, through the most powerful one, for bringing resources together and organizing them for the production of capital goods. Underdeveloped countries need small buildings for village schools and dispensaries, wells and sanitary facilities, roads and irrigation canals. There generally exists either a general surplus of manpower all of the time, or in any case during the long seasonal slacks in the traditional agriculture in which most people are engaged. Given these needs and these resources (plus a very small input of materials or simple tools), it is possible to form capital in important amounts without going through any substantial amount of money savings and money investment. The community development schemes of India demonstrate vividly the great merits of such schemes which foster individual and collective efforts which create real capital out of resources that would otherwise go unused.

c. Improving the Labor Force

This major line of endeavor through which the people of a country move to achieve a sustained increase in per capita production of goods and savings is treated in some detail in Part I of this Manual and in the other chapter of Part II. For this reason no discussion is believed needed here, except to place this phase in its proper context in the process of economic development.

d. Creating a Climate, and Institutions, which Makes the Accomplishment of the Preceding Lines of Endeavor Possible

Economic development involves the transformation of a whole society, and centuries of deeply rooted attitudes, patterns of thought, social outlook and social institutions. No attempt will be made here to indicate all of the possible things which need to be done to achieve this altered climate. Only the major ones are touched upon to suggest the general nature of the pattern.

Fundamental to all other factors is the desire and the will to develop, both on the part of the country's leaders and the people. These factors themselves are in large part the product of complex interaction of other forces:

- (1) Broadening the bases of political power is a principle which, if implemented, will greatly increase the prospect of successful development and assist in making it a democratic development. Bases of political power are broadened when more people outside the hitherto privileged groups acquire the means of making their influence felt in government, in economic affairs and in society generally.
- (2) Establishment of conditions which assure that men can secure the fruits of their own efforts: e.g., equitable land tenure laws; protection of property against civil disorder or confiscation; curtailing communal or tribal distribution of individual earnings and agricultural resources.
- (3) Establishment of honest and efficient public administration. This is clearly essential to the planning and execution of the course of economic development itself. In addition, failure to achieve this has an adverse and inhibiting effect on development throughout all segments of the economy. For example, capital formation and investment is frustrated, resources diverted or wasted and public confidence in the possibility of development deteriorates or disappears.
- (4) Generating a supply of entrepreneurs and managers in private enterprise.
- (5) Bringing about changes in prevailing attitudes toward manual work. Prospects for effective development require a major shift in values in many underdeveloped countries. One of the main shifts is the removal of the low esteem in which manual work is held. This applies not only to the performance jobs (such as machine operator or carpenter) but to the middle groups of foremen, supervisors, et al. who must stand ready to

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dig in and get their hands dirty in instructing workers and getting a project under way. Positive public attitudes and positions of the nation's political leaders can aid in this. A heavy portion of the task will also fall to the educational system, expanded, invigorated and reoriented to the goals of national development.

- (6) Creation of equitable tax structures and collections to assure that taxes are paid in relation to ability to pay and that all subject to the law do in fact pay.
- (7) Broadening the distribution of the fruits of economic progress (consistent with the necessity for achieving increased capital formation) is a necessary condition for maximum growth of per capita income in terms both:
 - (a) Of creating an expanding domestic market; and
 - (b) Providing incentives to workers to respond favorably to changes in traditional patterns of work.

3. Conclusions

As the four broad lines of endeavor (2 above) are pursued in depth and their effects are felt, economic development finally begins to "take" or becomes relatively self-generating and self-sustaining. This is a long-term proposition,^{*} but as it occurs certain fundamental changes in the economy will become increasingly evident:

a. A progressive and massive reallocation of the workforce from agriculture to industrial and commercial activities accompanied by a vast expansion in the production facilities in the nonagricultural sector. Where formerly 65 - 70 percent of the workforce was in agriculture, the figure moves to 30 to 25 percent or lower.

b. Heavy increases in agricultural productivity, achieved with far fewer workers than in the past.

c. Widespread and abundant growth in the country's social overhead capital or "social plant," i.e., roads, harbors, railroads, utilities, health and sanitation, educational institutions, etc.

d. Rates of illiteracy falling from 75% and 80% to 30%, 25%, and 15%.

^{*}Even if everything else goes well, the result may be failure: i.e., a lower individual standard of living instead of a higher one, unless the annual growth in population can be held well below the annual rate of economic growth (or if the economic growth can be sustained at a much higher rate than the population increase).

e. An increasing proportion of high level skilled people in the workforce, i.e., managers, scientists, engineers and corresponding increases in skilled and semiskilled industrial workers.

f. Heavily increased consumption of mechanical energy, steel and other key industrial items.

g. Extended life expectancy, rising from 35 to 40 years at birth to 55 and 65 years, accompanied by lower infant mortality and substantial improvement in the health and vigor of the people.

h. Finally, and as a result of the other factors, a steadily increasing per capita productivity and accompanying increased per capita annual income, rising steadily from the typical \$45 to \$75 per annum, to \$250, \$300, \$400 and up.

PART II

CHAPTER B

**ESTABLISHING THE FOUNDATION
FOR A MANPOWER PROGRAM**

Part II—Chapter B

ESTABLISHING THE FOUNDATION FOR A MANPOWER PROGRAM

Summary

The first step toward undertaking a manpower program in support of a program for economic development is, of course, to determine the nature and the dimensions of the development program itself. Unless such a program does exist, there is little justification for investing the formidable amounts of energy and money required to establish the planning, data collecting, and administrative machinery essential to a manpower program. Conversely, where there is a tangible economic development effort, its size and nature will, to a large extent, determine the size and nature of the manpower institutions and programs needed to support it.

The second step is to identify and appraise any existing governmental machinery for manpower planning, statistics and administration. Within the context of the information provided through the first two steps, a third step should be made. An initial manpower assessment should be undertaken in order to establish the demand-supply position (for all occupations requiring substantial training and/or education) currently and for future periods suggested by the development plans. This assessment should also include specific recommendations with respect to the action necessary to meet present and prospective shortages, including establishment of the required statistical, planning and administrative agencies and training institutions.

These three steps are more fully developed below.

1. Determining the Nature and the Dimensions of the Program of Economic Development

If there is an A.I.D. Mission in the country, its staff will be informed on this matter, and it normally will only be necessary to convert the plan information into gross manpower terms before proceeding to the next step.

If this resource is not available, it will be necessary to assemble the information from sources within the host-country government. Where a central agency for economic development planning exists, it will ordinarily have much of the information needed. In other situations no central information on planning may exist, but certain of the major departments of the government, (or quasi-governmental agencies, such as central banks, et al.) may have development plans of their own. The country's annual budget statement will often afford useful clues as to which departments may be planning or undertaking particular development projects.

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This whole process is frequently less simple than it sounds. Comprehensive, well-integrated and coordinated economic planning is the exception rather than the rule. The development "program" may consist of from six to a dozen or more "plans" or "schemes," ranging from a "mass education" scheme, a plan for "health development," a plan for a "rehabilitation brigade" and an assortment of individual industrial or agricultural projects. All may be administered by different agencies of government, with uncoordinated time schedules, procurement and funding plans. It may be relatively easy to identify and secure information on certain large, well-known projects, but much harder to run down a bigger number of less well-publicized ones. Even the terminology may prove elusive, as in the case of government agencies engaged in activities which its administrators may not clearly recognize as elements in an economic development program (e.g., road building, flood control, harbor improvement, et al.).

Development plans vary widely as among different countries. In some places government economic planning and control may cover much of the economic life of the nation. In others, government development planning may be concentrated upon a relatively few, but very important, "central core" projects in an otherwise unplanned economy. Care must be taken in analyzing the planned development under these conditions that the anticipated impact of the "central core" projects on the rest of the economy is taken into account. This may have more manpower implications in the long run than the specific projects themselves.

There is one reassuring feature in this problem, i.e., there are almost certain to be tangible plans in existence somewhere in the government, if there is a real economic development effort of any magnitude either in progress or imminent. Economic development is rarely if ever spontaneous these days and is almost always founded on some concrete proposals or plans. Such plans will normally be reasonably specific and detailed. They will stipulate the projects to be carried out, the industries to be established, the production capacities to be provided, the investment outlays to be made, and who is to be responsible in each instance.

(It is necessary to distinguish bona fide plans of this sort from a product that sometimes masquerades as a development plan, or is mistaken for one. "Plans" in this latter category are made without provision for their realization, no authorities being empowered to enforce the plans or to obtain the funds to carry them out. Such development "plans" are only of the "target" variety with nothing but a pious hope that actual performance will follow. Because economic development is a popular and politically potent subject, office holders are sometimes tempted to publicize imposing, but substanceless, plans of this kind for political advantage.)

Economic development projects (or expansions of existing activities) contained in bona fide plans are practically never expressed in manpower terms, but in terms of cost, units of output, or other such categories. In order to be meaningful for manpower program purposes, they must be converted first into gross manpower totals and these totals distributed by years according to time tables established for the projects.

Conversion of these industrial projections into gross manpower totals presents certain problems which justify a brief discussion at this point.

a. If the project involves expansion of an activity which already exists in the local economy, the conversion will not be too difficult. Existing relationships can be determined between the existing output and the amount of manpower involved per unit of output (i.e., output per man hour) under normal levels of production. Such ratios can be applied to the expanded levels of output contemplated in the development plans. There will be experienced managers to provide advice as to what, if any, differences in the ratio may be expected in the larger operations provided in the plans. Local experience is particularly helpful in that it will reflect going levels of individual productivity, in-plant utilization of manpower, and hiring practices as they exist in that particular country.

b. If the planned project represents an activity which does not currently exist in the economy, the closest approximation to the advantages inherent in the situation above may often be obtained by securing the experience of some other country within the same region which does have such an industry.

c. When the planned activity exists neither in the host country itself or in any of the other countries in the region, experience from "developed" countries must, of necessity, be used. Considerable caution should be observed in translating this experience into the local environment. Local practices such as over-hiring due to cheap, abundant labor supply, prevailing absenteeism levels and efficiency of management must be weighed carefully with other worker productivity factors in adjusting the developed country staffing levels to the local situation.

Conversion of the plans into manpower totals should be done for every phase of the contemplated program. Special care should be taken to include provisions for the expanded needs of government itself. Economic plans often omit the social services, training institutions and expanded agencies of government upon which realization of the economic plans must ultimately depend.

2. Identifying and Evaluating Existing Governmental Machinery for Manpower Planning, Manpower Statistics and the Administration of Manpower Programs

This step in laying the foundation for a manpower program is more or less in the nature of an inventory. It is an essential and important step involving not only the identification of agencies and programs but the formation of judgments with respect to their adequacy. It affords familiarity with the apparatus and information which is available in the manpower field, as well as providing the basis for the needed planning action necessary to fill the gaps which are found.

These gaps are, characteristically, quite extensive in underdeveloped countries. Establishing the needed institutions to fill these gaps, and

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strengthening or expanding existing ones must be undertaken as soon as possible. Until effective institutions are brought into being, no really effective manpower program is possible, since rational planning cannot occur without valid labor market information, nor can plans be translated into action without organizations to accomplish the actions needed.

Attention is directed to:

a. Institutions capable of maintaining a continuing program of labor market information reflecting the distribution and growth of employment; the magnitude and distribution of unemployment and the skills and composition of the employed or unemployed (e.g., census, national employment service, bureau of labor statistics).

b. Institutions capable of utilizing such information for the planning of a sustained manpower program and for directing and carrying out such a program (e.g., an office of manpower resources and planning, either as an independent agency or as part of an overhead economic development planning organization; a national employment service; scientific rosters, et al.).

c. Institutions capable of providing all, or significant portions of the education and training in the occupational fields covered in the initial manpower assessment, (e.g., technical institutes, specialized university courses and graduate schools, facilities for in-plant training, including that of foremen and supervisory staff, et al.).

Ascertaining the presence or absence of the kinds of institutions indicated above, while presenting some problems, is a much easier task than evaluating those which are found to exist, and forming judgments as to their adequacy. Conclusions of this kind, even if they are only rough or approximate, are however necessary in determining what needs to be done.

A considerable amount of useful information can be obtained from people on the USOM or embassy staff or from UN and private foundation people who may be in the country, and who have had occasion to deal with the agencies or use their services. Host-country officials of these agencies, themselves, can often be quite helpful in pointing out the strengths and limitations of their operations, if they clearly understand the constructive purpose of the inquiry. Other judgments may be formed by examining the organizational location of the agency within the government for clues as to its status and importance. Similar clues may be obtained also by comparing the size of its staff in relation to other governmental units, and in relation to the size of the country itself. More specific points of inquiry in relation to the statistical agencies and their products will suggest themselves after a review of Chapter D, below, which examines this subject in more detail. Points of reference of considerable aid in forming judgments with respect to the adequacy of manpower research, statistical and operating functions of the host country's national employment service are available in A.I.D.'s Manual, "Establishment of National Employment Services in Developing Countries", (1963).

3. An Initial Manpower Assessment or Survey

Typically, the kind of manpower information needed in order to initiate manpower planning in support of economic development is not available in underdeveloped countries, at least in the initial stages of development. Nor are institutions in existence capable of producing it. In most situations, however, economic development is under way in one form or another, coordinated or segmented, planned or otherwise. There is consequently an urgent need for some framework of information with respect to the manpower requirements generated by the economic movement, so that some plans and provisions, however rough, can be initiated to meet them. This need is too urgent to wait upon the creation of the new institutions to carry on a permanent long-range manpower program.

There is a method for bridging this gap. While it usually yields only approximate information, it does provide a workable basis for the initiation of a manpower program pending the establishment of permanent institutions to carry on and provide better and more accurate information. This method is referred to as a "Manpower Assessment" or a "Manpower Survey."

In summary form, the work of Manpower Assessment may be described as involving the following principal phases:

- a. The study of the actual and projected population, in order to determine the numerical, geographic and occupational distribution of the labor force;
- b. The identification of the geographic, numerical and occupational distribution of jobs, both as they now exist and as it is estimated that they will exist at specific future periods within the framework of the economic plans;
- c. The analysis of the labor market in which labor supply and demand meet, and the identification of imbalance between the two with respect to total numbers, occupations or geographic location.
- d. Careful analysis of all existing training institutions (including tangible on-the-job training schemes in private industry and government) and the potential rate of output per year, development of recommendations with respect to the actions which need to be taken and the educational and training facilities which need to be established or expanded in order to meet the increased needs for the skilled and trained people which the survey shows will result from the economic development. These plans should be specific as to the numbers of workers and the occupations involved.

There are two basic principles which should be clearly recognized as applying to all manpower assessments or surveys:

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a. Each manpower survey must be designed to meet the particular economic development requirements of the country concerned and must be organized in the light of the existing facilities; and

b. The value of the data resulting from a manpower survey is of relatively short duration and the cost and effort involved is hardly justified unless the survey leads to the establishment of a continuing labor market analysis program which will provide the basis for determining the trends in the qualitative and quantitative aspects of the labor supply-labor demand relationship.

Some additional description and elaboration of manpower surveys may be of interest to those who may be called upon to discuss them with host country officials.

There is one common characteristic of practically all underdeveloped countries which makes it possible to focus the manpower survey sharply and to reduce substantially the amount of work which might otherwise be involved. Specifically, the economies of such countries are characterized generally by an overall surplus of labor, combined with a severe shortage of workers with the particular aptitudes, skills and abilities needed for economic development.

Because of this characteristic, the main emphasis of the manpower survey can be directed primarily to examining the present and prospective demand and supply in a relatively limited band of occupations. Only those which take some substantial amount of education and/or training need to be treated intensively within the framework of the universe established by the census-type information indicated under "a" above. Thus the survey can proceed under the realistic assumption that since all skilled workers are for the most part scarce in the economy, they are by and large all employed. The identification of the volume of such workers in these occupations and estimating the extent of existing shortages can be accomplished by surveying a representative sample of employer establishments. */

An additional shortcut is usually applied to reduce the size and complexity of the study. This is accomplished by confining the study primarily to those particular sectors of the economy likely to be affected most substantially by the development program. The most common sectors are:

*/ Supplemental information with respect to certain skilled and professional occupations will have to be obtained from other sources. For example, information on doctors can be obtained through the medical society. Government is always included as employer, and in most underdeveloped countries it accounts for up to half or more of the nonagricultural employment plus employment of most of the agricultural connected professions, such as agronomists, entymologists, veterinarians, et al.

Manufacturing
Mining and Quarrying
Construction (Large scale)
Electricity, Gas, Water and Sanitary Services
Public Services
Transport, Storage and Communication

This general approach will normally be satisfactory for planning purposes during the interim period between the completion of the manpower survey and the establishment of permanent manpower institutions which will be competent to furnish more comprehensive, accurate and continuing labor market information.

Even by sharply limiting the range of jobs and the industrial sectors to be examined, the survey is far from being a simple task.

In making the survey several main lines of endeavor are undertaken:

a. An Extensive Study is Made of Employing Establishments (Private and Public) in the Industrial Sectors Chosen

About the only reasonably reliable method for use in an underdeveloped area is to complete questionnaire schedules through personal interviews with a representative sample of establishments in the industrial sectors selected. Mail queries are usually not satisfactory. It is necessary to identify the occupations requiring the minimum training time decided upon, and to train interviewers sufficiently in occupational techniques to enable them to validate the existence of the occupations in the establishment visited. Standardization of occupational terminology can be assured through use of ILO's International Standard Classification of Occupations. Industrial classification may be similarly standardized through use of the United Nations International Standard Industrial Classification of All Economic Activities.

Information must be elicited from every employer in the sample with respect to his current total employment ^{*}/ and the number at work in each of the selected occupations plus the current number of vacancies in these occupations (i.e., active need but no supply). The employer is then asked to estimate, based on his knowledge of and experience in the industry, the plant's total employment and the requirements in each of the selected

^{*}/Most studies also attempt to secure total employment in the establishment at one or more periods in the past (e.g., 5 years ago) as an aid in plotting the probable future trend in total employment, and also as a frame of reference in evaluating the employer's estimates of the future. The individuals currently at work in the selected occupations are distributed by broad age categories, to permit estimate of future shrinkage or wastage of the present supply in each skill owing to death and retirement.

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occupations at a point in the near future and also at a more distant date (e.g., 2 years and 5 years). The periods should relate to time frames used in the economic development plans where possible, but held to the relatively near-term periods, normally not exceeding 5 years.

b. A Supplementary Projection of Future Requirements Is Also Made

While the study of employing establishments provides highly useful information with respect to the current situation regarding the employment of, and needs for, workers in the selected shortage occupations, employer's estimates of the future need to be supplemented or modified substantially by information from other sources. There are several reasons for this. Few employers devote time to making extensive future projections, and thus most employers tend to make only a hasty guess when confronted with a request for the number and kinds of workers they will need in some future year. Then, too, individual employers may not be fully aware of the nature of the country's economic development plans, nor their potential impact upon his establishment and his industry. In addition, economic plans often call for new firms in new activities and since they will not be currently in existence, their needs cannot be determined in a study of existing employers.

No attempt will be made to provide technical treatment of the steps involved in analyzing the economic and other factors that may affect employment in each occupation, in order to estimate the future impact of each such factor in arriving at a quantitative estimate of the future requirements for the occupation. Suffice it to say that this is the general approach which must be employed, since neither employer inquiry nor projections of future employment by simple extrapolation of a trend derived from historical data will provide sufficiently reliable answers by themselves.

Growth of certain occupations, which are limited in number, can be projected by relating certain factors known to affect them directly. For example, the number of auto mechanics required is related among other things to the number of vehicles in use (which in turn reflect population growth, consumer incomes and business activity). The number of teachers required is affected by the number of pupils (which in turn may be projected by examining birth rates and trends in the proportion of children at each age who attend school plus consideration of national plans for stepping up educational activities). Similarly, the number of physicians needed can be estimated by relating them by ratio to the population, expected population growth and government plans for bringing the ratio of physicians to population closer to those of economically advanced countries.

Projecting requirements for most occupations (particularly in industry), however, requires analysis of the outlook for production and employment in each of the major industries employing workers in the occupation as well as trends in the use of each occupation in the industry. The plans

for economic development in the country should provide reasonably useful bases for determining the outlook in each case. In general terms it may be said that in estimating future trends in requirements for skilled and specialized workers, the usual starting point is the total (prospective) demand of the economy for goods and services. This can be proportioned among the requirements for each major product or service (classified by industry). The estimates of production can then be translated into requirements for workers--in total and by occupation.

Over-all manpower requirements may be derived from estimated industry or production levels by estimating the change of output per man hour (see Chapter B, section 1) and by making assumptions as to changes in hours of work. Occupational manpower requirements can be derived from the industry employment projections by applying appropriate occupational composition patterns for the individual industries. If the industry already exists in the underdeveloped country, its occupational composition may be analyzed and the proportion of each of the selected occupations to total employment can be established. These percentages can be applied against the total expanded employment planned for the industry to determine the future requirements in each such occupation (taking into account possible shifts in the use of the occupation owing to changes in technology, increased productivity related to addition of new capital, etc.).

Where the industries involved in the economic development program will be new to the country, the occupational composition of such industries as they exist in developed countries may be used as a guide. The Bureau of Labor Statistics (U.S. Department of Labor) has developed occupational composition patterns for the entire economy of the United States, broken down into about 150 industrial sectors, with approximately 150 skilled occupations broken out separately. These are referred to as the Occupational-Industry Matrix, and specific individual industrial sectors may be obtained upon request to the U.S. Department of Labor, Bureau of Labor Statistics.

c. Output of Existing Educational and Training Facilities (Including In-Plant) Is Appraised

It is necessary to determine the current annual additions to the supply in each of the selected occupations. This involves checking the output of all of the formal training institutions (universities, technical schools, apprenticeships and in-plant training).

In addition to obtaining the quantity of output, some examination and evaluation of the quality of the current training is necessary in order to appraise the situation adequately. For example, vocational and trade schools often report an annual output in specific occupations, but closer scrutiny reveals that the graduates cannot be employed in the occupations because the training is inadequate, or has not kept pace with technological changes in the industry. Universities report numbers of graduates in the "sciences," "humanities," or various professions or the "arts" who are not effectively prepared for any specific occupations. And so on.

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Identification of these situations is essential not only to modify estimates of the annual additions to the shortage occupations, but the information with respect to ineffectively utilized education and training facilities will be of value in developing manpower plans to remedy the situation (see Chapter F below: Central Training Authority).

d. A Comparison Is Made of Demand and Supply and
A Program Is Formulated To Meet the Project Requirements

By a careful review and comparison of the occupational labor demand information from the survey of employing establishments (item "a" above) as modified by the supplementary projections (item "b" above) with the occupational labor supply information (item "c" above), the dimension of the shortfall in each occupational category will emerge fairly clearly.*/ This information in turn provides the basis for a plan of action, or "manpower program" designed to increase the supply of trained workers in the amounts and kinds required to meet the needs of the economic development program within the time periods selected for the manpower survey or "assessment." There will be situations in which it is apparent that no reasonable possibility exists of increasing the supply fast enough in certain categories. Where a thorough appraisal yields this conclusion, development plans should be modified in either size or time schedules to meet the realities of the manpower situation (or, in the case of certain vital "core" projects, alternative arrangements adopted for importing the needed skills on contract to bridge the gap).

In addition to producing a useable body of information, and making possible the initiation of manpower planning prior to the establishment of permanent manpower institutions for planning and action, manpower surveys often demonstrate to the officials of underdeveloped countries, rather dramatically and for the first time, the integral relationship of manpower development to economic development.

*/ In estimating the number of workers who will have to be trained to meet the projected requirements, it is also necessary to add a quantity equal to the estimated annual shrinkage of the present supply through death and retirement. This can be a very substantial number over a 5-year period, often equal to or exceeding the net number needed for expansion per se.

PART II

CHAPTER C

**ESTABLISHING MANPOWER PLANNING
ON A FORMAL BASIS**

Part II—Chapter C

ESTABLISHING MANPOWER PLANNING ON A FORMAL BASIS

Comprehensive planning of economic development is a relatively new activity of government. As previous discussion has suggested (Chapter B, 1) it is often segmented, improvised on an ad hoc basis, and frequently lacks direction, or is poorly coordinated. As crude as economic planning may be, however, it does exist and it functions after a fashion in most countries which have launched development efforts. In this respect it is far ahead of any formal efforts to undertake rational manpower planning and programming. Indeed, recognition of the central role of manpower in economic development has been slow in coming. Its significance is fully understood in relatively few countries today, although comprehension is now accelerating rapidly.

For these reasons it is not possible to present here any representative summary of experience in underdeveloped countries. Nor, for the same reasons is it possible to provide any critique of the relative effectiveness of various methods or organizational forms which have been tried. In even the one or two countries which have pioneered in this matter (e.g., India), sufficient time has not elapsed to permit evaluation of results with any degree of accuracy. Experience in manpower planning in economically developed countries provides little illumination. Except in time of war, none of them plan and carry out a manpower program as such, even though they possess the necessary statistical and institutional resources. Several do prepare "manpower budgets" annually or for projected periods, but these are primarily estimates of what it is believed will "happen". They are not, ordinarily, bases for action.

The need of underdeveloped countries for rational manpower planning, however, is just as urgent as their need to plan economic development. As pointed out previously, they are trying to accomplish in decades the economic advances that took centuries in the developed countries. This cannot be done without economic planning, which in turn cannot achieve its goals in this accelerated tempo without planning for the skills necessary to man the expanded resources.

This situation imposes its own logic. Machinery for manpower planning must emerge, as in fact it is beginning to, in order that the desperately sought economic goals can be realized. There has been a great upsurge of interest and activity concerning manpower matters within the past few years in most of the underdeveloped countries. Manpower surveys have been made, new labor statistics programs initiated, national employment service systems started, training activities and job analysis research introduced, with technical assistance of the United States, international agencies, private foundations and universities. It is the purpose of

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this chapter to suggest an improved organizational framework for planning in order to tie together the many separate manpower efforts and focus them more sharply on the achievement of the plans for economic development.

The first essential is to fix responsibility within the government structure for developing the manpower plans necessary to support the program of economic development. The second essential is to provide the responsible organizational unit with the authority necessary to carry out the assigned responsibility. This is, of course, a familiar axiom of organization and management, but one which is too often ignored in government.

Since manpower planning is (or should be) an integral part of planning for economic development, the most logical place to fix responsibility for it is within the overall organization responsible for planning and directing the country's economic development program, if such a body exists. Since the recommendations of the top economic planning body are of such magnitude and of such importance to the country, they almost inevitably require the approval of the cabinet and the chief executive. Their decisions, of course, are binding upon all agencies of the government. Thus, a major division of the top planning body, carrying responsibility for manpower resources and planning would undoubtedly provide the best organizational provision for this vital function.

If no central high-level organization exists in the government to provide integrated planning for economic development, the best alternative would be an independent Office of Manpower Resources and Planning. It should be independent of the operational departments of government, making its recommendations to the chief executive and his cabinet for their final decision. There are sound reasons for suggesting its creation as an independent office at a high level in the government. No one of the regular departments of government normally encompasses the whole manpower field. If the OMRP responsibilities were lodged in any one of them, it would have no effective authority in dealing with other co-equal departments, either in securing needed action on manpower matters or in getting cooperation from the various governmental agencies handling individual development projects. In addition, there is the very real probability that its decisions would be colored by the interests of the department in which it happened to be lodged.

An Office of Manpower Resources and Planning, operating either as a major division of an overall economic planning commission or independently would tend to operate in much the same fashion. Its necessary functions and authority and the broad framework of its operation can be perceived fairly clearly in the light of the particular tasks which create the need for such a central body. Briefly, these would seem to be as follows:

1. In its formative stage the Office of Manpower Resources and Planning would, of necessity, concern itself with the three main steps outlined in Chapter B, "Establishing the Foundation for a Manpower Program."

a. Reviewing the economic development program and converting the projected development into manpower terms.

b. Identifying and evaluating existing governmental machinery for the administration of manpower programs and the collection of statistics essential to the planning and control of such programs.

c. Conducting or supervising the nation's initial manpower assessment in order to provide a starting point for planning purposes, pending creation of permanent machinery for providing the information essential for continuation of the planning process.

2. One of its first major planning efforts would be devoted to steps necessary for the establishment, expansion or improvement of the basic institutions which are essential for planning itself, as well as for carrying out an effective manpower program in the nation.

3. Once the basic statistical resources, administrative machinery and training institutions come into being the OMRP's modus operandi might be expected to follow along these general lines:

a. Determining the information and analyses to be supplied by the various agencies involved. Establishing the manpower demand-supply relationship in total and by significant occupational and industrial category for the broad span of the planning cycle (for example, 5-year goals). This would be built upon and supported by similar information established for shorter intervals within the broad span (e.g., each year). OMRP (with whatever information and advice it could obtain) would formulate specific plans with respect to the nature and extent of the action which must be taken to meet the manpower goals so determined.

b. The tentative plans would be sent to all affected agencies having manpower or economic development responsibilities for review, recommendations or suggestions for modification. These would be carefully considered by OMRP which would modify the original plans to reflect those recommendations which it accepted. (In this process it should be recognized that the facts disclosed by the manpower analyses may in some instances force modification of previously established economic development plans formulated without consideration of manpower aspects.) This process might be formalized by the creation of a Consultative Committee made up of the type of agencies indicated, providing opportunity for prior and post action consultation as well as stronger coordination in this area.

c. The final plan would be presented to the cabinet (or a special manpower committee of the cabinet, such as the Government of India established in September 1956) and the chief executive. It would then be considered, and decisions made approving the plan (if disapproved, the plan would, of course, be re-engineered to meet the objections raised). This would serve to ratify the plan and give it the status of an official decision of the government.

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d. Acting under this authority OMRP would assign specific responsibility to the operating, research and statistical agencies with respect to actions necessary to implement the plan.

e. OMRP would establish controls providing information on progress being made during the planned period (both in relation to the long- and the short-term phases).

f. OMRP would act as the coordinating agency and resolve conflicts in jurisdiction or timing which may arise as among the operating agencies involved in the manpower program.

g. Following the completion of each phase of the plan, OMRP would evaluate the degree of achievement and report its conclusions to the cabinet, including recommendations for future improvement, rectification of errors, or modification of operations based on the experience gained.

Other forms of organization than that outlined here may provide an equally useful framework for planning, directing and coordinating a manpower program. Much will depend on the circumstances in the country, and the location of the real sources of authority which exist there. This latter element is the key to any prospects which may exist for planning and carrying out a successful manpower program. Regardless of where this source of authority may be found, the plans will not be translated into an operating reality unless they have the explicit endorsement of those individuals who have the power to cause the government to act.

The elements in the process of planning and directing a manpower program have been set down here in their most skeletal form, including only the principal steps. It is safe to say, however, that regardless of the organizational forms which may be adopted in different countries for carrying out such a program, these essential elements in greater or lesser degree will be common to all of them. As time passes and more and more underdeveloped countries gain experience in manpower planning, it will be possible to establish a more detailed and specific body of information with respect to the particular forms of organization, techniques and methods for manpower planning and program direction which have proved most effective.

PART II

CHAPTER D

**COLLECTION, ANALYSIS AND ORGANIZATIONAL
PROVISIONS FOR MANPOWER STATISTICS
AND INFORMATION**

Part II—Chapter D

COLLECTION, ANALYSIS AND ORGANIZATIONAL PROVISIONS FOR MANPOWER STATISTICS AND INFORMATION

Introduction

Previous chapters have touched in a general way upon some of the different kinds of manpower information and statistics as they are related to a particular topic. It is the purpose of this chapter to provide a more comprehensive review of the principal kinds which have a major importance to the development and administration of a manpower program for economic development. This review is intended to provide sufficient detail to supply a working understanding of their sources and uses and typical organizational arrangements which are made for producing them.

Because one facet or another of labor force analysis runs through much of the material below, and because there often seems to be considerable confusion as to its meaning, a brief examination of what it involves might be helpful here as a frame of reference for the text of the chapter.

The labor force is defined to include everyone above a given minimum age who, during the specified time period (i.e., a given week during the survey), is engaged in earning or in attempting to earn pay or profit.

The labor force analysis procedures are aimed at what the person actually did (which provides the clearest information on current labor market attachment) not what he "ordinarily" or "usually" does (a "gainfully occupied" concept still in use in many countries throughout the world). The labor force is considered to consist of all civilians of a certain age or over (14 in the U.S.) who are not housewives or inmates of institutions. Of all such persons the labor force consists of two main groups --

Those who worked for pay or profit (or had a job) during the specified time period--one particular week, or who worked as unpaid family workers for 15 hours or more during this week.

Those who actively sought work during the same time period, i.e., they were competing in the labor market for available employment opportunities.

The remainder are then classified as not in the labor force.

Labor force analysis also includes the concept of "potential labor supply." This term is defined as the group in the population that could be drawn into the labor force providing suitable employment opportunities were available. The size of this group is generally estimated on the

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basis of the highest labor force participation rates in an area of a country selected because of advanced economic development. For example, if the country is developing and a particular city has an expanding industrial facility providing jobs with good hours and wages it has been found in the United States that in this city the labor force participation rate of women rises from the normal 30 to 35 percent of those 14 years or over to as high as 50 percent. These percentages are applied to another city where the economic program calls for the location of a new production facility or the expansion of the old ones. The estimates so derived will indicate whether the local labor force of women can staff the expansion or whether additional workers must be brought in entailing sizable problems of housing, schools, water, sewer, streets and other community facilities. Similar approaches can be used for younger or older men, whose labor force participation rates generally are not at optimum. Although it may seem strange to be worrying about the problems of expanding the labor supply in an underdeveloped country, this problem may occur quite often in particular areas impacted heavily by large projects, and may increase in incidence as development accelerates.

Naturally, the estimates are rough. These must be qualified by a knowledge of local habits and attitudes towards industrial work. However, as is obvious, a rough notion of labor force potential is very useful in planning economic expansion.

1. What Principal Kinds of Manpower Information Are Needed for Economic Development?

The concept of need, of course, is another way of asking what the uses of manpower information are in the process of developing an economic program, which in turn determine the kinds or categories of information required for those purposes. At the risk of some repetition, it may be helpful to recapitulate these uses briefly. Since the objective of economic development is the improvement and development of the country's citizens and their lot in life, it is essential to obtain usable information within a country with respect to:

The nature of the human resources in terms of number, age, sex, literacy, education, training or occupation, productive activity, geographic location and total population trends. This supplies the basic framework for development considerations.

The labor force status of the economically active portion of the population; i.e., the extent to which it is employed, unemployed or underemployed, not in the labor force temporarily, and in what sectors of the economy.

The demand for labor in total terms, by industry, by occupation and by location, i.e., in all significant labor market areas.

The degree of balance or imbalance which exists in the labor market between demand and supply (total, by occupation and by labor market area), both currently and estimated for specific future periods as determined by economic plans.

There are several major sources and methods by which these kinds of information are obtained.

a. Periodic Census

This familiar category of information is a tabulation of the total population by age, sex, labor force status, occupation (in broad terms), area and industrial attachment, and by urban, rural and district totals. These studies are costly and laborious. Hence, they are only made at fairly infrequent intervals, such as every ten years. While they are of great value in providing information on long-run trends and provide important and essential benchmarks, or frames of reference against which other data may be gauged and trends established (between censuses), the information is not frequent enough to be of practical use in meeting the current or shorter term problems. And change is particularly marked and rapid in developing economies.

In the United States the decennial census is supplemented by a sample census of the population and the labor force taken 5 years after each decennial census. The sample census not only provides more current information than the decennial one but, what is more important, it provides a means for correcting the monthly labor force report mentioned in item c below. This latter report is based on but a few thousand households and therefore must be corrected against benchmarks as often as possible.

b. Vital Statistics

This category concerns itself primarily with births and deaths. Information is derived from these data which is highly useful in calculating the depletion of the labor force due to deaths and additions to the labor force due to natural growth (but only where information is available about death rate in the age groups from birth to normal age of entry into the labor force). Annual rates are usually available at provincial or national headquarters.

In conjunction with the frame of reference provided by the census, the flow of vital statistics makes possible useful estimates as to any significant shifts in the composition of the population, year by year (age and sex) as well as rate of population growth. These demographic changes are of basic significance in long-range manpower planning. (For example, it is quite important, in the United States, to know that there will be a period of very "lean years" among adult males in the labor force until about 1965 owing to the sharply curtailed birth rates during the economic depression in the 1930's.)

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Particularly careful manpower planning is necessary to meet future requirements in the "long-training-lead-time" jobs (professional, managerial, engineering, scientific and highly skilled manual workers) which are in such short supply and so costly to produce. It is extremely important in these plans to calculate the anticipated annual losses from the labor force in these occupations for reasons of death and retirement. In many former Colonial possessions an additional and very large element in the replacement needs is the foreign or expatriated workers who have formerly held the majority of all the jobs requiring higher skill and education. These people must be replaced in addition to the net increase in the requirements brought about by economic expansion. By using vital statistics data, the labor force survey data (c below) and the base provided by the last census, it is possible to make useful and realistic estimates of these prospective losses for planning purposes. (Degree of replacement of expatriates will be a matter of government policy.)

The replacement problem is larger than is often appreciated, particularly in the beginning phases of a development program when the high-level skilled occupations are heavily weighted with persons in upper age brackets. In one "western" country, for example, even with no abnormal weighting, the replacement factor for just a 5-year period amounted to almost 40% of the currently employed males in the 55 years (plus) bracket. In the 35- to 54-year bracket it was about 5% in addition. Putting the two brackets together, the manpower planners realized with a shock that they would have to educate and train a number equal to about 45% of the total high-level skilled group in just one major industrial sector simply to replace losses from death or retirement in the existing cadre of workers in only five years. In fact in any particular industrial segment in an underdeveloped country (within the physical expansion which is possible in a 5-year period), the number which need to be trained as replacements for the highly skilled workers thus lost may well be larger than the number needed for the expansion itself.

c. Unemployment, Underemployment and Employment Reports

(1) Unemployment: The Periodic Labor Force Report (Monthly or Quarterly)

Manpower and economic planning require data which possess timeliness and currency if they are to be of practical use. These characteristics are not present in census information. In a fluctuating and changing economy the government needs sensitive barometers for gauging the broad national movements taking place as a result of policy application and other influences. Since a main objective of the development program is to decrease unemployment and increase employment, the movement of these factors is of prime interest to the "developers."

In order to create such a barometer, which could provide frequent "readings," the sample labor force report was devised, and is used in one form or another in the U.S.A. and several other countries. By a relatively small number of interviews in a carefully controlled sample of households it is possible, in the U.S.A. for example, to produce each 30 days a "Monthly Labor Force Report." (Published each month in the U.S. Department of Labor MONTHLY LABOR REVIEW, Table A-1.)

This report's greatest value, in a mature industrial economy, is that it provides a monthly measure of unemployment. In a democracy this is very important because of pressures for unemployment insurance, relief, and public works programs that unavoidably develop when unemployment is high.

In an underdeveloped country the report would be still more useful because it indicates trends of employment. This is the key labor market information for economic planning. If industrial employment is rising it indicates that the program is moving forward. The rate of rise of employment is also a rough measure of whether or not progress is on schedule.

By contrast in an underdeveloped country there is less unemployment per se, as defined in mature industrial economies. Rather the problem is that of underemployment (see (2) below). The underemployed at times include significant proportions of the labor force whose contribution to society is very small and personal income and standard of living very low. In fact, as the economy of the underdeveloped country expands, both employment and unemployment may rise as the underemployed become work seekers for the better industrial jobs, abandoning their previous unremunerative pursuits.

This kind of sample survey provides the basic current source of data covering the whole labor force which can be made available for a reasonable cost. It has definite limitations, and owing to technical problems incident to the measurement of "underemployment" (discussed below) it cannot be classed as an exact system of measurement when applied in underdeveloped countries. It is generally viewed, however, as a valuable tool in the collection and interpretation of current manpower information.

(2) Underemployment Measurement

The high incidence of underemployment in underdeveloped countries (particularly the densely populated ones) creates a peculiar problem when transferring the monthly (or quarterly) labor force survey techniques to an underdeveloped economy. In developed countries a worker generally tends to be employed full time (e.g., 40 hours a week). In the weeks he is not working full time (for voluntary or involuntary reasons) he tends not to work at all. Hence, such an individual can be designated meaningfully as "working" or "not working." His answer to the survey interviewer is usually unequivocal.

This is not the case in densely populated countries where the "back-up" of large numbers of workers on an insufficient amount of land produces huge numbers of people nominally "employed" or "working" but actually contributing very little in the way of production. In many cases there has been a spill-over of such people into the urban areas where they put in time as public porters, vendors of one kind or other, selling a few oranges or razor blades, etc. The great majority of all of these could be withdrawn from their "employment" with no noticeable effect on the gross national product. Nevertheless, almost all of them would tend to answer in a labor force survey that they were "working." This phenomenon has appeared in the census studies in a number of underdeveloped countries, particularly in Asia, where the results (based on the answers to this question) often purport to show about the same unemployment figure, or a lower one, than that which obtains in economically advanced countries.

In order to cope with this problem some countries have added a question, asking the workers the number of hours he worked in the survey week. It was believed that the anticipated low number of hours reported would provide a clue to the amount and degree of underemployment. This has not worked out. Because they eke such poor returns for their submarginal contributions, most such individuals put little or no value on their time and characteristically spend long hours attempting to increase their incomes by selling a few more oranges or picking up a few more odd jobs. Such workers actually tend to report longer hours than those on bona fide full-time employment.

The best solution has been developed in Puerto Rico, and the modification made in its Quarterly Labor Force

Survey would appear to have general applicability to all densely populated, underdeveloped countries. Manpower planners in Puerto Rico have been able to split off the underemployed from the employed by asking questions which identify three groups of persons as underemployed.

- (a) Subsistence Farmers, i.e., those farmers who consume most of their own output.
- (b) Wage and Salary Workers who worked less than 35 hours in the measured week of the survey, although they wanted more hours of work.
- (c) Self-employed persons (except subsistence farmers), and unpaid family workers who looked for work in the survey week.

Reasonably accurate identification of the volume of the underemployed is of considerable importance to an underdeveloped country's manpower plans. This group of the population is usually far larger than the reported number of "unemployed." It represents a fair proportion of the potential labor supply for development purposes and is an essential factor in plotting the dimensions of the development program. Regular labor force reports highlighting this category can be an important "control" for the government in gauging the effect of its programs in reducing the backlog of unemployed and underemployed once the development program is under way.

(3) Employment Reports

As pointed out in (1)(above), the labor force surveys do yield a broad or gross employment total as a by-product of their primary focus which is unemployment. It is obtained easily in the survey of households at little extra cost and is of some interest because it includes, in addition to wage and salary workers, all self-employed and unpaid family workers. Its overall utility, however, is quite limited because it provides no industrial detail.

Most developed countries, however, find it necessary to obtain more detailed and meaningful employment reports on a monthly or quarterly basis. These reports are obtained from a representative sample of all employing establishments by industry and provide detailed national totals. In the U.S. the Bureau of Labor Statistics provides a monthly report of all wage and

salary employees, arranged by 8 major industry categories and some 200 sub-categories (Table A-2, MONTHLY LABOR REVIEW). It also breaks out the number of production and nonsupervisory workers for these industries (Table A-3, MONTHLY LABOR REVIEW). From these reports it is possible for the government and other interested groups to observe with great accuracy the impact of development plans, or the play of economic forces on employment levels, industry by industry, in the most specific terms.

For reasons which do not require treatment here, the BLS Employment Series does not obtain information from employers as to the future near-term demand for labor by occupational category. This information is secured by the Employment Service in its Area Labor Market Analysis program.

(4) Reports from Educational and Training Institutions

In a growing economy, some of the earliest labor shortages would be in the key professional and managerial groups, as well as among scientists and technicians. For this reason the output of educational and training institutions is one of the most valuable reports for manpower purposes. In the United States the Office of Education provides detailed annual reports by specialty (i.e., electrical engineer, mechanical engineer) of the number of graduates from universities and colleges and the number in each class (freshman, sophomore, junior and senior). By looking over the relationship between the size of the freshman class and the number who graduated, projections can be made of the number of engineers, scientists and other specialists that should become available 4 years hence. If the schools offer graduate work, simple ratios can be developed to forecast production of Ph.D.s and M.A.s. In most underdeveloped countries special reports showing students returning from education abroad will supplement this kind of information.

A comparison of these figures with the employer's demand figures (E.S. Area and Industry Reports) will indicate whether the nation will have an adequate supply of managerial and professional people or whether it will face a continuing deficit.

d. Area Labor Market Analysis

(1) General

Except for the census and vital statistics, all of the other principal manpower reports or categories of data

have utility primarily as national totals. Essential as these are in giving government the knowledge it must have in planning and guiding the manpower elements of the economic development program, they do not provide the needed local labor market information. The local labor market areas are, after all, the points in the economy where the broad plans and programs are translated into reality. Local information therefore, is indispensable in a geographically large country with major industrial concentrations by area.

Area labor market analysis seeks to establish, within the geographic limits of a labor market area, essentially the same kinds of information about that particular area that the previously discussed analyses and information established for the nation. In addition, area labor market analysis brings into sharper focus and in more meaningful terms (for action) the current imbalances between demand and supply (in total and by significant occupations), both as they currently exist and in regard to the changes which are expected to occur. In the local analyses the occupational information can be quite exact. This precision ordinarily does not exist in the national totals. For example, census categories such as "craftsmen, foremen and kindred workers" will not meet the needs of the labor market at its operating level, i.e., the local area where specific jobs must be filled by specific numbers of workers with specific skills and training.

(2) A More Detailed Description

A more comprehensive description of area labor market analysis may be useful in discussing this vital tool with host country officials.

Area labor market analysis deals with the evaluation and measurement of the economic and social forces as they relate to the employment process in a local labor market. Area analysis concerns itself with the quantitative and qualitative aspects of labor demand in all industries and occupations within the geographic boundaries of a local area. It also considers the number and characteristics of the total labor supply and evaluates the factors which affect the demand-supply relationships in the area.

Area analysis is generally based on two fundamental principles. The first recognizes that most workers usually are not completely geographically mobile;

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their freedom of choice in accepting employment opportunities without undue hardship or dislocation of customary social habits or living standards is usually limited to a reasonable commuting distance. The second and subordinate principle acknowledges the practice of employers to recruit most workers from within a reasonable commuting distance of the place of employment. However, there are certain instances where these principles do not fully apply, as for example, in scientific, managerial and many other professional occupations, large-scale construction projects, and in agricultural activities where it is necessary to use migratory or foreign workers.

Because of the intimate relationships of the numerous variables in a labor market, the measurement and evaluation of any one factor cannot be made without full consideration of the other forces which have a bearing on it. Thus, for example, the number and characteristics of workers who will come into the labor market in search of employment depends on the extent and type of employment opportunities in the area and on such considerations as the period of the year when nonworkers are free to enter the labor force (school graduation or summer vacation), the extent to which potential labor reserves have already been utilized, the extent of shifting between agricultural and non-agricultural employment, and the availability of adequate community facilities.

An analysis of total area labor demand and supply must evaluate employer specifications regarding wages, hours of work, age, sex, skill, experience, and union affiliation. Other considerations include competing labor demands, and the location of plants in relation to transportation and community facilities. The size and characteristics of the labor force and its two major components, employed and unemployed, in addition to being important indicators of current economic conditions in the area are important for an understanding of other labor market trends. For example, the size and characteristics of the labor force in relation to total area population and its characteristics indicate the extent to which additional workers can be recruited to expand the labor supply. This is vital in determining location and rate of expansion of new plants. An evaluation of area employment trends indicates the changing character of the area labor market outlook data obtained from employers and other sources.

In operating practice, Area Labor Market Analysis involves two separate types of analysis and reports:

(a) Basic Analysis and Report

The basic analysis is designed to provide a comprehensive picture of the human resources of the area, and to show how they are deployed and what geographical economic and social factors influence or characterize their activities in the labor market. This analysis needs to be made only at fairly infrequent intervals (once a year should be enough). Its purpose is to provide a comprehensive frame of reference to serve both as a starting point and eventually as a background for continuing studies of the current and future relationship between the supply and demand for labor. It serves the purpose too of enabling changes that are occurring in the market to be placed in proper perspective with the whole population and labor force.

(b) Continuing Analysis and Reports

The purpose of the continuing analyses is to keep under detailed review the current and short-term relationships between the demand and supply for labor by area, industry and occupation, to identify the factors that are causing variations and lack of balance and to draw conclusions as to the courses of action that seem desirable. It may be regarded as a technique by which long-term plans for fuller employment can be trimmed to local and short-term variations in economic conditions.

The frequency with which these continuing analyses are made depends upon how effectively they can be acted upon in the period between reports, and whether significant changes calling for action are likely to occur in these periods. The problems associated with the collection, collation and analysis of data will also influence the frequency. A desirable objective is an analysis of the current and short-term situation in each area at least once a quarter.

e. Industry and Occupational Labor Market Analysis and Reports

Both of these types of analysis are of great value in manpower planning and program administration. By singling out a specific key industry or a specific key occupation, or related groups of occupations for

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analysis on a national or regional scale, the nature and dimensions of the problem can be perceived as in no other way. Meaningful and well directed action can then be taken when analysis indicates that trouble is developing or that planned rates of progress are not materializing. Most, if not all, of the essential information for these two special type of analyses, is derived from the various reports previously discussed as well as those touched upon below. A brief description is provided for reference purposes, of both industry and occupational labor market analysis.

- (1) Industry Labor Market Analysis deals with labor market factors which affect a given industry or groups of similar industries. Such an analysis can be prepared on an area, State, or regional basis or for the Nation as a whole. Generally, an analysis of an industry will deal with (1) current employment and past trends; (2) required future employment and expected manpower recruiting problems, if any; (3) labor turnover; (4) working conditions; (5) hours of work; (6) earnings; (7) wage rates; (8) technological development, and (9) changes in skills needed.

Analysis of past trends of employment for the industry should compare and analyze current levels with those of recent years and with significant benchmarks; should give reasons for changes in employment covering such items as changes in demand for products (domestic consumption or exports), financial difficulties, government regulations, industrial disputes, shortages of labor, materials, etc. Geographic distribution of employment and by size of establishment also provides meaningful data and helps to identify problem areas for the industry. Attention must also be given to the sources from which workers are recruited to accomplish employment expansion and to indicate the adequacy of supply to meet the present and future needs.

Evaluation of short- and long-range future recruitment problems for the industry is the focus of industry labor market analysis. The volume of required future employment in relation to current and past employment levels must be indicated and reasons for expected changes must be included in the analysis. If employment in the industry is expanding, the sources of labor supply and the skills of the workers needed, their availability, the timing, the hiring specifications, and the hiring channels are all significant to the understanding of employment conditions in an industry and for the development of manpower programs where needed. Similarly, if the industry expects reduction in employment, information is needed on how such a change will be accomplished

(by layoff or normal turnover), the timing, the occupations to be affected, and possible employment opportunities for laid-off workers.

Information on and analysis of labor turnover for an industry provide a management tool for employment service operations, especially at the local level, as well as necessary data for economic analysis. Turnover is costly and represents a wastage of national resources. Abnormal turnover rates (accessions or separations) can be used to identify plants which have employment problems. New hire data, particularly, are essential to the management and supervision of the local office.

Analysis of an industry should also contain evaluation of in-plant and community conditions that affect retirement or retention of workers. A comparison of data on hours of work, wage rates and earnings by industry provides information on the industry's competitive position for workers in the labor market.

- (2) Occupational Labor Market Analysis concerns itself with factors which affect demand-supply relationships in a particular occupation or group of closely related occupations. It evaluates the future occupational job opportunities in relation to training rate. It includes a study of the relation between the number and characteristics of anticipated labor supply and occupational labor demand expressed in terms of job requirements, employer specifications, hiring and promotional opportunities, and legal restrictions affecting employment. Basic to occupational labor market information is a clear definition of the occupations or occupational groups to be studied. Depending upon the occupations studied and the need for the information, occupational labor market information can be developed for an area, a State, a region, or for the Nation as a whole.

Since most workers seek employment in specific occupations and employers usually hire workers with specific skills, occupational labor market information is of great importance to understanding of the functioning of the labor market. The need for occupational labor market information is widespread. It is needed by the Employment Service for effective local office operations; by training officials to plan suitable programs; by employers to assure themselves of an adequate workforce with appropriate skills; and by workers to make

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appropriate vocational choices. To meet these needs, an appraisal of the occupational labor market (locally and nationally) is necessary.

We live in a dynamic society with some industries expanding and others declining. In any one area, the occupational needs may change markedly as old industries decline and new activities develop. Depending upon the needs, the development of occupational labor market information may take a variety of forms. Several of these are outlined below. Within each of these, variations of approach are possible, and some examples of these variations are noted.

Appraisal of the local occupational labor market will yield information by occupation on manpower requirements and resources in specific occupations, both currently and estimated for specific future periods. One particular application of this kind of Occupational Labor Market Analysis was discussed in Chapter B, section 3 (Initial Manpower Assessment). Studies along these lines in the United States are often referred to as "Area Skill Surveys."

Another important type of research in the field of occupational labor market analysis involves the development of occupational guides. Such guides may cover individual occupations or groups of closely related occupations, occupations in important industries or they may encompass a number of occupations of interest to particular groups, such as youth, older workers, and agricultural workers. They give information on topics such as (1) description of the job; (2) significance of the occupation in the community, the State, or the Nation; (3) current and expected employment opportunities; (4) training and experience requirements; (5) availability of training facilities; (6) methods of entry and opportunities for advancement; (7) working conditions; (8) hours; and (9) earnings.

The selection of occupations or occupational groups for which information is needed is governed generally by the following factors: (1) importance of the occupation -- there are always job opportunities resulting from turnover, deaths and retirements in large occupations; (2) rapidly growing occupations; (3) current or expected shortage situation; and (4) worker interests and needs.

There are many occupations which are not commonly known and are not readily identifiable outside of an industry setting. In such cases, the analysis may cover the entire industry. For example, there may be much interest

in jobs in plastics industries, or in electronics. In addition, in some provinces or States, there may be dominant industries--such as textiles or mining. These industries usually provide a great number and variety of jobs. The description of such jobs and the analysis of employment opportunities, in such cases, can best be handled by an industry approach.

2. Supplementary Kinds of Manpower Information

There are a number of other continuing kinds of data and reports which are useful for manpower planning and administration. While they do not have the central importance for this purpose as those discussed in section 1, above, they are none-the-less of interest and significance to those interested in this problem.

Before discussing indices directly related to manpower, it is worth noting that in the United States one of the most useful economic indices is the Federal Reserve Board's index of industrial productions, issued monthly. It may be impractical to duplicate such an index in an underdeveloped country but a useful index could be built up, either by using the gross units of production of basic industry or the money value of this production. Either figure should be reduced to a percentage of a base year which would allow economic planners ready information on trends. With experience, seasonal adjustments can be made on an index which shows at a glance whether industrial production is gaining at the rate expected.

The more common kinds of data are:

a. Consumers Price Index

Inflation is an ever present hazard in a developing economy. To the extent it raises consumer prices at more rapid rates than wages increase worker motivation suffers, labor supply from rural areas become difficult to attract, production suffers and the developing economy is retarded in its progress. This index furnishes the government with a fairly sensitive indicator, which when considered in relation to data on hours, wages and total earnings, makes it possible to initiate remedial action in time to be effective.

b. Reports on Average Hourly Earnings, Hours Worked Per Week and Gross Weekly Earnings

These are usually confined to production workers (nonsupervisory) in manufacturing industries. They reveal movements and trends in a key industrial section of the economy, and particularly differentials among individual segments which may have an effect on movement of labor, recruitment, et al.

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c. Reports on Absenteeism

These can be important indicators in developing economies where the industrial workforce, recently recruited from the villages and farms, has not yet made a full commitment to an industrial, urban way of life. Progressive reductions in this rate is significant in measuring advances toward this objective. Comparative figures among different manufacturing industries may also suggest abnormal problems in working conditions, safety, wages, et al.

d. Reports on Work Stoppages Resulting from Labor-Management Disputes

Reports of this kind usually provide information on the number of stoppages, the number of workers involved and the total man days of idle time resulting therefrom. Its value as a rough indicator of the state of the management-labor climate is apparent, and it serves to measure the severity of the disruptions caused by disputes.

e. Social Security Records

As Social Security programs come into being (and many underdeveloped countries have some type or other), they can yield very useful reports, providing data for bench mark and employment trend purposes.

3. Organizational Provisions for Manpower Statistics and Information

Allocation of responsibility within the government structure for the production of the various items will of course vary rather widely among countries depending on a number of factors which need not be explored here. However, advice may be sought by host country officials in this point, particularly at the time of initiation of a program, or during the course of a governmental reorganization.

In most underdeveloped countries the choice will be relatively simple because there are very few existing institutions for these purposes. Quite typically there is just one agency, a Central Statistical Agency. Such a central organization may be assigned all of the various kinds of manpower statistics and information (beginning with the census) described previously in this chapter with one notable exception. The field of area labor market analysis and reports (1, d above) is far better handled by a National Employment Service than by a Central Statistical Agency. Much of the information essential to these key reports accrues to the local employment offices (located in the labor market areas) through their operating and organizing functions in the local markets and is quite difficult to obtain in any other way. It is possible to secure these reports by other means, but if a National Employment Service can be justified (see Chapter E) in terms of the size and complexity of the country's labor market areas organizational responsibility for this kind of reports should by all means

be allocated to it. This applies also to the Industry and Occupational Labor Market Analysis Reports discussed under (1, e above).

On the other hand, the National Employment Service should never be assigned responsibility for conducting Labor Force Surveys if any other alternative is available. It is rarely, if ever, equipped to handle this complex and highly specialized statistical operation.

Where some choices exist, a good grouping of functions is as follows:

<u>Census and labor force surveys</u>	A Central Statistical Agency or Census Bureau
<u>Area Labor Market Analysis; Occupational and Industrial Labor Market Information</u>	The National Employment Service
<u>Employment Reports; Consumers Price Index</u>	} A Bureau of Labor Statistics in a Labor Department or a Labor-Social Security Ministry
<u>Average Hourly Earnings, Hours Worked Per Week and Gross Weekly Earnings</u>	
<u>Absenteeism Reports</u>	
<u>Work Stoppage Reports</u>	
<u>Output of Educational and Training Institutions</u>	Ministry of Education (or whatever Central Agency provides significant administrative funds for these educational activities)
<u>Vital Statistics</u>	Collected locally by city and province, or State governments. Nationally, by a Central Statistical Agency or a Health and Welfare Minis- try.
<u>Index of Industrial Production</u>	Central Bank

PART II

CHAPTER E

**THE ROLE OF A NATIONAL EMPLOYMENT SERVICE
IN THE
MANPOWER PHASES OF ECONOMIC DEVELOPMENT**

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THE ROLE OF A NATIONAL EMPLOYMENT SERVICE IN THE MANPOWER PHASES OF ECONOMIC DEVELOPMENT

1. Summary

Previous chapters have outlined the initial steps involved in preparing a foundation for a manpower program, the establishment of a top level planning organization and bringing into being the manpower statistics and information essential to manpower planning and program direction.

Manpower statistics, labor market information and manpower planning are all vital elements in a manpower program. However, they would have only very limited value standing alone. Manpower programs cannot be carried out in a vacuum. There must be machinery to get things done, to carry out the plans and to accomplish the desired results. A National Employment Service fills a substantial proportion of these needs. It, together with the education and training institutions, discussed in the next chapter, "F", constitute the points at which manpower planning is translated into constructive action. Its important operating functions, considered in combination with its collateral and extensive occupational and labor market research contributions endow the National Employment Service with unique importance in the administration of a manpower program for economic development.

Once established and brought to an acceptable level of operating efficiency, a National Employment Service provides a permanent administrative organization, with operating offices in every important community in the country. These local offices (as well as the headquarters office) are staffed with personnel thoroughly trained in all phases of occupational technology, and equipped with a detailed and expert knowledge of the labor markets in which they operate. The offices act upon each of the area labor markets in which they are located, organizing these markets by bringing employers and jobseekers together, identifying imbalances between labor supply and demand and initiating actions to bring them into balance, both in quantity and in quality.

In addition to effecting the internal organization to the area labor markets, the employment service has the capacity and the facilities for moving workers across the country from localities of labor surplus to areas of labor demand. It can be used to manage and direct the movement of migratory agricultural workers at the right time and in the right numbers. Recruitment, selection and placement of workers for a wide variety of public works and other public enterprises is a common task of the employment service in many countries. It is a key control agency in the event of defense mobilization and provides a foundation for future

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programs of social security, such as unemployment insurance.

The occupational research program of the National Employment Service can be the means for introducing the principal elements of scientific personnel management into the nation's productive enterprises, private and public. Through its employment counseling services it enables labor market entrants and others to choose the occupations most appropriate to their skills, abilities and aptitudes, thus appreciably improving the utilization and effectiveness of the labor supply.

Because its office network covers the major employment centers of the nation, the employment service is capable of making a wide variety of special studies on particular manpower matters of interest to the Office of Manpower Resources and Planning or to the Economic Development Agency. These studies are in addition to producing the regular area analyses and occupational and industrial labor market information reports.

2. A More Detailed Review of the Functions of a National Employment Service

Mission and embassy officials who have not had a close familiarity with the manpower field may find a more detailed description of the five principal functions of an employment service useful in discussions with host country officials.

a. Placement

This is probably the best known and most familiar of the functions of an employment service. It is more or less the keystone, and the effectiveness of other functions and services performed depend to a substantial degree upon the technical strength of the placement function and upon the extent to which it is accepted and used by employers and workers. Described in broad terms, the placement function sounds relatively simple. It consists of forming a central exchange in the labor market through which employers can obtain (from all of the labor available at any point in time) the particular workers best qualified to meet their job requirements. Conversely, it provides the same central facility through which workers may have access to and be considered for all jobs for which they may be qualified. In short, it brings together the right man for the right job, and provides for an orderly organization of the local and national labor markets. It not only effects great savings in time and effort to both employer and worker, but effects the even greater savings which derive from the proper matching of man and job and eliminates or reduces the serious economic loss which occurs when the worker takes employment for which he has no aptitude or when the employer engages workers who lack the abilities to carry out his work satisfactorily.

While the essential description of this function sounds rather uncomplicated, the actual provision for an effective, widely accepted placement service is a complex and difficult administrative achievement. It involves among other things:

- (1) The development and application of a precise employment interviewing technique for determining the occupational qualifications and aptitudes of work seekers and the exact job performance requirements of employers requesting workers.
- (2) Development within the employment service organization of expert knowledge of all of the occupations and industrial processes which are found in the economy (to aid in this process the offices must be organized to facilitate this specialization, and there must be undertaken the development and use of a wide body of occupational reference material, job descriptions, occupational classifications and codes, oral trade tests, aptitude tests and proficiency tests).
- (3) Maintenance of close contact and good working relationships with management and hiring officials in all employing establishments of any significance, for the purpose of achieving an understanding of their employment problems and to bring them to use the facilities of the employment service in solving these problems.
- (4) Maintenance of a similar contact and relationship with leaders of workers' organizations to assure their understanding of the service and to encourage the use of the service by workers.
- (5) Development of special apparatus and methods for the clearance or transfer of workers from one city or section of the country to another as dictated by the rapidly changing needs of industry and agriculture brought about by a program of economic development.
- (6) The administrative tasks of selecting the proper personnel to carry out this work, training it to perform expertly, developing internal procedure and organization to achieve results most effectively and economically and providing proper supervision and direction of such staff located in widely separated offices throughout the nation.

b. Occupational Analysis

This function is primarily one of research, and its purpose is to develop the wide range of occupational tools and reference materials which are used by the employment service itself in its placement and employment counseling functions, and which are furnished by the employment service to industry for its use in scientific personnel management and improved utilization of its manpower. These products are also furnished to the schools and other educational institutions in the

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vocational guidance and occupational preparation functions which are performed therein.

The occupational analysis function has two major phases:

- (1) Job Analysis, which is the scientific study of occupations in the economy, preparing a rational classification and coding structure for these occupations which make clear their relationship and industrial attachments, and publishing such information in a form most useable for all consumers of it. This phase also includes the preparation of explanatory and instructional material with respect to the techniques of job analysis itself and its many uses in industrial and personnel management.
- (2) Worker Analysis, which is the scientific study of worker characteristics, abilities, and aptitudes, involves the preparation of methods and tools for their assessment. Characteristic products of these studies are oral trade tests, interviewing aids, aptitude and proficiency tests.

c. Industrial Services

This function is primarily one of aiding employers in identifying hiring and employment problems within the plant and training or familiarizing the plant management in the appropriate techniques which will aid in solving such problems, thus advancing the firm's ability to utilize its workforce more effectively. In short, it involves "exporting" to other sectors of the economy the fruits of the employment service's own research, techniques and methods. In performing this function the employment service may utilize any or all of the techniques developed by its occupational analysis and placement programs as well as pertinent data from its labor market information program. Modern personnel or manpower management pretty much rests on these fundamental techniques, particularly those of job analysis. All of the following activities are dependent to a great degree upon it:

- (1) job classification
- (2) worker selection
- (3) job training
- (4) organization and simplification of work
- (5) lab relations (is heavily dependent upon clear-cut definitions of duties and responsibilities as the basis for rational negotiations and collective bargaining)
- (6) personnel efficiency rating

- (7) development of health and safety programs
- (8) job evaluation and rate setting
- d. Labor Market Information Program (See also Chapter D, Section 1.)

The employment service develops techniques for collection and analysis of employment information (employment levels in total and by industry category, employment trends and forecasts) for all of the significant labor market areas in the country. It also prepares nationwide summaries of such information. This information is gathered, analyzed and published on a regular periodic basis. The service also makes longer range studies of trends in employment (growth or decline) and other characteristics of selected industries and occupations which are of importance in the economy. All of this information is used by the employment service itself in the planning and conduct of its various activities, and it is also provided to other agencies of government for their use in economic planning and action (for example, to aid in the location of industries or public works). It is provided to schools and other educational institutions where it is used to stimulate or modify courses of training or in vocational guidance conducted by the schools. Private employers and their trade associations and union organizations also are furnished and use this type of information.

The employment service specializes in area analysis, industry and occupational labor market information, all of which are vital to manpower planning, and the direction of manpower programs in economic development. It normally depends on other agencies of the government for periodic labor force data giving national totals on unemployment and employment.

e. Employment Counseling

This function involves the development of techniques and methods (and the collection of a substantial body of organized vocational information) which are designed to assist individuals in arriving at a vocational choice, or in solving other problems which affect the individual's ability to undertake or hold employment (such as the presence of a physical handicap). For its effective performance this function relies heavily upon the basic interviewing technique discussed under "Placement," the occupational information and reference produced through job and worker analysis and the information with respect to the location and number of job opportunities which result from an active placement program and a sound labor market information.

The employment counseling services are provided directly to economically active persons who require such help, and to young persons entering the labor market, by specialized staff in the field offices of the employment service. In addition, and of equal importance, the employment service makes its techniques, tests and organized occupational information available to the nation's schools and where necessary trains schools personnel in their use. Two purposes are served through this. It enables the vocational counseling process to begin at its most

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effective time, some years before school-leaving age. In addition, the advice and information provided to the schools with regard to current and prospective vocational needs in industry is a powerful influence in shaping the nature and content of the curricula and training offered through the schools, tending to make it more realistic and relating it closely to the needs of the developing national economy.

3. Criteria for the Establishment of a National Employment Service

The employment service came into being as a social institution, in response to certain needs. The first and major need was that for organizing some of the complex and dynamic industrial labor markets in the more economically advanced countries. The establishing of a central exchange in the local labor markets and the provision of an active placement service was the response to this need. As the national employment service matured, corollary and highly useful related activities or services were added to strengthen and make more effective the basic function of placement and to serve other economic needs as well. As might be expected, the employment services were the pioneers in the development of occupational analysis and the systematic classification of jobs. In the same way labor market analyses and information services emerged, and for much the same reasons, as did the placement-related services of employment counseling and aptitude testing.

The specific point to this for underdeveloped countries is the element of need for these services. The existence of needs should be determined and the degree or dimensions of these needs should be gauged carefully. Not every underdeveloped country needs a national employment service and all of the functions which it performs. This is a relatively sophisticated and expensive institution which a poor country can ill afford unless it needs these services badly.

Specific and detailed criteria to aid in determining the need for a national employment service in a particular country are contained in A.I.D.'s Manual on "The Establishment of National Employment Services in Developing Countries" (1963).

These criteria need not be repeated here, except to indicate their general nature. They are predicated on the fact that needs for an employment service arise as a consequence of the growth of urban areas and the complexity and "velocity" (or degree or activity) of the local and national labor markets. Thus, a country whose economy has a certain degree of urbanization, is undergoing substantial economic development, and has a reasonable capacity for administration would need this essential machinery of government. Conversely, a country with little significant urbanization, simple, uncomplicated labor markets, and a static economy would not need an employment service and should not waste its energy and resources in trying to set one up. Nor should such a country be encouraged to do so by U.S. technical assistance missions.

The existence of a need for a placement service is the prime determinant as to whether to set up the costly network of local employment service offices throughout a country. From time to time a country which does not meet the criteria for establishing an employment service as such, may have a legitimate, if limited, need for one or the other of the corollary services. Such services or functions as occupational analysis may have utility for improved management in the few private or government enterprises. Some labor market analysis and information may be desired for various purposes. These auxiliary services can and should be provided in such cases by other means than through the opening of costly local, full-functioning placement offices. Specialized occupational research activity can be provided much more economically in these cases by establishing the function in an existing institution of government, preferably one responsible for the administration of governmental industrial enterprises such as transportation, utilities, or others. Labor market analysis and information activity can be provided more economically in such cases by establishing the function in the Central Statistical Agency when one exists, or in the Census. The point should be made, however, that when the country's economy is neither complex enough nor dynamic enough to justify a system of permanent local offices for placement purposes it will only seldom have urgent need for these related services.

PART II

CHAPTER F

**MANPOWER TRAINING: PRODUCING THE SKILLS
NEEDED FOR ECONOMIC DEVELOPMENT**

Part II—Chapter F

MANPOWER TRAINING: PRODUCING THE SKILLS NEEDED FOR ECONOMIC DEVELOPMENT

After present and future needs for manpower for economic development have been determined both as to kind and amount, and after steps have been taken to create the planning, statistical and operating agencies essential to the administration of a manpower program, a most formidable step still remains. This is, of course, the process of creating or bringing into being the particular skills needed by the developing economy.

It is the purpose of this chapter to examine the major problems which exist in this area, consider steps which offer promise of their solution and to explore the kinds of administrative apparatus which might aid in the accomplishment of these objectives.

1. How Skills Are Created or Acquired in the USA

In order to provide a framework for dealing with this subject, it may be helpful to look at the way in which skills are acquired in our own country. With this as a general frame of reference, the problem of the underdeveloped country may then be examined for similarities and differences. From this comparison the logical direction of the underdeveloped countries' efforts may be perceived more clearly.

a. Skill Categories

At the risk of over-simplification, it will be useful to divide the spectrum of skills into three broad categories.

(1) Professional, Scientific, Engineering and Managerial

This group includes such occupations as doctors, physicians, metallurgists, chemists, biologists, educators, mechanical, civil and electrical engineers, administrators of substantial government, educational or private enterprises or major subsections of same.

All of these skills require substantial educational preparation (usually university graduation as a minimum) after high school prior to entry on the job.

(2) Technicians

This fast growing groups is of relatively recent origin. (Except for the traditional occupations of draftsmen and surveyors they represent new occupational groupings

such as: engineering aides, testing technicians, dental, medical and biological technicians, radio operators and communications technicians, et al). In general they may be distinguished from the skilled group, below, in that the functions of most technicians are related to and directly support the work of professional personnel. They are also more likely to be trained in educational institutions than are the more traditional skilled workers.

(3) Skilled Occupations ("Manual")

This group includes such familiar occupations as carpenters, brick masons, machinists, die makers, photo engravers, loom fixers, molders, boilermakers and many, many others. In general, they require as much "skill" as the technicians who are set apart, or differentiated from the skilled occupations largely on the basis of their work relationship to professionals as indicated above. Moreover, the same criteria can be used to identify both groups and to distinguish them broadly from unskilled or only semiskilled workers. These are three common criteria:

- (a) First the individual must possess the distinctive abilities required for a specific occupation. (These distinctive abilities are above and beyond those acquired in the process of growing up, such as reading, writing, driving a car or tractor, or using a saw.)
- (b) Second, the skilled worker or technician must achieve a particular level of competence. Every skilled occupation has its own standards of what tasks the worker must be able to master in a given time, and the quality of acceptable work.
- (c) The skilled worker or technician must have had training to acquire his distinctive abilities and competence. No one becomes a skilled worker without some special effort.

Few skilled or technical occupations can be learned through either formal or informal methods, in less than two years, and for most of these occupations the training is longer.

In rough quantitative terms the skilled segment of our civilian labor force in the USA consists of 8 to 9 million workers and about one-half million technicians

(i.e., total skilled and technicians comprise approximately 14% of the total civilian labor force).

b. Acquisition of Skills in the USA

As indicated above, individuals in the professional, scientific, engineering and administrative category acquire their skills, almost exclusively, through universities and post-graduate university training, plus, of course, the essential experience on the job after entering the profession. Formal instruction in post-high school institutions is heavily relied upon to train technicians. (This instruction may be given in a technical institute or through formal instruction provided by an employer, usually a large one.) The curricula of such institutions invariably include courses in mathematics and science, in the theory of the specific field and in the practical application of general principle to specific problems in laboratory or shop. Nevertheless, many technicians do acquire their skills in the same informal manner that the majority of the skilled category do.

The United States is generally regarded as having ample resources of highly skilled workers, among the best in the world. It may come as a surprise to many people to realize that the great majority of these highly skilled workers acquire their skills through relatively informal means!

A study made for the Social Science Research Council shows that only one-fifth of the workers who held skilled jobs in the decade between 1940-50 had even been in an apprenticeship program. This figure included all drop-outs in addition to the much smaller number completing the training. Probably considerably less than 10% of the total skilled workers during the period studied acquired their skill through completion of apprenticeship.

In general, American vocational high schools do not equip any significant number with the skills essential to meet the criteria indicated under a, 3 above.

At best they may provide its graduates with a head start, over other beginners, for apprenticeship or other on-the-job training. There is not enough time in high school to train a skilled worker. Moreover, few if any such vocational schools have the equipment or can duplicate the requirements of the vast range of skilled occupations in our complex ever-changing economy.

If formal apprenticeship and pre-employment vocational training do not account for the acquisition of abilities required of a skilled worker in the majority of instances, is the answer that industry itself has highly developed formal training programs for this purpose? The answer is, for the most part, no. While there are a few exceptions most industrial training is given informally on the job, and is oriented to immediate production or services needed. It is largely in the hands of supervisory personnel who are in charge of operations (i.e., the line officers). While

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there has been a marked growth of training departments within large firms in the past 15 years, these generally have only staff responsibility for advising and assisting operating departments in meeting their training requirements. This has probably had its greatest impact in the training of foremen and other first line supervisors. It is in this key area of "training the trainers" that industry's training departments have hit the jackpot in terms of multiplying their effectiveness.

Industrial training of performance-level people is seldom a formal and continuing program. Training is used to meet spot needs such as those arising when a new worker is added, or an older worker changes jobs, or when operations are expanded, or new methods or techniques introduced.

After exhaustive study of this problem, the National Manpower Council concluded that, broadly speakly, the process of progression from an unskilled (beginner) to a skilled job typically consists of the following:

- (1) training and experience in a given entry job in the plant;
- (2) exposure to the work of more skilled workers (also informal advice from a foreman or a skilled worker);
- (3) incidental experience in the next highest job (during incumbent's vacation or other absences);
- (4) accumulation of seniority (providing the base for both the incidental higher skilled experience and promotion);
- (5) some specific training, usually in connection with promotion, if it is needed. (The worker himself may in some cases, by no means the majority, supplement this by taking night school, correspondence school courses or other off-job instruction.)

To these steps the Council added that of job-changing. Many workers make the jump to higher skill classifications by the process of changing jobs. This may occur during labor shortage periods, periods of new plant expansion, et al, as well as during normal periods. The worker, having many of the skills needed for the next step up is often able to represent himself, and get hired, as fully skilled. He does this concealing the gaps in his experience, and depending on the opportunity of acquiring the lacking skills through self-training on the new job.

There is general agreement that this highly informal method through which the majority of US skilled workers acquire their skills owes its effectiveness to two basic factors:

- (1) The existence of a substantial body of highly skilled workers already in the employed labor force.
- (2) Heavy incidence of secondary school education among the young people entering the labor force. About 60% of all 17-year olds graduate from high school and about 80% of all 14- to 16-year olds have some high school education. This educational foundation has provided a broad base for later training. Some high schools do better than others, but on the whole all of them provide students with an opportunity to increase the skills which form the very foundation for work. These skills consist of:
 - (a) the ability to communicate effectively in writing and speech;
 - (b) handling elementary mathematical operations;
 - (c) the ability to utilize knowledge in copying thoroughly and systematically with problems.

Moreover, from his secondary school experience, the student acquires basic work habits. He learns to follow a regular schedule, to meet performance standards, and to respond to incentives in the form of grades, privileges, awards and opportunities for further study.

Courses of Action for Underdeveloped Areas: Elements of a Basic Program

As in the case of the other major phases of creating a manpower program in support of economic development, a program of education and training (skill production) takes careful planning, money and time. It would be a mistake, given the current lack of world knowledge on the subject, to suggest that one and only one effective program for rapid skill development is possible. There may be and undoubtedly are many paths to this objective. The elements of a basic program which are discussed here, however, are those suggested partly by American experience, partly by the direction which has been taken by certain developing countries, and in part by the demands of the situation in which most underdeveloped countries find themselves.

a. The Significance of the American Experience

Insofar as the manual skills are concerned (and these constitute, numerically, by far the largest category) the American experience indicates that a highly developed and expanding industrial economy can be sustained without the creation of extensive systems of vocational schools, or "trade schools" or for that matter, without a very heavy reliance upon long formal apprenticeship programs.

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The American experience suggests rather clearly that less formal methods can be and are highly effective. These methods appear to have more applicability to the problems facing developing economies than some alternate possibilities. For one thing such countries do not have supplies of skilled craftsmen and other workers who can be diverted as instructors in large-scale out-plant vocational and trade schools in addition to those needed to staff growing productive enterprises. In addition, it is increasingly impractical, in a school, to teach a particular student how to use a specific machine or do a particular job owing to the vast variety of machines and techniques and the constant changes which occur in technology. Furthermore, in a poor country the modern machinery needed to equip such vocational schools is much more urgently needed and will be much better utilized on actual production of the goods needed by the economy.

The relatively informal American methods depend for their success upon certain underlying conditions. In these conditions lie clear guidelines to governments faced with the task of fashioning skilled men for their developing economies:

- (1) Provision of a broad base for later training through sound and thorough primary-secondary school education. This basic "preparation for work" is as important and as applicable in an underdeveloped country as in an advanced one.
- (2) A basic cadre of skilled workers. Of course, if the country had a large enough group it would have no skill problem at all. The skill-short country, however, needs to husband and utilize fully the workers which it does have in constantly expanding the skill supply through their help. All existing industries in an underdeveloped country have some such cadres or nuclei. For new industries, stop-gap measures can be adopted to bridge the gap until a regular supply can be generated (See section d below).
- (3) "Training-conscious" supervisors (from top administrative to foremen) aware of their training responsibilities and trained to carry them out.
- (4) Labor mobility, both within the firm and among firms is a crucial factor in the development of the skilled labor force. The opportunity to learn through changing jobs and through promotion is a powerful motivating force in skill acquisition. The establishment of a strong National Employment Service can contribute substantially to increasing labor mobility among jobs, industries and different labor market areas (see Chapter E). Sound personnel management can assure clear-cut, properly-

structured lines of promotion, facilitating productive in-plant mobility.

The education and training of professional, scientific, engineering and administrative workers (as well as their sub-professional counterparts, the "technicians") follows somewhat the same pattern throughout the world. American experience has no special or particular significance in this area. Some suggestions touching on this skill-area, however, are made in several of the sections below (these will have substantial impact, particularly as suggested modifications in primary-secondary education are adopted and put into effect).

b. Providing a Basic Preparation for Work: A Sound Primary-Secondary Education

(1) General

There have been protracted, if not too profound, controversies in American education regarding the objectives of the educational system. Should it prepare its pupils for "life" or "life adjustment" or should it provide "preparation for work"? Regardless of the merits of the debate in the USA, it is irrelevant in an underdeveloped country. In these countries undertaking the tremendous task of economic development with limited resources, every effort and every investment of time and money must count. The objective of the educational system must be clearly defined as basic preparation for work. It is equally important that this concept be clearly understood.

(2) It is Not Intended To Be Specific Vocational Training

"Preparation for work" is not conceived of here as specific vocational training. Since most manual skills will be gained through work experience and training within industry, the best preparation for work a student can have is to acquire the skills which will make him eligible for such training and facilitate his learning.

This essential adaptability and flexibility is best acquired by competence in the basic skills and subject matter that can be used in the widest variety of occupations. Reference here is to the basic common skills, including the ability to read with comprehension, to communicate understandably (both orally and in writing) and to use arithmetical processes accurately. Completion of this preparation should find the student introduced to, and with a working understanding (but not, of course, full mastery) of the basic disciplines of mathematics, chemistry, biology, physics, geography, history,

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and literature. He should in addition at this point have a good fund of general information, fairly sound habits of application and work and to know fairly well where his particular abilities lie.

This basic preparation for work is equally essential for people who will enter the "non-manual" skilled fields by way of higher education or technical training (doctors, scientist, engineers, et al).

(3) Isn't This Impractical or Academic?

The question may be raised, as it has been at one time or another in our country's history, "Isn't all this basic preparation business a lot of academic nonsense, particularly in relation to the manual skills?" Why not put the young to work or in apprenticeship as early as possible without all or most of "this educational fol-de-rol?" The simple answer is that it just works better the other way in an industrial or industrializing economy. The few years that might be saved by a more "practical" approach are badly offset by the lesser preparation. After all, the students are only 12 to 13 years old at the end of primary school, and hardly prime labor supply or learner-candidates for industry at that age. As a matter of fact, the two major industrial powers, on either side of the iron curtain, respectively, apparently have reached about the same conclusions on this subject by widely different routes. This is clearly indicated in reviewing National Manpower Council's (USA) "Policy for Skilled Manpower" (1954) and the Office of Education's (HEW) thorough study of "Education in the USSR" (1957).

(4) How Much? How Soon?

The amount of this basic preparation which an underdeveloped country will be able to provide will, of course, be governed by such factors as the magnitude of the economic development program planned, its timing, the availability of capital and administrative resources, et al. The amount of educational plant must be planned in harmony with the overall objectives, priorities and target dates.

(5) Outline for a Practical Approach

Any approach adopted in an underdeveloped country should take into account certain underlying factors. The country is under heavy time pressure, its citizens are truly "people-in-a-hurry." Its resources for

capital investment in everything (including educational facilities) are in drastic short supply in relation to the development goals sought. The underdeveloped country faces a situation not too unlike that which economically developed countries face in a time of war mobilization. Under these conditions every country inevitably discovers that traditional methods can be greatly speeded up and changed with no great loss in effectiveness. It also becomes apparent that human capabilities and capacities for rapid learning are usually substantially underestimated in normal times. Human beings respond with unexpected celerity and effectiveness in times of mobilization and emergency.

The approach suggested here, in the briefest terms, is based on these underlying factors, considered within the frame of a country which is mobilizing in a very real sense, not for war, but for the advancement and well-being of its people.

There is good reason to believe that the essential and basic preparation for work could be provided in an integrated primary-secondary process reaching completion at what is 10th grade in American high schools. #/

In addition to the academic subjects which form a part of the basic preparation for work (see section b (2) above), this 10-year system should include two auxiliary features:

- (a) A good program of "Industrial Arts." In past times called "Manual Training," this program is intended to provide elementary knowledge of basic tools and processes to all students. (As contrasted to vocational training, "Industrial Arts" training is not intended to prepare young people for employment in a specific occupation.) There are two good reasons for inclusion of such training. It will be quite useful for the bulk of the 10-year graduates who will enter industry for on-the-job or apprentice training. However, by far the most important reason for such a program is the urgent necessity for changing the typical fixed attitudes of all educated people in

#/ Considerably better utilization could be made of the limited facilities and the student's time (than prevails in the USA) by extensions of the school year, extra shifts, addition of half-days Saturday, etc., where necessary, to the objectives sought. Students would complete this work at the average age of 15, assuming entry at age 6.

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underdeveloped countries about manual work. Such people generally regard all manual work as a lower form of effort, undignified and requiring little if any skill. It is essential to an emerging industrial economy that these concepts be substantially changed. One of the most effective ways to accomplish this can be by indoctrinating all individuals during this 10-year educational span with an appreciation and understanding of the manual arts and so that they learn by first-hand experience, the very real skills which are involved. The courses should be specifically designed and directed toward this end, to give this work status and to stress the importance and the dignity of such effort. The problem of raising the status of manual skilled work will have to be attacked from many points outside of the educational system; but it offers one of the most promising vantage points for the effort.

- (b) A strong program of Vocational Guidance is essential to achieving the maximum values for the economy from this period of basic preparation for work. It is highly important that each individual is aided in deciding, and selects the occupational field for which he is best suited. Subsequent training and education and finally the life-work contribution of each such person will be immeasurably enhanced by the early and sound selection of occupational goals. Such a program will require the fullest cooperation and aid from the National Employment Service (see Chapter E), the several statistical agencies (see Chapter D), and the Central Training Authority (section 3 below).

At the completion of the 10-year course all further training efforts should be sharply focused on providing specific skills (whether professional, technical or manual) in the shortest possible time by methods and means best adapted to these objectives. The further steps in producing the necessary vocational skills are explored in section c below.

c. Development of a Body of Skilled Workers

Because of the wide differences in the ways the several broad categories of skills are produced, they are considered separately below.

(1) Skilled Manual Workers

Numerically, this is by far the largest of the several broad skill categories.

Having received a basic preparation for work in the 10-grade institution described above, the members of this group will ordinarily proceed immediately to employment. It is here that they will acquire their vocational skills, and because of their advanced preparation, will be singled out by plant management for training in the skilled jobs. They will acquire steadily increasing skill in a wide range of occupations as the result of a number of different stages, personal efforts and employer actions.

(a) Informal Training

The "natural" or informal processes of learning and acquiring skills which were examined in reviewing the American experience may be expected to operate with great effect in this environment. This group is composed of prime learner material and it will be strongly motivated to progress. (It must be assumed that the normal monetary incentives will exist to aid in this motivation.)

(b) Employer Action on Training

Because the number of highly skilled workers in the employed labor force will be very, very small by American standards, employers will have to make up for the paucity of this "natural" resource of informal on-the-job training.

This can be done by heavy development of, and emphasis on, formal induction and on-the-job training in order to assure maximum use of the existing skilled cadre. Similar and equally strong action can be taken to make the line supervisors "training conscious" and to train the foremen intensively in their responsibilities for training, supervising and developing highly skilled men.

In cooperation with the educational authorities, employers can aid the process also by arranging for related instruction supplementary to the work experience, to be given in the plant, or out, at day time or night school. Similar arrangements can be worked out for formal apprenticeships. While skill in the majority of occupations can

ordinarily be acquired equally as well by faster, less formal methods, apprenticeship is indispensable to certain highly complex occupations.

(c) Government Action To Step Up Training Output
(Manning Table Procedure)

In addition to its efforts in stimulating induction, on-the-job, off-job and supervisory training, the government has available to it an additional and useful lever to expand industrial training activities substantially.

There was a device which was highly effective in the WWII mobilization in the United States in sharply increasing employer interest in and action upon speeding up the training process, in a rational and well-managed fashion. It was called the "Manning Table" procedure, and had its genesis in the government's necessity to withdraw many highly skilled men from industry for the armed forces. The government specified approximately how many men would be withdrawn at set periods from each major establishment. The employer was required to prepare a manning table, by specific occupational categories, and prepare specific plans as to how he would train replacements, from within the plant, to take the places of those who were scheduled to be taken for the military. There are striking similarities between the training problems facing a country mobilizing for economic development and one mobilizing for war.

The manning table procedure could, therefore, be a useful and effective device in a developing country, as a major stimulus both to training and to the orderly processes of personnel management essential to planning and executing such training. It would have particular applicability in industries marked for unusual expansion in the economic development plans. The existing plants could be used as "forcing beds" for the ever increasing stream of skills required by the new establishments coming into being. Planning and execution of such a program can be implemented by a suitable economic incentives to employers and workers. The program would be logically coordinated and directed by the Central Training Authority (see section 3 below).

(2) Technicians (See section 1, a (2) for definition.)

The training of technicians has a particular importance and urgency in underdeveloped countries. Since the functions of most technicians are related to and directly support the work of professional personnel, it is possible to multiply greatly the effectiveness of scarce professional manpower by expanding the number of supporting technicians. This augmentation can be done much more rapidly and with much less educational investment in this manner than by any other means.

Technician training is best done in specialized schools established for this particular purpose. Entry into the technical schools would be from the basic 10-grade primary-secondary institutions. Because of the close relationship of the work of each particular kind of technician with the professional occupation which it supports, each technical school should be closely associated with the university giving the related professional training. Each such university would determine the curricula, length of training, standards and other elements involved in the technician training, subject to review of the Central Training Authority (see section 3 below).

(3) High-Level Human Resources (Professional, Scientific, Engineering, Educational, Administrative)

While the creation of these skills is treated last in sequence, they are in fact the most important of all and are central to economic development. In fact, the achievement of economic development depends pretty much upon the provision of the required numbers and kinds of such individuals properly trained and placed in government and private enterprise. All of the occupations involve the longest training time of any of the skill categories. All of them require university training as a minimum and in many cases extensive post-graduate work in specialized institutions at home or abroad, plus a considerable on-the-job or "internship" or learning after completion of academic training prior to reaching full competence in the profession.

The determination of the number and kind of high-level skills which need to be produced within the framework of the plans (and the time schedule) for economic development needs to be made by the Office of Manpower Resources and Planning (or its organizational equivalent). These determinations should largely control

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the number, capacity and the kinds of higher educational facilities needed to meet the requirements.

Because of the shortage of all resources the optimum utilization must be made of the scarce personnel and facilities for higher education, and the output, of necessity, must be geared closely to producing the specific skills needed for development. This will inevitably call for almost exclusive emphasis on the particular high-level skills indicated above, and a great de-emphasis for many years in the future of liberal arts, classical subjects, journalism, law and others without the occupational content required for economic development.

In no other skill category is the time urgency greater than for a vastly expanded production of the professional, engineering, scientific, educational and administrative skills. The compressed 10-grade primary-secondary school system is designed to provide a running start to those who will go on to higher education and the acquisition of the "high-level" skills. With some Adjustment in university curricula, full advantage may and should be taken of this 2-year head start.

As suggested in section b (5) above, many things are possible of achievement in a time of necessity of crisis, which are not considered feasible in a more traditional milieu. The strained resources and the cruel time pressures of the newly industrializing countries do not allow either for the relatively leisurely pace of the West's higher educational processes, or all of the traditional standards in which its professions have wrapped themselves over the years. As UN's Committee of Experts so rightly put it in their report, "Measures for the Economic Development of Underdeveloped Countries" (1951).

"We wish to draw attention to one point where the training of personnel is affected. It is impossible to reach the goals if only men of the highest (formal) qualifications are to be employed as teachers, physicians, dentists, bridgebuilders, agricultural experts, or the like. There must be a vast outpouring of men who have received no more than one or two years (specialized) training to work in spheres where a four- or five-year training is usually demanded in developed countries.....Economic development will be held up if underdeveloped

countries are compelled to adopt the expensive standards of the more advanced countries."

There is not a single line of preparation for these "professional" level skills which cannot be shortened and compressed very substantially to produce personnel adequate to the job to be done, albeit falling somewhat short of traditional "western" standards. This modification is a matter of the highest priority and should be resolved as early in the development program as possible. This can be approached through the use of the job analysis techniques of the National Employment Service to get at and identify the essential tasks and skills in each high-level skilled occupations. The joint efforts of the Ministry of Education, universities and the Central Training Authority (section 3 below) can then be brought to bear to plan courses and curricula directed specifically and solely to producing these essential skills.

(4) Summary of the Essential Structure of the Educational-Training Apparatus

The elements of a basic program for developing a skilled work-force begin with the establishment of a 10-grade institution providing a basic preparation for work through a sound primary-secondary education. This institution would graduate its students at the 15-16-year age level. These students emerge equipped, in addition to their academic preparation, with constructive attitudes and appreciation toward skilled manual work, and also as a result of vocational guidances have achieved fairly specific decisions with respect to their occupational goals.

The larger number of graduates will normally proceed directly to on-the-job in-plant training in industry (plus a small number into apprenticeships) designed to produce high-grade skilled workers. Another smaller group proceeds to technical institutes of various kinds designed to produce competent technicians in as short a time as possible to support and extend the effectiveness of the scarce doctors, scientists, engineers, et al. The institutes would be attached to and under the technical direction of the universities producing the corresponding professional skills. A third (seeded) group of 10th grade graduates would proceed to professional level education and training in educational institutions, adjusted in curricula and method to reduce substantially the amount of time required to produce adequate levels of skill in greatly increased quantity.

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d. Improvement and Expansion of Existing Skills: The Problem of the Present and Near-Term

The preceding sections have dealt with the elements of establishing a basic program for producing the skills needed for economic development. Since these are all things "to be done" they lie in a future time frame. Difficult as they will be to bring to fruition, there will be at least some time in which to plan and carry out the necessary steps, insufficient as that time may seem to the architects of development.

This contrasts sharply with the thorny problem of "today." In many ways this is a far more difficult thing with which to cope. It is more urgent, more important, as well as more difficult than any program of action designed to meet "tomorrow's" demands. For the very plans, institutions and programs for "tomorrow" have to be brought into being and constructed with the high-level human resources^{*/} which exist today. And with relatively few exceptions these resources are in shockingly short supply in most of the underdeveloped countries of the world.

This critical shortage is the result of a number of causes. The primary one, however, has undoubtedly been a failure to recognize and understand that the development of physical resources--industrialization--cannot be brought to practical fruition without the concomitant development of managerial and other "high-level" skills. Today's alarming shortages are the penalty paid for this lack of recognition and the failure to plan yesterday for today. In far too many countries the current supply is inadequate for the maintenance and management of even the threshold levels of industrialization which have been achieved to date, largely through extensive reliance upon imported technical and managerial skills.

What can be done to better utilize the present supply and to improve its competence and effectiveness?

A number of steps or measures are suggested below. Few of them have been fully evaluated as to their effectiveness in underdeveloped countries. Most of them are generally conceded, however, to have made substantial contributions to professional and managerial development in more advanced countries.

These measures must be considered within the framework of an important, underlying reality. They are all based on the fact that the individuals who constitute the present, and insufficient, supply of high-level skills are all working full time at these skills. With few

^{*/} This treatment is confined largely to the problems associated with the near-term task of improving the high-level manpower skills (particularly administrative and managerial) because of their crucial importance to the whole process of economic development. Many of the ideas (e.g., "counterpart" training) are equally applicable to other skill categories.

exceptions, the higher the skill the more overburdened the present incumbents are likely to be. In short they are not available for any kinds of improvement or training measures which will require protracted periods away from their posts.

(1) On-the-Job Training

On-the-job training is at once the most practical and effective of all of the methods, particularly as it applies to administrators and managers at all levels. (Professional persons, scientists and engineers who come to their jobs after a long period of specific vocational preparation can, of course, be aided but to a lesser extent than the managerial group.) On-the-job training may take many different forms. In enterprises owned by foreign capital it may be made a formal and systematic part of the training of every "manager" from foremen on up. In new industrial enterprises brought into being by foreign capital or foreign aid, agreement may be reached for a system of "counterpart" training, providing for on-the-job training of local individuals in each of the key positions by the foreign management cadre brought in to get the plant into operation. The local talent then replaces the original group when trained.

Experts may be brought into government or private organizations to provide advice and training on the specific subject of administration, or particular phases of the management process.

One of the most extensive resources for providing on-the-job training and administrators and managers is one that sometimes goes unrecognized and has not as yet been fully exploited. Reference is made to the large number of technical experts in dozens of specialized fields who go to underdeveloped countries under U.S. Government sponsorship or that of private industry, foundations and international agencies. While they may not be fully aware of it, the great majority of these subject specialists also have a good working grasp of the fundamentals of administration and management. Some of these people discover early that if they hope to establish their technical specialty firmly in the host country it is necessary to devote as much time to the vital management elements of organization, planning, evaluation and control in the host organization as they devote to their particular area of specialization. Many specialists, however, either are not fully conscious of their latent competence, or feel that administrative and management matters are outside the scope of their technical assignments.

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This untapped potential is much larger than is often realized, and the amount of on-the-job training and high-level resource development could be increased greatly by focusing attention on it and taking steps to exploit it more effectively. Pre-departure refresher training for technical experts in the fundamentals of administration, organization and management would be a major step in this direction and would repay the investment of time and money many times over. In addition to making clear the importance of this facet of the assignment, these responsibilities could well be made an integral part of every project description or individual job sheet.

(2) Off-the-Job Training

For the reasons advanced previously, off-the-job training for currently active high-level manpower must be confined to relatively short periods away from the job or during off-duty hours.

Establishment of evening hour special courses or seminars in business or public administration in existing institutions of higher learning is one method which has had fairly wide acceptance. Similar classes and lectures have been offered for scientists, technicians and engineers for the purpose of updating their training and keeping them abreast of advances in their fields. Establishment of formal courses in public administration within larger government agencies has occurred in a number of countries. The courses are held on excused time or immediately after working hours.

Courses of relatively short duration (e.g., one to three months) can often be accommodated without too serious disruption to the job requirements of the incumbent high-level staff. These may be organized within their own country, or held at a regional center in a neighboring country. A number of courses, workshops and other training projects in this category are provided in the United States, e.g.:

Special "leader" workshops and training projects in public and private management (such as the Vanderbilt project, tax study project, Harvard, et al)

Specialized conferences and training projects developed by U.S. professional associations in collaboration with the universities (AMA, et al)

Executive and supervisory training in industries in the U.S. (and other developed countries)

Individual and group training and observation projects for management personnel, scientists, technicians and government officials involving work or study assignments in particular agencies, industries or universities as well as "guided observation" of other activities.

(3) Other Devices for Improving the Effectiveness and Utilization of Today's High-Level Human Resources

The formation of a professional association for management within the country can be an extremely effective device in bringing about increased interest in and progress toward improved management in both private industry and government. It focuses attention on the problem, raises the status of the practitioners, and through its meetings, conventions and publications provides for exchange and dissemination of practical ideas in the management field. In addition to fostering interest and discussion in the general problems of administration and management such associations encourage the growth of effective sub-groups devoted to particular aspects of the field, such as industrial relations, personnel management, production and materials controls, et al.

Other professional associations can serve similar purposes for accountants and auditors, economists, statisticians, marketing and sales executives, social workers, teachers, et al in addition to various professional organizations in the sciences and engineering.

There are ways of better utilizing the extremely limited existing high-level staff resources. Jobs in underdeveloped countries, even quite high-level jobs, often tend to be made up of rather ill-assorted or illogical combinations of tasks. Administrators in the higher echelons often perform tasks and make or review decisions which should be within the purview of functionaries at the level of shop foremen or stockroom chiefs. Very great increases can be made in the supply of effective high-level talent, utilized on high-level work, simply by a major reorganization of the work of such individuals, delegating less complex tasks down the line where they belong. In many countries where the institution seems to be unknown just the provision of such useful office aides as personal secretaries would substantially relieve top executives of such present time-consuming minutia.

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In the case of scientific and engineering personnel similar increases in the utilization of high-level talent on high-level work can be made by providing technicians and skilled or semi-skilled helpers. These in turn can often be upgraded from other jobs in the same field, quite rapidly.

Broad avenues of progress in the more effective utilization of high-level talent can be opened through the development of effective industrial relations programs for improvement of selection, training, promotion and compensation of such workers in both the public service and the private sector.

Another device which may be useful in making the fullest utilization of scarce skill lies in the development of professional consulting services to make such skills more widely available, and to keep such individuals employed full time at their highest capacities.

Better utilization may also be obtained by more specialized organization of the labor market for high-level skills, including the use of national registers or rosters and other special placement devices; including improved pooling and placement of men returning home from foreign training assignments. Followup can also be made of past graduates in sciences, engineering, et al to identify those not utilizing their specialized training and to attempt to redirect them to employment which will utilize these scarce skills.

Organizing for Skill Production: Central Training Authority

Comparisons have been made in preceding sections between the conditions of full war mobilization in developed countries and the conditions facing a poor country struggling to achieve economic development. Comparison is apt for the conditions are fundamentally similar. In relation to the great and formidable tasks faced by each, they have these things in common:

- There is more to be done than seems possible through human effort.
- The pressure of time is remorseless.
- There is so little to do with in relation to the job to be done.

And

- The penalty for failure is a national catastrophe.

Conditions of such urgency impose their own special requirements with respect to the organization and disposition of the Nation's resources in relation to the tasks at hand. They do in short, make necessary much closer direction, control and guidance of the Nation's economy and its people than would normally be the case under less trying circumstances.

In the field of producing the skills needed for economic development, for example, the choice of curricula, educational and training methods, and determination of the numbers to be educated and training for specific fields of work cannot be left to the chance decisions of municipal or state officials, local school boards or individual plant management. Education and training must be geared closely to the needs of the plans for economic development and the manpower required to carry them out. Industrial training must be similarly directed toward the rapid output of craftsmen and highly skilled manual workers needed to man the work stations in the expanding economy.

In order to accomplish these things some central administrative mechanism is essential, such as a Central Training Authority. An organization of this kind might well constitute one of the principal administrative institutions in a manpower program. Its function would be to translate the decisions of the Office of the Manpower Resources and Planning (see Chapter C) into effective educational and training terms, plans and actions. It would determine the need for new facilities or programs to produce the number and kinds of skill called for by the development program. It would also decide upon the modification or expansion of existing facilities.

The Authority would be responsible for appraisal and review of existing facilities and the adequacy of existing and traditional methods of instruction and training. Its purpose in this would be to assure improvement of curricular and training methods with the objective of securing better occupational preparation for more people in less time.

In carrying out its role of planner, manager and director of "skill production" (under the overall direction of the Office of Manpower Resources and Planning) the Training Authority would depend on either the force of legislation or the power of the purse strings (or both) in order to "manage" the flow of raw manpower through the processes of acquiring the necessary vocational preparation. Since the central government will have to provide the bulk of the funds for expansion of the educational training system, the Training Authority will be able to make its decisions effective in many instances by this means alone. In other circumstances, such as in administering a "Manning Table" program to put industrial training under forced draft, it may need both a fiscal carrot and a legal stick.

The organizational position of the Central Training Authority will be determined by a number of internal considerations in any particular country. It probably would function best as an appendage of the Office of Manpower Resources and Planning. It might be placed in a Ministry of

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Education where such a department exists providing there is assurance that it would not be muzzled or neutralized by the influence of educational or training traditionalists or others in such a Ministry with a heavy stake in the status quo. As a general principle, the Central Training Authority should not be burdened with the actual administration of training or educational institutions or such. Its character should be that of a planning, developmental, supervisory and coordinating mechanism.

The need for some such central administrative machinery cannot be over-emphasized. In about every country engaged in a program of economic development this is one of the weakest and most poorly planned and managed phases of the national effort. While a few countries do carry out parts of this essential function, none of them attack the problem on a comprehensive basis. The lack of such machinery constitutes probably the most serious barrier to producing the number and kinds of skills all newly industrializing countries must have to achieve their economic goals.

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