

A REPORT PREPARED FOR THE ADVISORY  
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AGENCY FOR INTERNATIONAL DEVELOPMENT.

THE DEVELOPMENT OF A HUMAN RESOURCE INFORMATION  
PLANNING AND POLICY SYSTEM FOR EGYPT;  
A FEASIBILITY STUDY

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**Summary:**

Despite the Government of Egypt's long-time recognition that the development of its human resources is a cornerstone of any economic development strategy, many educational and manpower problems persist. Foremost among them is an apparent misallocation and underutilization of its human resources. The problem is exacerbated by the lack of coordinated and comprehensive human resource planning and policy and the inadequate human resource information system.

Substantial institutional change may be required to strengthen Egypt's capacity to plan, manage its training programs, and develop effective human resource policy. AID can assist the Egyptian Government with long and short term technical assistance and financial support in a number of areas. Perhaps the single most important area of assistance is human resource information development.

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## I. Introduction

The advisor's temporary assignment, from February 23 - June 23, 1978, was carried out under the sponsorship of the United States Agency for International Development (USAID). Initially, the assignment was undertaken by USAID in cooperation with the Advisory Council on Technical Education and Manpower Development, headed by Dr. Nassan Ismail. Over the course of the assignment, however, the assignment was expanded to serve other representatives of the Egyptian Government. In particular, this report is also aimed at assisting the efforts of the National Committee on Manpower and Training, headed jointly by Dr. Maim Abou Taleb and Dr. Ali Selmy.

The nature of the assignment was to conduct an assessment of the feasibility of developing a human resources information system in Egypt. USAID-Cairo hoped the advisor could initiate and assist the development of that system; provide some specific analysis and recommendations for projects submitted to USAID for financial support; and assist in the day-to-day analysis of human resource topics, as needed.

In these terms of reference, the advisor has had some success and some failure. With the help of Messrs. Ismail, Abou Taleb and others, efforts are underway to develop a human resource information system but, this report does not contain

an analysis of any human resource information. Because the development of the information system is still in its embryonic stage, the advisor has not been able to propose as detailed recommendations as anticipated. On the other hand, the nature of the human resource problems facing Egypt and the broad spectrum of interest groups for which this report is intended to serve, has expanded the terms of reference to include human resource planning and policy making.

In the end, this report is an assessment of the feasibility of developing a comprehensive human resource information, planning, and policy system. The primary purpose of the report is to highlight, from the perspective of an outside observer, some of the major information and institutional obstacles to effective resource planning and policy making; its secondary purpose is to suggest some action that might be taken to begin a resolution of the problems. To that end, the report will discuss the general human resource setting in Egypt, present a general plan for addressing those problems, outline some specific actions the Government of Egypt may wish to take, and provide some specific recommendations for USAID, should it choose to assist this effort.

## II. The Human Resource Setting in Egypt; Problems and Obstacles.

Despite the Government of Egypt's (GOE) long time recognition that the development of its human resources is a cornerstone of any economic development strategy and the substantial progress it has made toward developing its educational system, many educational and manpower problems persist. Perhaps foremost among these problems in Egypt is the apparent misallocation and underutilization of its human resources. Egypt appears to have an oversupply of academically trained people and an undersupply of semi-skilled, skilled and technical manpower.

The Government of Egypt is aware of the problems of sectorial imbalance in the demand and supply of labor, and appears to be taking measures to address the problem. For example, the current five-year plan set as objectives, among others, a limit on university enrollment, the development and promotion of vocational-technical education training, and the re-evaluation of present educational policy based on the actual needs of society.

In spite of the five year plan, exogenous factors and other Government policies conflict with its objectives. As part of the incomes policy, the Government provides employment to all graduates of higher education unable to find work. Moreover, the Government establishes many wage scales by fist. The former

policy tends to strengthen the already strong bias among many Egyptians for an academic education while the latter tends to eliminate market forces and inhibit the flow of workers into scarce (and otherwise high wage) occupations. The emigration of Egyptian skilled and unskilled workers to other higher wage Arab states continues to cause skill shortages and bottlenecks in certain sectors of the economy. The "Open Door Policy" and, its implied increased efficiency in many economic sectors, should increase the demands for more and better trained workers.

Although it is the result of many contributing factors, the problem of labor market imbalance seems to have been exacerbated by two factors: 1. There does not seem to be a coordinated and comprehensive human resource policy and 2. the human resources information system currently available in Egypt is inadequate for planning and policy making. Obviously, these two obstacles are inextricably connected; planning and policy formulation is made difficult by the lack of relevant information and analysis.

#### A. Information setting

There are perhaps two sets of information that are relevant to the problem of labor market imbalance: labor market information and data about the management of the educational and manpower training system. The first kind of data provides indicators of the manpower needs of the economy, the second kind of data provides information about how well the training system is

meeting the needs of the economy. Both kinds of data are relevant to planners, policy makers, training program managers, and educators. Indeed, all client groups frequently draw upon the same, or similar, information to study a problem or make judicious decisions.

#### 1. Labor market information

There are several sources of labor market information in Egypt. The major sources are the Central Agency for Public Mobilization and Statistics (CAPMAS) and the Ministry of Manpower and Vocational Training (MOMVT). Secondary sources include the Institute of National Planning (INP) and a variety of occasional studies conducted by individual sectorial ministries, such as, the Ministry of Industry or the Ministry of Housing and Reconstruction. Unfortunately, no one agency has the responsibility, authority and leadership to develop a comprehensive labor market information system.

CAPMAS has the principal responsibility for collecting general statistical data in Egypt. As such CAPMAS collects most of the data elements needed to develop a labor market information base for planning and policy making. Like many general purpose statistical agencies, however, CAPMAS does not have the responsibility to analyze the collected data for specific user groups. Moreover, CAPMAS is unusually reticent to divulge the information

it has for analysis or to supply that information to user groups.

The MONVT has the responsibility to develop labor market information and put that information into a planning and policy system. Unfortunately, MONVT appears to have limited authority to collect information. In addition, MONVT seems to lack both the equipment necessary to collect, tabulate and analyze data, and, the leadership to carry-out its mandate.

The INP, which appears to have the leadership necessary to develop labor market information, does not have the responsibility or authority to develop the needed data. Its role is limited largely to providing advice on request. Similarly, the sectorial ministries do not have the responsibility or authority to develop comprehensive labor market information and, they only conduct occasional studies to meet their own information or planning needs.

In addition to the institutional obstacles to the development of a labor market information system, the individual data elements that are published by CAPMAS and MONVT have a number of weaknesses. In general published data: are not current; are not in adequate detail to assist users or to permit accurate projection techniques; do not contain technical descriptions of concepts, collection techniques and margins of error. The data collected by individual sectorial ministries and others, suffer from many of the above problems and, in addition, are inconsistent from sector to

sector and vary in reliability depending on the quality and comprehensiveness of the techniques used. Moreover, the data from all sources are published with virtually no analysis or interpretative information. Indeed, there is no up-to-date publication from any source in Egypt that would provide the layman or professional with information and analysis about the current and future labor market.

## 2. Management information

Just as information about the labor market is needed to plan and develop human resource policy, management information about educational and training programs is also needed. Management data provide information about how best to meet training needs (e.g. on-the-job or institutional training) or how well specific training is being provided.

Given the labor market imbalance and that the resources available to expand and improve vocational-technical education are limited, the existing structure and methods of training may need to be re-examined and closely coordinated with the needs of the labor market. In order to maximize the impact of training on the labor market, planners, policy makers, and training program managers alike, must be able to decide what kinds of training can best achieve objectives and the cost effectiveness of various training alternatives for each skill.

Management information is made up, in large part, of administrative data internal to each operating organization. Its effective use by decision makers requires a continuous flow of prompt, accurate, well analyzed and relevant information.

The present management information base in Egypt seems to be inadequately designed to meet the needs of decision makers. Traditional information about training activities (number of enrolled students, number of schools and classes, number of teachers, number of graduates, etc.) is collected but, little effort is made to analyze these data. Information about training costs by specific program is not collected. In addition, published data often are too aggregated to develop further analysis; useful data, potentially available from survey questionnaires, are not tabulated; some of the data collected appears to be subject to error and statistical bias, and collection techniques, definitions, taxonomy and hence, much of the collected data, are inconsistent from training agency to training agency.

The lack of adequate information about the labor market and management information about training programs is a major obstacle to comprehensive human resource planning and policy formulation. Another major obstacle is the institutional structure set-up to develop planning and policy and to administer the existing training system.

#### B. Institutional setting

The number of organizations, committees, and agencies

involved in human resource planning and coordination may be too large to permit effective planning. Indeed, the number of entities is so large there seems to be some uncertainty as to how to share the responsibility. As seen above, the Ministry of Manpower and Vocational Training has the responsibility for planning and coordinating vocational training with the needs of the labor market. The Ministry of Planning also has the responsibility for assigning manpower priorities and planning. An inter-ministerial committee, headed by the Minister of Manpower, is charged with coordinating manpower planning and vocational-technical training. The Advisory Council on Technical Education and Manpower Development, headed by Dr. Hassan Ismail, is addressing planning and training issues. And finally, recently Dr. Naim Abou-Taleb and Dr. Ali Selsy were given the responsibility to assess National Manpower and Training Policy. Each of these organizations can play an important role in planning, policy formulation and the implementation of those plans and policy but, to date they have had only limited success in developing an integrated and effective system for human resource planning and policy. In part, this may be the result of the overlapping responsibilities in the institutional panoply.

A similar aspect of the same problem is the extremely decentralized structure of the training system. At least twelve different ministries have training programs. Not all of this training is of equal quality or do they all provide entrants to the labor force. Nevertheless, the decentralized training structure makes it more difficult to make cost comparisons among alternative training methods, to assess occupational supply, and to develop plans and coordinate training activities. Moreover, the decentralized structure tends to freeze training into the rigid institutional structure of each ministry and make, as a result, training less responsive to the changing needs of the labor market.

Egypt is faced with many human resource problems, including among others, unemployment, underemployment, a high illiteracy rate, a rapidly growing labor force requiring massive job creation, a highly institutionalized and decentralized training system, emigration of many skilled workers, and serious skill imbalances. The problems are not easily solved but, a carefully considered human resources development and utilization strategy can work to abate the problems. The development of this strategy and the achievement of the Government objectives in the next five years will require careful planning, an appropriate institutional structure, efficient management and, above all, good information on which to base judicious decisions.

## II.

### III. A General Plan to Develop a Comprehensive Human Resources Information, Planning and Policy System

There is much to suggest that Egypt should embark on the development of a comprehensive human resources information, planning and policy system. The nature of the manpower problems challenging Egypt, the lack of comprehensive manpower planning and policy, the poor coordination of a decentralized training structure, and the inadequate data base, all suggest that there is need for a fresh long-term program to revise the existing system.

The usual reaction to a suddenly felt need for data and planning, or the possibility that much needed resources may become available, is a rather ad hoc program plan. Surveys are hurriedly designed, data quickly processed and policy is hastily formulated. The literature is rich in examples showing how to waste resources due to lack of a long-term program design.

Long-term program planning is also necessary from the management point of view. Day to day decisions are not possible unless the data needs are identified, targets formulated, individual projects established, necessary staffing secured, methodological issues resolved, etc. In addition, some projects may require complex legislation to implement and legislation often takes time. This is not to say that the design for an information, planning and policy system should be rigidly set

but merely note that it is important to foresee future tasks as far ahead as possible and to organize these tasks as efficiently as possible. And all of this takes time particularly since the development of information, planning techniques and policy formulation is a learning experience requiring continuous refinement.

Perhaps an equally common error in project development is to propose work of colossal dimension. Too often projects fail simply because too much work was planned.

On top of this it should be emphasized that Egypt urgently needs information to make decisions now. The Government of Egypt, the World Bank, the International Labor Organization, USAID, and other concerned countries and organizations, are either investing in, or otherwise assisting, the development of the educational system of Egypt. Each needs to know more about the nature of Egypt's educational system and its labor market imbalances.

Within these parameters, what is suggested here is a long-term general plan to overcome some of the major human resource problems and obstacles in Egypt. In addition, an attempt has been made to limit the project design and to suggest only those things that appear to be feasible. Finally, there are some suggestions for those projects that can be accomplished in the short-run. Specific suggestions and a work plan will follow in the next section of this report.

#### A. Institutional Structure

As noted earlier in the report, the present organization of the institutions in Egypt responsible for human resource information, planning, policy formulation and vocational-technical training are very complex and poorly coordinated. A reorganization of the existing organizational structure appears to be badly needed.

It is tempting to suggest that a new agency, or an already existing ministry, be vested with the responsibility, strong authority and staffing capability to implement a comprehensive human resource information, planning and policy system. The agency should collect and analyze current and planned labor market and training program data, develop new data sources including continuing surveys as needed, design information for specific user groups, develop plans and targets, manage the training system, and develop and coordinate human resources policy. An agency such as this would have the advantage of integrating the complete process in a comprehensive and consistent framework, from data development to policy formulation, from labor market needs to student training.

There are of course a number of disadvantages to this approach. Such a massive reorganization would require securing personnel and administrative machinery that might consume energies needed for other work. A reorganization of this type might disrupt on-going projects unnecessarily. Moreover, it might not be

feasible simply because a reorganization would alter already established ministerial interests.

Questions of reorganization are obviously matters to be decided by the Egyptian Government and in the short-run cannot be implemented. Nevertheless, a major reorganization should be considered by the Egyptian Government as part of its long-term planning in this field.

In the shorter-term and working within the present organizational structure, it might be advisable to formally establish a technical staff to work within the prime minister's office. The technical secretariat should be recruited on the basis of balanced representation of the various concerned interest groups but, the staff should be selected primarily for its technical qualifications. The technical secretariat would: compile and analyze all data relevant to human resources planning, policy formulation, training and management; assess the capacity and effectiveness of the present system; design systems or models as needed; and identify policy, planning and program alternatives.

In many respects this group of experts has been already organized to assist this advisor first by Dr. Hassan Ismail and later by Dr. Haim Abou-Taleb. In spite of this support,

and the progress the committee of experts has made, the committee is hampered by the limited time its members can devote to it. In addition, it would seem that the functions of this committee are ones that should be reappraised regularly by a permanent staff of experts. Ad hoc committees can be effective in the short-run but, in the long-run members tend to develop other interests, take new jobs, or, for other reasons the committee falls into disorganization.

**B. Development of a Comprehensive Human Resources Information System**

Perhaps the major requirement for improving the relevancy and efficiency of the vocational-technical training system and Human Resource Planning and policy making is to strengthen the human resource information system. It is impossible to plan without good information on which to base judicious decisions. However, good information can be best achieved if it is developed within a comprehensive and consistent framework.

Given the Human Resource problems facing Egypt, it would seem imperative that Egypt should take steps to develop three kinds of information: general economic data, labor market information, and data to manage the training system. By and large, much of the information elements needed to develop these data systems currently exist or could be developed from existing data.

It appears in many instances that the data problem is not so much the lack of data as it is its unavailability (or unawareness of its existence) for potential users. Much must be done to organize the information, particularly since many data users need help in the interpretation of statistical evidence. Program managers, curriculum developers, even policy-makers and planners, frequently feel uncomfortable or unable to interpret data.

The extent to which some of the difficulties in this area can be overcome depends in large part on the willingness of the Central Agency for Public Mobilization and Statistics and other data producers to develop a user-oriented philosophy. In the long-term the Egyptian Government may wish to consider organizing data producers and data users within one agency; within the shorter term a technical secretariat might act as a catalyst in the development of this information and philosophy.

The following is a general plan for developing the three types of needed information both in the long and in the short term. A specific outline of work for the short-term follows in section IV.

#### 1. General economic information

General economic information is needed both to assess the changing structure of the Egyptian economy and for the development of labor market information. The specific data elements in this and the other data systems are contained in Appendix A.

In the long-term, Egypt should consider developing a general econometric model of the Egyptian economy. The development and analysis of such a model would stimulate a better understanding of the Egyptian economy among planners, policy makers and other Government officials, it would be useful for forecasting future levels of economic activity and, it would be helpful for simulating different economic alternatives and measuring the manpower impact of those alternatives. Possible candidates that appear to be feasible are either input-output or export-base models.

In the shorter-term, it would seem that the major task is to collect and analyze all relevant economic data for analysis in concert with labor market information and with an eye for identifying immediate data gaps.

## 2. Labor market information

Labor market information is primarily needed to assess current and future skill imbalances but, it also provides needed information for curriculum planning and vocational guidance. Although long-term program planning is important, the development of this information should be emphasized in the short-term.

The initial task should be to develop current and projected (5 or 10 year hence) estimates of manpower demand by occupation; current and projected estimates of manpower supply by training program; match the occupational needs with training program output to derive current and projected estimates of unmet needs

(demand less supply); prioritize the results in terms of a development strategy; and suggest alternative training plans. A secondary task should be to collect and analyse other information about the characteristics of occupations, wages, working conditions, labor force, etc. This information could prove useful in an analysis of skill shortages and, in addition, would serve all client groups with information about the nature of the labor market.

### 3. Training system information

Of the three types of data, information about the training system is best developed. Information about the number of students by training program, training facilities and the like are fairly straight-forward and easily obtained. Perhaps the single major data gap in the information is the lack of cost information about specific training programs. In addition, there are problems comparing information about training from ministry to ministry. As a result, Egypt should develop a national information system for vocational training programs. The system should develop standardized data collection instruments and terms that would allow inter-ministerial comparison.

### C. Improvement of the Management Information System

In addition to strengthening the data about the characteristics of the training system and improving the data needed to manage the system, the Government of Egypt should also consider

improving its techniques for the systematic evaluation of that information. There are several suggestions that might contribute to the better management of the training system.

First, the Government might develop a computer model to simulate different management alternatives. A computer simulation model might be particularly useful for the management of Egypt's decentralized training system. For example, a simulation model could estimate the future investments needed for training facilities, teachers, funding, and the like, if the school age population were increased by say, 100,000 students. The design of the Management Information System should be specifically designed for Egypt but, as a general impression it would appear that many of the models already designed and implemented could be applied to Egypt with only minor modification.

Second, the Egyptian Government should consider sponsoring a continuing seminar program in management techniques. Many of the training program managers in Egypt were not trained as administrators. In addition, the recent trend toward decentralizing decision-making in Egypt suggests that more and better trained administrators will be needed in the future. Training administrators must be able to perceive changes and new opportunities to successfully adapt them to Egypt's needs. Until this administrative

capacity is developed, the effectiveness of the Egyptian training system will be impaired.

**D. Develop a Comprehensive System For Planning and Policy-Making**

Substantial institutional change and the development of an adequate information base are prerequisites to strengthen Egypt's capacity to plan, manage, and develop effective policy for its human resource training programs. Even though these measures are paramount to the development of planning and policy making, there are several other measures that are important to emphasize.

The Government of Egypt should encourage institutionalizing a planning and analytical capability within each agency involved in training. Many ministries do not have staff members that are responsible for data collection and analysis, or planning. Administrators and policy makers need a continuing flow of prompt, accurate and well-analyzed information. In addition, many administrators need assistance in determining the alternative plans of action suggested by the analysis.

In an effort to encourage the institutionalization of planning staff within the various training ministries, Egypt should sponsor seminars on planning techniques. Until a tradition and capacity for planning is developed, Egypt will always be dependent on technical experts from outside the country.

Finally, Egypt should consider the development of a policy simulation model. There are a number of alternative models already developed but, Egypt should be careful to select or develop a model that fits its particular circumstances and solves those problems relevant to it.

The World Bank model currently under consideration for application in Egypt, shows much promise. Nevertheless, the model is not without some problems in design if it is to be applied in Egypt.

Although I have never been provided with a clear description of the World Bank model, I have been able to derive some tentative notion about its structure from several casual discussions. It appears that the model was designed to develop policy alternatives for OPEC Arab states. As I understand it, the primary aim of the model is to determine the optimal mix of foreign and domestic manpower needed to carry out the extensive capital development of the OPEC states. It also appears that the model does not attempt to project future levels of economic activity from past trends but, rather takes the level of activity as a given i.e., there are no financial constraints for investments. In addition, the model does not have a particularly sophisticated method for estimating manpower demand and supply and, currently develops manpower demand and supply estimates for only about 15 occupational categories and 10 economic sectors. Many of these problems of model design can be overcome but, it will require substantial effort.

The World Bank model is not a long-term program designed for developing a comprehensive human resources information system. It could be a useful tool to compliment the information system but, for this advisor, it appears to be an ad hoc solution to a problem that requires a long-term plan of action. Moreover, there is no reason to expect that the World Bank model will provide better information any quicker than if the same resources were devoted to a long-term program design. In this light, it appears the Government of Egypt should carefully consider all possible policy simulation models before consuming its energies in the World Bank model.

#### IV. Some Specific Suggestions For the Development of a Human Resource Information System

The single biggest obstacle facing Egypt in the field of human resource development is the lack of an adequate information system. Good information is a prerequisite for improving the relevancy and efficiency of vocational training and for developing a comprehensive human resource strategy. Egypt should start now to develop a human resource information system.

If as it appears, Egypt is about to embark on the development of a human resource information system, it is important that that system be comprehensive. The information system should be comprehensive in the sense that it should be designed to serve all client groups. Policy makers, planners, training program

managers, educators and students each frequently require the same, or similar, information to study a problem. The information system should be designed to provide long-run (5 years or more) as well as, short-run (1 year) and current estimates. It should offer flexibility so that users may simulate alternative policy decisions or study specific sectors of economic activity. Finally, it should provide information for the Nation as well as for regional markets within Egypt.

The nature of the human resource problems facing Egypt suggest that the information system should seek answers to a variety of inter-related questions. Among other questions, user groups need to know: what is the structure of employment in various occupations, what is the impact of vocational-technical training on the labor market, what do employers expect of trained graduates, what substitution policies exist among various occupations and sectors of economic activity, how can the educational system be geared to meet manpower requirements, how can specific vocational-technical training needs best be met e.g. on the job or institutional training, how well are the scarce educational resources being utilized, and above all, what kind of skills should be trained now and skills will be needed in the future?

In spite of the magnitude of the task, it is feasible to develop a comprehensive human resources information system for Egypt. Much of the data needed to develop a basic information system are available, even if they are not now organized as a human resource information system. What is needed is simply the time and resources to collect, organize and analyze these data.

The following are some suggestions for developing a human resource information system. Included in the plan is 1. an outline of data and methods that should be used to generate the needed information and, 2. some specific tasks that must be accomplished to facilitate the analysis of the data.

#### A. Labor Market Information

An effort should be made to develop a comprehensive labor market information (LMI) system as all aspects of LMI are relevant to human resource development. Nevertheless, particular emphasis should be devoted to measuring current and future skill imbalances through the use of estimates of manpower demand and supply.

##### 1. Manpower demand information

Most of the recent efforts to develop current and future estimates of manpower needs in Egypt have attempted to generate these data from surveys of employers. Employers are typically asked to provide information about their current staffing pattern by occupation and an estimate of their occupational needs in the

future. The estimates of current staffing patterns appear to be reasonably good while, the estimates of future needs typically are quite bad.

In spite of the intuitive appeal of estimates of manpower needs derived from employer surveys, substantial research in a number of countries has shown that method to provide incorrect, and often perverse, data. Indeed, research conducted in Egypt by the Institute of National Planning concluded that it was impossible to derive suitable information about future manpower needs, or manpower shortages and surpluses, from employer surveys.\* Employers simply lack a clear concept of the future and/or do not have a qualified planning staff to accurately estimate their future manpower needs.

In light of the above, it is proposed that Egypt develop estimates of current and future manpower needs through the use of an Industry-Occupation matrix. This approach is a proven method for producing accurate and comparatively low-cost estimates of manpower needs.

The matrix approach requires two sets of information: an industry-occupation matrix, and historical estimates of

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\* Mohamed Mongi, Inventory and Estimates of Manpower Needs in the Public Sector, a Preliminary Study. National Institute of Planning, Cairo, Egypt, 1975.

employment by detailed economic sector. Using standard regression analysis of the employment by economic sector data, it is possible to derive estimates of target year economic growth by economic sector. With several observations of occupational staffing patterns, estimates of the change in occupational staffing patterns can be observed. The application of the projected staffing pattern changes to the target year projections of economic activity, yield estimates of future manpower needs. This is of course only a broad outline of one possible use of the matrix approach. The actual method used depends upon the data and staff support available for analysis.

Fortunately, much of the data necessary to pursue the matrix approach in Egypt is currently available, or could be available with some retabulation. The sources of occupational staffing pattern information are: the 1960 Census of Population, the 1966 Census sample, a 1972 Survey of the Public, Private, and Government sector conducted by CAPMAS in cooperation with IEP, the 1976 Census of Population, and a National Survey of Establishment conducted by MONET in both 1976 and 1977. Industry employment estimates are available for the years 1957 to 1964, 1966, and 1968 to 1974 from a survey conducted by CAPMAS, as well as from the above sources of occupational staffing pattern information.

In spite of the apparent availability of data for analysis, there are several problems that must be overcome. Since CAPMAS is the depository of much of this information, CAPMAS must be willing to cooperate in this effort. Second, as might be expected much of this data is not strictly comparable and much analysis of these data is necessary. For example, the 1976 Census is a survey of households while the 1976 Ministry of Manpower information was derived from a survey of establishments. Third, it appears that CAPMAS does not plan to develop industry-occupational matrices for either the Nation or regional labor markets within Egypt. Since these matrices would be extremely useful for the development of current and projected estimates of manpower needs, every effort should be taken to encourage the development of these data.

The short-term task ahead for the Egyptian Government is clear: It must organize a full-time staff of experts to develop estimates of current and future manpower needs by occupation. The staff of experts would work within the existing ministerial structure to collect the information cited above, analyze the data, identify potential data gaps, and suggest methods for improving the data base.

In the longer-term, the staff of experts should undertake two major projects. First, it should appraise the current labor

market information and, on the basis of those findings, prepare a plan for the comprehensive development of that information. Particular emphasis should be placed upon developing information for special client groups e.g. vocational guidance materials and information for curriculum planners. Second, the staff should prepare a series of position papers about issues concerning the labor market. For example, the staff could prepare position papers about: The role of women in the labor market; Wage Policy and its effects on training programs; Emigration and its effects on the Egyptian labor market.

## 2. Manpower Supply Information

Much of the data needed to develop basic estimates of the current and projected supply of training program graduates are readily available from the individual ministries responsible for that training. This information, however, is not easily comparable from ministry to ministry. As a result, a committee of curriculum experts in vocational-technical education should be formed to standardize concepts, definitions and taxonomy. As part of that effort, the committee should develop cross-walk instruments that would allow for the comparison of training data between ministries and with the occupational categories used to develop manpower demand information.

The supply of manpower is not just the numbers of trained graduates from vocational-technical schools. Others enter the labor

force from the military, some graduate from private schools, some are trained on-the-job, and others re-enter the labor market after some period of inactivity. Although these sources of manpower supply may be fairly small, every effort should be made to obtain information about each of these sources. Perhaps this activity would be best carried out by the full-time staff examining labor market information.

#### B. Management Information

In order to maximize the impact of the training system on the labor market, managers must be able to decide what kinds of training can best achieve objectives and evaluate the effectiveness of those training programs. Unfortunately, the present management information system does not provide much of the information needed by decision makers. Moreover, the information that is collected is not sufficiently analyzed to be useful for managers.

The Government of Egypt should organize a committee of experts to design a national system of management information for vocational-technical education programs. The committee should design a system that would be useful for both the National Government and individual ministries. Particular attention should be devoted to developing a standardized system for measuring the costs by individual training programs.

In the short-term, the committee should attempt to develop

a set of performance indicators that might be useful for inter-ministerial comparison. The Government should also consider improving the capacity of the training program administrators to manage and to gather data, through the use of seminars on management techniques and statistical development.

V. Some Suggestions for AID Support in the Area of Human Resource Information Planning and Policy Making.

Indicated below are some suggestions on the kinds of technical assistance AID might offer the Government of Egypt in the area of human resource information, planning and policy making.

The present organization of the training structure and the human resource information, planning and policy making is extremely complex and poorly coordinated. A reorganization of the institutional structure is badly needed but, that is clearly a matter in which the Egyptian Government must take the initiative.

A rationalization of any part of the training, planning, policy making, or information system however, would make it easier for the Egyptian Government to assess and implement some of the required changes. Moreover, any rationalization of the system would serve AID interests, as well as other concerned countries and organizations, in formulating a strategy for assisting Egypt's human resource development. It would seem that AID should seize any good opportunity to assist the rationalization process.

From this advisor's perspective, AID currently has an excellent opportunity to assist the Egyptian Government. All the

ingredients necessary to develop a basic human resource information system are available: the data elements needed exist even if they must be organized and analyzed, a qualified staff of Egyptian technicians to assist the effort has been assembled and, perhaps most important the effort has the profound support of the Egyptian Government. Dr. Naim Abou Taleb, Minister of Communication, Transport, and Marine Transport, is deeply interested in the project and, as illustrated by his efforts to date, is committed to providing whatever administrative support that may be necessary to complete the project. The only ingredients that are not present are the technical guidance and financial resources to carry out the project.

#### A. Human Resource Information

In this light, it would seem that AID should seize the opportunity to provide valuable assistance to the Egyptian Government by strengthening its human resource information system. Developing good information is a prerequisite for developing planning and policy, and in the advisor's opinion, would lead naturally into an improvement of those functions.

There are two important proposals in this area for AID consideration. First, AID should support the services of a full-time (at least one year) advisor in the area of human resource information, planning and policy making. The advisor would perform several important functions: assist the Egyptian

Government in the development of a comprehensive human resources information system; encourage and assist the development of comprehensive and consistent human resource planning and policy making; provide AID a continuing analysis of the human resource situation and contribute to the formulation of an AID strategy in this area; provide guidance to short-term advisors; and monitor activities in this complex field by maintaining a close working relationship with representatives of the Egyptian information, training, planning and policy making organization.

Second, AID should consider temporary financial support for a strong technical staff to support the activities of developing a comprehensive human resource information, planning and policy system. The financial support could be made directly to the Egyptian Government. This might be the best approach if the Egyptian Government establishes a technical secretariat for the development of this system. At this stage or until a long-term project is designed, it might be best to channel any financial resources through the human resources' advisor or Education Officer.

There are several reasons for financial support in this area. First, ad hoc Committees are not effective in the difficult work of data development, planning and policy formulation. Committee members often have multiple responsibilities and cannot devote their full efforts to the tasks at hand. In addition,

It is important to establish a full-time staff to carry on the activities once the program is developed. Second, the development of an information system, a planning or policy model etc., will require some computer time. Resources for this type of activity are in short supply in Egypt. In the advisor's view, a short-term expenditure for these activities would demonstrate the use of these techniques and, free-up resources in Egypt for future work.

#### B. Other Areas for AID Technical Assistance

##### 1. Human Resource Planning

AID could assist in strengthening the human resource planning techniques in Egypt. It could provide assistance to an appropriate Egyptian organization to conduct seminars in planning techniques. Short-term advisors might be able to assist with the seminars and assist any agency or organization in need of individual assistance. Indeed, nearly all the ministries with which the advisor conferred wanted direct assistance from the advisor.

##### 2. Management Information System

AID could assist the improvement of management information and the systematic evaluation of that information in several ways. It could provide seminars in Cairo on the design and development of management information systems. It could also provide short-term training courses designed to strengthen the administrative capabilities of training managers. Finally, AID

could provide short-term technical assistance to individual key ministries in the areas of management information systems and administrative development for training program managers.

### 3. Ministry of Manpower and Vocational Training

The Ministry of Manpower and Vocational Training is responsible for many of the activities proposed in this report. Unfortunately, the Ministry has not been adequately performing its planning and coordinating function. Most people I spoke with felt that it was partly a problem of leadership and partly a problem of inadequate staff. AID could assist this agency in several areas. First, AID could provide short-term technical assistance to strengthen the management capabilities of its staff. Second, some short-term assistance in the Ministries' specific activities e.g., operation of labor exchanges, development of labor market information, and development of vocational guidance materials, might be very helpful.

**APPENDIX A: Some Data Elements of a Basic Human Resource Information System**

**A. Population Information By**

1. geographic location
2. age
3. sex
4. educational attainment

**B. General Economic Information By**

1. domestic product by economic sector
2. capital investment expenditures
3. government expenditures by program area
4. value of exports/imports by major product
5. value of sales and unit sales
6. measures of worker productivity
7. other national accounts information

**C. Labor Force Information By**

1. geographic location
2. age
3. sex
4. employed/ unemployed
5. individual and family income
6. paid and unpaid family workers
7. educational attainment

**D. Employment Information By**

1. economic activity
2. geographic location
3. occupation by age
4. occupation by economic activity
5. number of dual job holders by skill level by occupation
6. employee turnover by industry
7. employee turnover by occupation
8. occupation of previous job
9. geographic location of previous job
10. occupation by income (wages and other compensation)

**E. Educational Information**

1. enrollment by
  - a. school grade
  - b. locality
  - c. area of study (Higher Education)
2. training completers by
  - a. type of training (electricians, auto mechanics)
  - b. source of training (vocational, technical, on-the-job)
  - c. ministry
  - d. geographic location

**3. management information**

- a. cost of training by specific training program**
- b. physical plant of training facility**
- c. number of teachers by training program**
- d. equipment by training program**
- e. location of training facility.**