

A Report Prepared for the Advisory Council
on Technical Education and Manpower Development
(Ministry of Education) Under the Auspices of
the U.S. Agency for International Development

An Assessment of Egyptian Manpower Planning
and Information Programs Relevant to Technical
Education and Vocational Training.

Allan F. Salt, Economist
Bureau of International Labor Affairs
U.S. Department of Labor
March 11, 1977

TABLE OF CONTENTS

I. Challenges Facing Egyptian Vocational Training.....	2
II. Requirements for Strengthening Egyptian Vocational Training.....	5
A. Developing a General Strategy for Strengthening Vocational Training.....	6
B. Formulation of a Comprehensive Manpower Policy.....	11
C. Planning Structure and Coordination.....	14
D. The Manpower Information Base.....	17
(1) General purpose data.....	18
(2) Management information.....	21
(3) Other information problems: Manpower planning at the establishment level.....	25
(a) Professional information exchange among vocational trainers.....	26
(b) Vocational guidance information.....	26
(4) Applied analysis of manpower data.....	27
III. Construction Labor Requirements.....	28
IV. Summary of Principal Recommendations.....	31
APPENDIX: Principal Contacts.....	37

The advisor spent the period January 11 - February 1, 1977, in the Arab Republic of Egypt, under the sponsorship of the United States Agency for International Development, surveying the manpower planning and information systems relevant to technical education and vocational training programs. The specific terms of reference for the assignment were as follows:

Determine the present adequacy of data collection and analysis for planning and implementing vocational training programs. Make recommendations for strengthening the manpower-planning system, especially as it relates to planning and implementing present and projected technical and vocational education programs. Review the manpower needs analysis section of the MOHAR Training Agency project planning.

The advisor carried out these terms of reference in the context of the interests of the Advisory Council on Technical Education and Manpower Development (Ministry of Education) under the general direction of its chairman, Dr. Hassan Ismail. The implementation of such broad terms of reference in a three-week period required that the advisor rely heavily on the experience and ideas of the members of the Advisory Council as well as numerous other Government and private observers of the Egyptian manpower scene. The advisor, therefore, would like to express his appreciation to all those who willingly shared their experience with him and responded to his questions patiently and frankly. As a result of their collective experience, the advisor was able to gain insights into the Egyptian manpower and vocational training^{1/} systems which

^{1/} For convenience, throughout the remainder of this report the term "vocational training" is used to include "technical education."

otherwise would not have been possible. They are, of course, not responsible for any errors and misinterpretations on the part of the advisor. The advisor would like to express his special gratitude to Dr. Hassan Ismail, Chairman of the Advisory Council, for his invaluable support and guidance in carrying out this assignment.

In view of the brief period spent in Egypt, the advisor has not attempted to propose detailed solutions to specific problems. Such solutions will have to evolve from an overall strategy that takes into account institutional factors and economic constraints. What has been attempted is to identify, from the perspective of an objective outside observer, major planning and information obstacles to developing a more effective vocational training system and suggest some initial actions that might be taken to begin resolving them.

I.

Challenges Facing Egyptian
Vocational Training.

Because of the ~~United Arab Republic's~~ large population in relation to physical resources and the rapid rate at which its population is growing, the development and utilization of its human resources must be the cornerstone of any economic development strategy. Egyptian leaders have long recognized the importance of education and, at considerable sacrifice, Egypt has devoted significant resources to the development of its educational system. Substantial progress has also been made over the years in building a vocational training capacity in Egypt.

At the present time, approximately 380,000 young people are enrolled in the secondary technical training programs of the Ministry of Education^{2/} and approximately 80,000 in the secondary technical education programs of the Ministry of Higher Education. Vocational training also is provided by a number of other Ministries, such as the Ministries of Industry and Mineral Resources,^{3/} Housing and Reconstruction, Social Affairs, and Agriculture.

Nevertheless, much remains to be done. Demand for well-trained workers continues to exceed supply by important margins in several skills, particularly in construction. (Indeed, in construction, skill shortages may constitute a severe constraint on the achievement of construction targets in future years.) In addition, the increased efficiency of the industrial and commercial sectors of the economy implied by the "Open Door Policy" will require more and better trained workers.

The Egyptian Government intends to collaborate with the World Bank over the next two and one-half years in a project to increase the magnitude and quality of vocational training. The total cost of this

^{2/} Distributed approximately as follows: Commercial 236,000, Agricultural 40,000, Industrial 102,000.

^{3/} The development of this Ministry's apprenticeship training program represents the investment of significant resources in vocational training. Between 1954 and 1970, approximately \$50,000,000 was expended on the building of apprenticeship and related programs. Of this total, about \$2,500,000 was contributed by the International Labor Organization primarily for 1,573 man months of technical assistance supplied by 71 advisors. Approximately 25,000 individuals profited from these programs annually during the 1954-1970 period.

project will be approximately \$54,000,000.^{4/} But, despite the substantial inflow of resources represented by the World Bank Loan (approximately \$25,000,000), total resources available to expand and improve vocational training in the future will be extremely limited (relative to needs) because of financial requirements for reconstruction, military preparedness, and urgent social investment (e.g., in housing). It is, therefore, imperative to improve the cost effectiveness of vocational training. The existing structure and methods of vocational training need to be re-examined and, for each skill, the costs and benefits of various training alternatives carefully studied. Vocational training must be more closely coordinated with the needs of the labor market. And, since vocational training is not an end in itself, greater care must be taken that ~~graduates~~^{graduates} of training programs are allocated to areas where they are most needed and that they, and all workers, are employed productively. In essence, therefore, vocational training needs to be viewed as only one policy instrument, albeit one of the most important, for achieving greater productivity and its success measured by its impact on the labor market, not primarily by the number of trainees graduated. The achievement of a more effective vocational training system will require careful planning, an appropriate organization structure, good information, efficient management, and dispassionate evaluation of results.

4/ See, Appraisal of an Education Project in the Arab Republic of Egypt, World Bank, January 28, 1977 (Report No. 1285-EGT).

II.

Requirements for Strengthening
Egyptian Vocational Training.

There are several major obstacles that need to be overcome in order to improve the planning and operation of the vocational training system.

- ✓(1) The lack of a comprehensive manpower policy. There is no comprehensive strategy for the development of Egyptian human resources. Without such a strategy, widely known and accepted, it is difficult to develop plans for individual programs that relate such programs to common goals.
- ✓(2) An inadequate manpower information base. The analysis of the Egyptian manpower situation and, therefore, formulation of appropriate policy is made difficult by the paucity of relevant information and analysis. For example, many planning decisions concerning vocational training, both at the national policy level and at the operating program level, seem to be made without sufficient understanding of the implications of various alternatives. Nor are information flows adequate for managing and evaluating programs.
- ✓(3) Poor coordination of the decentralized vocational training structure. The decentralized vocational training system is not adequately coordinated externally with general manpower goals or internally among training organizations.

Contact between trainers and employers is inadequate. Resources are not sufficiently interchangeable among programs.

A. Developing a General Strategy for Strengthening Vocational Training.

Many of the issues facing managers of the vocational training system are extremely complex. In addition, the decentralized structure of both the manpower planning and training systems requires that actions to strengthen the Government's ability to plan and implement its vocational training system will need to influence a number of organizations, frequently with different perspectives and unequal capacities for participating in planning activities. It would be difficult simultaneously to attack all problems concerning vocational training; therefore, the identification of priorities and preparation of a plan of action to resolve the most pressing problems will need to be agreed upon.

The newly constituted Higher Council on Manpower and Vocational Training (Presidential Decree 795 of 1976) presents a unique opportunity to evolve the required strategy, because of its high policy making level and because it is charged, among other tasks, with preparing a national policy for manpower and vocational training. The Council is also charged with determining training requirements and developing a wage policy. The decree, in addition, establishes a Joint Committee for Planning Manpower and Training, which is given broad responsibilities, including a role in planning and implementing specific projects, preparing studies for consideration by the Higher Council, and following up the actions

adopted by the Higher Council. It is charged with making a survey and analyzing data on existing and expected manpower, evaluating the existing capacities for carrying out training, preparing a developmental plan for meeting the resource needs (including instructors) of training establishments, improving adult training, introducing new methods of training and education, assessing appropriate labor intensive technology, conducting manpower research, evaluating statistical data on human resources, manpower, employment, unemployment, labor abroad, immigration, and much more. In essence, the Higher Council and the Joint Committee are charged with formulating manpower policy, carrying out manpower planning, and implementing programs.^{5/}

In order to seize the major opportunity to formulate manpower policy and re-examine the role of vocational training represented by the creation of the Higher Council, the advisor suggests the following plan of action.

✓ First, a temporary staff of experts should be organized to collect all relevant information, analyze it, identify immediate and emerging problems, and propose viable policy alternatives. Such a study would include an assessment of manpower needs, but more immediately would

5/ While the creation of the Higher Council presents a unique opportunity to attack many manpower problems, unless wisely interpreted and implemented, its existence could further confuse the roles of the Ministry of Planning, the National Institute of Planning, and the Ministry of Manpower and various other ministries' roles in formulating manpower policy. For a very helpful description of training legislation and various agencies' roles in implementing it, see "Main Legislations on Training," by Mr. Khaled Taber, Director General of Legal Affairs, Ministry of Manpower.

evaluate planning and implementation capacities and obstacles to their improvement. A number of committees have functioned in the manpower field in recent years but generally with only limited success. In large part, this has been due to inadequate staff support to collect and analyze information, to postulate alternatives, and present findings in a form which decision makers can utilize. Although Decree 795 of 1976 charges the Joint Committee with preparing materials for the higher commission, the committee will be made up of undersecretaries and, therefore, not constitute the strong technical staff support referred to here. Because of the level of the Higher Council (and, therefore, the limited time its members can devote to it) and the broad responsibilities assigned it, the Council's success will depend in large part on the thoroughness and quality of the staff work provided. However, at the time of the advisor's tour in Cairo, he could determine no specific plans to organize a technical secretariat to undertake studies on the behalf of the Council. Since it would, indeed, be unfortunate if the opportunity represented by the formation of a Higher Committee were not realized because of inadequate staff support, a highly technical staff should be organized on a temporary basis to provide the fundamental information and research required by the Higher Commission. The technical secretariat could function under the general guidelines of the Joint Committee. Highly qualified technicians could be recruited from organizations such as Government ministries, universities,

industry, labor organizations, and consulting firms. However, recruitment should not be merely on the basis of balanced representation of vested interest groups (as important as this may be in some instances) but the selection of staff with outstanding technical qualifications.

The "Joint Housing Team" could be a fruitful model to follow in organizing a technical secretariat.^{6/} The terms of reference of the temporary secretariat concerning vocational training should include:

- (1) Compilation and analysis of all data relevant to the vocational training system;
- (2) Assessment of the effectiveness of the present vocational training system;
- (3) Assessment of the capacity of the present vocational structure to carry out these priorities;
- (4) Identification of policy and program alternatives.

(Similar, but broader, terms of reference covering general manpower policy should also be established.)

Support for the secretariat might be obtained from foreign and international donors. Such assistance might consist of financial support for the temporary secretariat and the provision of consultants

6/ See, Immediate Action Proposals for Housing in Egypt, The Joint Housing Team, Ministry of Housing and Reconstruction, Ministry of Planning, ARE, with the cooperation of the Office of Housing, USAID, June 1976. Consideration might also be given to the kind of integrated analysis of manpower conducted by the International Labor Organization in a number of countries, such as the Sudan.

in selected areas. Following the final report of the temporary secretariat, the need for and nature of a permanent technical secretariat to service the needs of the Higher Council and the Joint Committee could be considered.

✓ Second, on the basis of the research and findings of the secretariat staff, the Higher Council should reassess the Egyptian manpower situation and prepare a clear statement of policy objectives, with special reference to vocational training. Recommendations on the organization of manpower planning and implementation, with emphasis on vocational training, should also be made. (Later in this report the formulation of manpower policy is discussed in more detail.)

✓ Third, a comprehensive manpower-vocational training plan should be prepared, including mechanisms for its implementation. The exact division of responsibility for the preparation of this plan should be specified by the Higher Council. (Later in this report the organization of manpower planning and vocational training is discussed in more detail.)

✓ Finally, the ability to implement specific manpower programs should be assessed and, where necessary, strengthened. The achievement of policy objectives depends ultimately on the capacity to implement plans. Although the present report emphasized the role of manpower information and planning, this focus is not intended to minimize the importance of assuring the capacity of operating agencies to implement specific programs. For example, strengthening the role of the Ministry of Manpower and

Vocational Training in matching men and jobs should be an important part of any comprehensive plan to improve the allocation and utilization of Egypt's human resources.

Nor should the general strategy suggested above imply that all project implementation should await the completion of the review of manpower problems, the setting of manpower policy objectives, and the drawing up of a comprehensive manpower plan. On the contrary, because of the urgent manpower needs, work must proceed as scheduled on already identified high-priority projects, such as the education project being launched in collaboration with the World Bank. However, the preparation of a longer-term strategy should be completed as quickly as possible before development of the vocational training system proceeds to the point where modification is difficult.

B. Formulation of a Comprehensive Manpower Policy.

The Ministry of Planning (with the support of the Institute of National Planning) has an obvious responsibility for the planning and coordination of manpower priorities. The Ministry of Manpower and Vocational Training also has been given substantial responsibilities for planning and coordinating vocational training with the needs of the labor market. The newly created Higher Council on Manpower and Vocational Training (and the associated Joint Committee) has been given sweeping planning and coordination responsibilities. A new interministerial committee, under the chairmanship of the Ministry of Education, will also be charged with coordinating vocational training with manpower

needs. In addition, several other organizations have been given responsibility for various aspects of manpower planning. As a result of the number of organizations involved in manpower planning and coordination, there seems to be some uncertainty as to how responsibility should be shared among those agencies. Development and implementation of effective manpower policy is not an easy task in the Arab Republic of Egypt at the present time for a number of reasons, including changing economic institutions (e.g., the shift to the "Open Door Policy"), limited financial resources, an uncertain political situation in the region, and a difficult world economic situation. The labor market itself presents many problems, including, for example, significant (if by some standards relatively low) open unemployment, substantial underemployment (seasonal in rural areas and low productivity in urban areas), emigration of many skilled workers, rapidly rising wages, serious skill imbalances (e.g., too many general secondary graduates and not enough technicians and skilled workers -- a situation which contributes to low productivity and bottlenecks), a high illiteracy rate, a rapidly growing labor force requiring massive job creation, substantial geographic shifts in the distribution of the labor force, and a lack of adequate manpower data.

^{7/} For example, the Ministry of Education estimates that while the desired ratio of engineers is 1:4, the actual training in Egypt is 2:1. Existing institutions turn out only 1,800 technicians annually compared with an estimated need of 8,000. See "Project of Institutes for Technician and Instructors Training for Industrial Development," Ministry of Education, Technical Education (Undated).

The need to formulate a carefully considered human resources development and utilization strategy to attack these problems has been recognized by many analysts. Indeed, Presidential Decree 795 of 1976, which establishes the Higher Council for Manpower and Vocational Training, was in response to this need. Up to the present time, however, there has been only limited success in formulating integrated manpower and training objectives. The Ministries of Planning and Manpower and Vocational Training and various Committees (such as the Higher Council for Training ^{8/} have not been able to develop and implement an effective manpower plan. As a result, program planners in organizations responsible for vocational training has been unable to relate training activities to specific development objectives, thus diminishing the contribution of vocational training to the achievement of national economic objectives.

It is not the objective of this report to suggest specific manpower policies; indeed, it would be presumptive of the advisor to do so on the basis of a brief visit to Egypt. Nevertheless, there are obviously many complex problems that will require careful consideration by the Higher Council for Manpower and Vocational Training. What is urgently required from the perspective of the advisor's terms of reference is the adoption of specific policies that can guide those responsible for planning and implementing the vocational training system. The quality of staff work available to the Higher Council will have a significant impact on the quality of the policies eventually promulgated. Most of the technical resources required exist in the Arab Republic of Egypt, but some financial and technical assistance might be valuable in strengthening the technical staff servicing the Higher Council.

^{8/} Cancelled by Presidential Decree 795 of 1976.

C. Planning Structure and Coordination.

A major obstacle hindering the development of a more cost-effective vocational training system is the extremely decentralized structure of the existing training system. Technical education and vocational training are the responsibility of the following ministries:

- ✓ = Principal Ones*
- ✓ Education
 - ✓ Higher Education
 - ✓ Industry and Mineral Resources
 - ✓ Housing and Reconstruction
 - Transportation
 - Health
 - Ministry of Irrigation
 - Communications
 - Tourism
 - Agriculture
 - Social Affairs
 - Manpower and Vocational Training

Many firms also train young apprentices informally on the job.^{9/} The military services have extensive training programs as well.

Such a structure makes planning and coordination of vocational training difficult, limits flexibility, and makes the system's responsiveness to development objectives uncertain. The complex organization of vocational training hinders the sharing of information, experience and resources among the various training agencies. In addition, since occupational standards (and appropriate trade tests) are not adequate in the Arab Republic of Egypt, the decentralized training structure makes placement activities, cost comparisons among alternative training methods, and detailed assessment of occupational supply more difficult.

^{9/} The term apprenticeship has two senses in Egypt. It refers to trainees in the three-year program (one year institutional plus two years combination of work release study and training on the job) of the Ministry of Industry and Mineral Resources. It also is used to describe generally younger boys (usually related to present workers) who are trained informally on the job.

Without a central source of training expertise to consult, individual ministries responsible for vocational training activities do not adequately identify opportunities for using nontraditional training methods. There is some evidence that, as a result, training tends to become highly institutionalized^{10/} and less responsive to changing needs of the labor market.

The Ministry of Planning has not been successful in integrating vocational training into a comprehensive manpower policy. The Ministry of Manpower has not been able to act effectively as an intermediary between vocational training and the labor market. Nor have the inter-agency commissions that have been established over the years contributed significantly to the coordination of manpower policy and vocational training.

The organization of vocational training will, therefore, need to be assessed by the Higher Council. While not wishing to anticipate specific conclusions of the Council, it seems obvious that dramatic changes are required in the present vocational planning-implementation system. Most urgently required is the capacity to consider vocational training problems in a broad context and not be frozen into traditional solutions by rigid ministerial structures. It is unlikely that adequate vocational planning

^{10/} Several observers expressed the belief that there is too strong a bias towards institutional vocational training at the present time in Egypt, especially at the secondary level. Based on his limited experience in Egypt, the advisor is not prepared to draw any firm conclusions as to the validity of this belief, but does suggest that, at the planning stage of project formulation, more attention be given to examination of alternatives involving on-the-job training, especially for vocational levels between prevocational and technician training.

and coordination can be achieved exclusively through interministerial committees (as important as such committees can be). What seems necessary is a central authority capable of translating manpower policy into specific vocational training objectives. The advisor feels this can only be achieved through a new central training agency independent of individual ministries. Such an agency need not necessarily engage in training itself, but it should as a minimum be responsible for program planning, research, evaluation, and, most importantly, allocation of the vocational training budget. It should have responsibility for both institutional and on-the-job forms of vocational training. It should have an advisory body representing employers, workers, and the military, as well as administrative officers of the various ministries concerned with vocational training. In principle, many of these responsibilities have been assigned to the Ministry of Manpower and Vocational Training, but this ministry is not well placed to implement this responsibility. It does, however, have a vital role to play in labor market analysis, establishment of trade tests, job placement, and a number of other areas impacting on the operation of the labor market.

It is clear that vocational training must be more closely coordinated with labor market requirements. This not only means the development of better estimates of future manpower requirements, but also improved information on the kinds of skills and attitudes employers desire of training graduates. One means of insuring such coordination is to move

specific skill training closer to the productive process by making greater use of industrial establishments as training agents. ^{11/ *}

Another means would be to increase the dialogue between employers and trainers through advisory committees, returning instructors to industry for working sabbaticals, using experienced workers from industry as occasional lecturers or demonstrators in vocational schools; and encouraging more frequent visits by training administrators to employing establishments.

✓ Technical assistance could be helpful in two ways in strengthening the structure of the vocational training system. First, through providing the opportunity for Egyptian planners and managers to visit countries that have attempted various solutions to coordinating vocational training. Technical assistance also could be valuable in helping with the design of an appropriate vocational training management structure.

D. The Manpower Information Base.

Another major obstacle to more effective planning and operation of the vocational training system is the inadequacy of manpower data and analysis available to policy makers and managers. This is true of both

(a) general manpower data showing current and projected labor market trends (e.g., employment, unemployment), the structure of employment in various occupations, and skill requirements in different occupations; and

11/ This could also have a significant positive impact on training costs. It would not, of course, eliminate the need for more or less traditional institutional training which would still be important for supplementary training, skill upgrading, and technician training. ^{SEE FOOTNOTE, *}

PAGE 15

(b) data relating to the control and management of vocational training and other manpower organizations (e.g., labor registration offices).

Policy makers, planners, and managers need access to both kinds of data, but the first type will be of more importance to policy makers and planners, while the second type will be of special significance to managers. Analysts frequently are required to draw upon both kinds of data in studying a problem. The first kind of data helps answer questions concerning the number of individuals that should be trained in various skills, what employers expect of training graduates, and the impact of vocational training on the labor market. The second kind of data provides information on how specific vocational training needs can best be met (e.g., through on-the-job training or through institutional training or some combination of these), and helps measure how efficiently training in specific skills is being provided (i.e., how well resources are being utilized). In numerous problem areas analysts intermingle both kinds of data.

(1) General purpose data. In Egypt, the Central Authority for Mobilization and Statistics has the principal responsibility for collecting general statistical data. To a lesser extent, the Ministry of Manpower and Vocational Training is also responsible for general labor market data.^{12/} The Ministry of Industry and Mineral Resources

^{12/} The Ministry of Manpower is charged with important labor market data collection responsibilities concerning the gathering of training requirements. See Presidential Decree No. 757 of 1972 providing for the responsibilities and organization of the Ministry of Manpower.

and the Institute of National Planning, as well as a few other agencies, also collect labor market data from time to time.

There are several weaknesses in the general manpower information system. ^{13/} Published labor market data are not current. Data are not published in adequate detail to help policy makers and planners. Technical descriptions of concepts, definitions, and data collection techniques (including questionnaires) are not routinely published. Approximate margins of error of data are not available to users. Little or no analysis or interpretation accompanies published data. Little planning seems to be underway for analytical exploitation of the recent census. It appears in many instances that the problem is not so much a lack of data as its unavailability or the unawareness of its existence by potential users. In general, there seems to be inadequate concern on the part of data collectors with the needs of data users, i.e., there does not appear to be a philosophy of client-oriented data collection.

A number of actions need to be taken to strengthen the general manpower information system. First, the system needs to be made more responsive to the needs of data users. One means of doing this would

13/ For example, at the time of the advisor's assignment in Cairo, the latest data from the labor force survey (household collection) were for May 1974. Latest employment data collected directly from employing establishments were for 1972. The latest full census available is 1960 (updated in 1966 on the basis of a sample survey), although a recent census is now being tabulated.

be the formation of statistical user groups to advise the Central Authority for Mobilization and Statistics and other data collectors periodically of users' information needs. Such a collaborative effort between users and producers could serve as a means of reviewing the manpower information system and preparing a general plan for its improvement. The Arab Republic of Egypt may wish to consider sponsoring a statistical users' conference to assist users in understanding the Government's statistical programs.

✓ More emphasis should be placed on the development, publishing and dissemination of technical information concerning concepts, definitions, collection methods, and approximate error margins.

✓ Data collectors should attempt to build consistent time series wherever possible in contrast to irregular surveys.

✓ Much greater reliance can be placed on sampling as a means of reducing costs, and speeding the availability of data.

✓ An effort should be made to obtain better information on the probable demand for Egyptian workers by other countries. The planning of vocational training programs is presently made difficult by the absence of adequate information on the movement of Egyptian workers to other countries (especially Saudi Arabia, Libya, and the Gulf States). Little is known about the work experience of expatriate Egyptians, or future needs of the "importing" countries. It is, of course, difficult for Egypt (or any other individual country) to collect and analyze such data, and,

therefore, an effort should be made to develop such information on an international cooperative basis.^{14/}

✓ Finally, the users of data need to be helped to interpret statistical evidence. This could be achieved through holding short seminars and preparing guides for statistical users. If decision makers are not able to use statistical findings in solving problems, the substantial cost of collecting data will be wasted.

(2) Management information. While the principal objective of general manpower information as related to vocational training is to orient vocational training programs to present and future labor market needs, the purpose of management data is to improve the control and management of vocational training units. It is made up, in large part, of administrative data internal to each operating organization. Better management information can make an important contribution to increasing the cost effectiveness of the vocational training system. In order to maximize the impact of the system on the labor market, managers must be in a position to decide what kinds of training can best achieve objectives, to evaluate the efficiency with which training resources are being used, and to evaluate the work experience of training program graduates. This requires a continuing flow of prompt, accurate, relevant and well-analyzed information (both statistical and non-statistical) to managers. When

^{14/} The International Labor Organization is undertaking two relevant projects, one of which will estimate the volume and characteristics of future labor demand in the Arab OPEC countries, and the second which will develop a model of planned migration in response to the projected demand.

such information is carefully analyzed in combination with general economic and manpower data, it can indicate to managers where decisions need to be made and give some indication of the implications of alternative decisions. Present management information systems in Egypt seem inadequately designed to meet the needs of decision makers. Traditional accounting data is collected without sufficient effort to analyze it in ways useful to managers. In the past, a number of courses have been offered for employers by the Ministry of Industry and Mineral Resources in the design and implementation of management information systems. These courses need to be revived and expanded. In addition, similar courses should be designed to meet the needs of government administrators.

One of the principal information gaps faced by Egyptian managers of vocational training programs concerns the work experience of training graduates. Managers need to know how well the graduates of their programs have met the needs of the labor market. Was the training they received relevant to employers' needs? Did they have adequate orientation to the world of work? What were the specific strengths and weaknesses in their training? How do graduates and employers evaluate the training graduates received? Several ministries currently carry out follow-up activities related to their training, but these studies are generally occasional, limited in scope, and restricted to the needs of the ministry conducting the follow-up (e.g., the Ministry of Industry and Mineral Resources follows up its graduates primarily to determine whether they received the required numbers of supplementary training hours required

by their apprenticeship program). However, at the present time there are no adequate statistical programs to obtain good follow-up information.

The lack of adequate statistical data is made worse by the limited personal contact between training institutes and graduates and employers. Inspectors and other personnel seem seldom to visit employers and few employer advisory committees function regularly. This situation is further worsened by the fact that in some skills few vocational instructors have extensive experience in industry.

What is required, therefore, is a means of continuing assessment of the work experience of graduates of vocational training programs at reasonable cost. Several steps could be taken to build such a capacity.

First, research should be undertaken to examine the most feasible and economic methods of conducting follow-up surveys in the Egyptian setting. Statistical tracer surveys can be very expensive and the quality of data collected through them depends, in large part, on how well the survey takes account of cultural and institutional factors. Therefore, effective tracer surveys require careful testing before launching on a large scale. A number of pilot tracer surveys should be undertaken as soon as possible and used to develop effective follow-up survey procedures appropriate for Egypt. Development of good sampling designs could substantially reduce cost as well as increase accuracy of such surveys.

Second, based on the findings from the pilot surveys, a comprehensive sample survey of employers covering graduates of all vocational training programs should be conducted. Such a survey has several advantages. Cost is one advantage, since collection costs would be lower than tracing

individual graduates. Another advantage is that a comprehensive tracer sample survey of employers could provide data on the comparability of various training programs. The findings of such a survey should be invaluable in designing a more cost-effective vocational training system, and, therefore, should be completed in time to assist the proposed temporary technical secretariat to the Higher Council for Manpower and Vocational Training.

Third, a permanent central capacity for conducting tracer surveys should be established. Preferably such a capacity should be lodged in the central vocational training agency proposed by this advisor, but it could also function in an existing government agency, in a university, or even as an independent organization.

Such an organization's programs could take a number of forms. For example, comprehensive surveys could be conducted annually and the results analyzed by skill, training institution, as well as other variables. Or, if it is preferred that surveys be conducted directly by individual institutions, the "central capacity" could assist training institutions in sample design and the techniques of follow-up surveying. This advisor prefers an annual comprehensive survey based on samples of employers supplemented by institution-sponsored surveys of graduates conducted jointly by the "central capacity" and individual training institutes. However, the exact nature of the recurrent sampling is less important than the requirement that it be done regularly and with statistical accuracy.

There are also many non-statistical means of increasing the flow of information between trainer and employers; for example, advisory committees, giving instructors working sabbaticals in industry, obtaining the services of skilled workers as occasional lecturers, etc., in training institutes.

(3) Other Information Problems: Manpower Planning at the Establishment Level. The carrying out of effective manpower policy at the establishment level depends on the employer's ability to analyze and project his manpower requirements in the context of national objectives.^{15/} In addition, the quality of manpower data derived from surveys of employers depends on the ability of employers to respond to requests for information. For example, national estimates of future manpower requirements based on employers' estimates are only as good as employers' ability to estimate their individual requirements. It is, of course, true that the employer's ability to plan his manpower needs depends, in large part, on the availability of good sectorial plans to which he can relate his own manpower planning. However, while awaiting better sectorial plans, work profitably could begin now on improving employers' techniques of manpower planning, through conducting brief courses for key industry personnel concerning techniques of manpower planning at the

^{15/} To the extent that employment levels in establishments are determined by labor supply, objective assessment of labor demand is of limited value. But even in such circumstances, analysis of realistic staffing requirements allow analysis of the difference between actual staffing patterns and technical requirements.

establishment level. Manuals and other materials could be prepared to aid employers in manpower planning. Finally, consultants and technical assistance might be made available to employers as required. The Institute of National Planning, in collaboration with the Productivity and Management Centers, should be able to provide these services if given necessary resources.

(a) Professional information exchange among vocational trainers. Little exchange seems to take place among training personnel of the various training organizations. In many instances it seems that exchange of professional information is even inadequate among training personnel working in different training schools operated by the same ministry.

An important means of encouraging the exchange of information and increasing the professional competence of vocational trainers would be the creation of a professional vocational training association. Such an association could include individuals interested in related fields such as vocational guidance. The association could disseminate general professional information concerning vocational training techniques and the experience of Egyptian trainers.

(b) Vocational guidance information. Considerable concern was expressed to the advisor about unrealistic employment expectations of young people, and the "overvaluing" of formal academic education. This largely reflects traditional attitudes and only in part a rational assessment of economic and social rewards. Better career guidance

information alone will not be sufficient to change students' (and parents') evaluations of alternative employment opportunities. But the preparation of career information and its dissemination using film slides, tape cassettes, and other modern information delivery techniques could make an important contribution to improving young people's awareness of emerging opportunities in the labor market.

(4) Applied analysis of manpower data. Much greater emphasis needs to be placed on the analysis and interpretation of manpower and vocational training data. The effective utilization of information requires that data be carefully analyzed and presented to decision makers in a form useable to them. A number of things need to be done. Much greater effort is required on the part of analysts to work closely with decision makers to ascertain their specific requirements. In addition, stronger analysis capacity has to be developed in operating agencies such as the Ministries of Education, ^{16/} Industry and Mineral Resources, and Housing and Reconstruction, to analyze problems of special interest to them. The Joint Committee for Planning Manpower and Training (or other appropriate organization) could serve as an important forum to keep individual agencies informed as to the work of their colleagues and, thus, to make research mutually supporting wherever possible. The capacity

16/ Under the World Bank Education Project, provision is made for 12 months of technical assistance to develop estimates of long-term manpower needs, and it has been agreed that such estimates will be ready by the end of the project (approximately 2½ years hence). However, the preparation of such estimates will not reduce the need to strengthen the general information and analysis capacity of the Ministry. Long-term estimates of future manpower needs are a necessary first approximation but, because they can, at best, only be approximations, a current flow of well-designed manpower information is required to let decision makers know when circumstances change as well as when targets are not being met.

of the Ministries of Planning and Manpower and Vocational Training to analyze general manpower and labor market trends must be strengthened. In addition, there needs to be a central source for the analysis of vocational training (preferably in a new central training organization if it were to be created) since many vocational training problems are common to all training agencies and because some problems transcend the interest of individual organizations.

Certainly Egypt possesses a considerable number of trained economists and other professionals to undertake the required analysis. Some technical assistance might be helpful, however, in designing applied manpower research programs, techniques of applied manpower analysis, and helping Egyptian technicians identify the needs of decision makers.

III.

Construction Labor Requirements.

Construction, especially for reconstruction of the Canal Zone and for improvement of the housing stock, is expected to be a high priority in the Arab Republic of Egypt during the immediate years ahead. A potential bottleneck in achieving construction targets will be the lack of construction skills. Not only must Egypt meet its own construction labor needs, but it must also contribute to the labor supply of other countries experiencing construction booms, e.g., Libya and Saudi Arabia. The high demand for construction workers is reflected in accelerating

wages and skill shortages.^{17/}

The Ministry of Housing and Reconstruction hopes to meet the need for construction workers through a large-scale training program. Part of the terms of reference of the advisor was to "review the manpower needs analysis section of the MOHAR Training Agency Project proposal to determine its adequacy for project planning." However, the only MOHAR document concerning the projected training activities available to the advisor was "MOHAR Training Agency Project IV," dated December 1975. This document contains little analysis of manpower needs. The MOHAR estimates that approximately 300,000 additional construction workers need to be trained during the 1976-80 period. The Ministry assumes that a large percentage of the new workers will be trained in the projected Ministry centers (or in second shifts of Ministry of Education Centers), and relatively little emphasis will be placed on the capacity of employers to train additional workers. These estimates are recognized by the MOHAR to be approximations based on fragmentary evidence, and subject to

^{17/} The advisor was told that shortages of skilled construction labor has resulted in the slowing of some construction projects and the importation of foreign construction workers. The USAID/ARE Joint Housing Team reported:

There is a general shortage of construction labor, particularly in the skilled categories. Many craftsmen have left, attracted by the higher wages offered in the surrounding oil-rich countries. The shortage triggered a rapid increase in local wage rates that was compounded in the past several years by the magnitude of the reconstruction effort and the premiums offered to workers in the reconstruction zones. Immediate Action Proposals for Housing in Egypt, 1976, p. 54. Also see the Statistical Appendix of this report, Table VI-1, page 73.

modification as better information and analysis become available.

The estimates are primarily based on correlations between past construction experience of the MOHAR relating employment to construction levels. Such techniques yield net increases in labor requirements only and do not allow for replacement needs, changes in construction techniques, the composition of construction, and changes in the relative prices of factor inputs. The Ministry of Housing and Reconstruction document frankly recognizes the approximate nature of the underlying manpower needs analysis. The World Bank, which is financing 20 of the projected 63 MOHAR training centers, also recognizes the need for better analysis and has included provisions for technical assistance to strengthen the Ministry's data base in its education project agreement with the Egyptian Government. However, even more emphasis needs to be placed on the building of adequate applied analysis capacity to assist decision makers in interpreting data.

In a rapidly changing situation such as that which characterizes the construction industry in Egypt at the present time (and with a poor data base and with large numbers of workers leaving for other countries), it will always be difficult to estimate future labor requirements with a comfortable degree of confidence. This implies the requirement for a staged expansion of MOHAR training programs with expansion based on results as measured by its impact on the labor market.

What is crucial in such a situation is that projections be treated as necessary first approximations and that a good information system be established to allow managers to detect changes in estimated trends as quickly as possible. If managers of the training system are able to

react quickly, the inevitable errors associated with employment forecasting will be minimized. For example, there is some evidence that a significant percentage of the graduates of the Ministry's training centers do not find work in the building trades. If true, this would need to be measured, analyzed, and management alternatives identified. However, without an adequate information system (especially follow-up data) the seriousness of the situation and, thus, the need for management decisions will be difficult to ascertain. Therefore, substantial attention needs to be given to strengthening the Ministry's ability to collect relevant data on a continuing basis and analyze it in a way to meet the needs of managers of the construction training programs.

IV.

Summary of Principal Recommendations.

1. A plan of action should be agreed upon as quickly as possible for strengthening the Arab Republic of Egypt's capacity to plan and implement manpower and vocational training policies and programs. This strategy should be promulgated by the newly-created Higher Council for Manpower and Vocational Training (and its associated Joint Committee for Planning Manpower and Training). The plan of action should include provisions for establishing strong technical support to the Higher Council in carrying out a thorough review of Egyptian manpower problems, the exploration of viable alternatives to solve them, and the capacity of present organizations to plan and implement the required solutions. Based on these findings, the Higher Council should formulate general

manpower objectives and assign responsibility for their implementation. The Higher Council should continue to monitor and evaluate the execution of general manpower policies. ^{adequate} Adequate technical support for the Council will require the establishment of a strong secretariat. The secretariat should have a temporary mandate and be made up of highly-qualified technicians from both in and out of government. At the completion of the technical secretariat's review of the manpower situation for the Higher Council, the need for and nature of a permanent technical secretariat should be studied.

2. Coordination of the present decentralized structure of vocational training needs to be brought under the control of a single authority.

Such an authority could take a number of different forms; however, it should, as a minimum, have responsibility for translating policy directives of the Higher Council into specific vocational training programs, monitoring and evaluating the implementation of these programs, making periodic progress reports to the Higher Council, conducting research and analysis relevant to vocational training, and, most importantly, allocating vocational training financial resources among the various training agencies.

3. A much greater effort should be made to relate vocational training to the requirements of employers. This might be accomplished through better labor market research; more emphasis on on-the-job training; assignment of vocational teachers to industrial establishments to update their work experience; the use of industrial craftsmen in

INDEPENDENT
CENTRAL TRAINING AGENCY

the vocational training system as teachers, monitors, and/or demonstrators; establishment of management-labor advisory committees; and more frequent visits by administrators to industrial establishments.

4. The capacity of the Ministry of Manpower and Vocational Training should be strengthened in several areas. The Ministry's capacity to collect, process, and analyze labor market data needs to be improved. Because the regional registration offices of the Ministry could ^{play} pay a strategic role in improving labor market adjustments, an effort should be made to improve their operation. This should include programs to increase the Ministry's ability to prepare better occupational definitions and standards, to administer trade tests, to develop and use guidance materials, and to carry out placement activities.

5. A number of actions should be taken to improve the manpower information system. First, data collecting agencies need to develop a philosophy of client-oriented data collection. Efforts to make the system more responsive to the needs of data users might include the holding of periodic statistical user conferences, in which data programs are explained and users make their needs known. In addition, statistical advisory committees could be established for each of the major data collecting agencies (or by subject area). Data collectors should work more closely with the university community. More emphasis should be given to publishing technical notes to assist data users in interpreting statistical sources. Much greater reliance should be made on sampling techniques to improve the accuracy, timeliness, and cost effectiveness of data collection. More attention should be given to strengthening

the management information systems of vocational training organizations and industrial establishments.

Although the principal responsibility for improving the manpower information system rests with the Central Authority for Mobilization and Statistics, several other agencies have important rôles to play in this endeavor. For example, the Ministry of Management and the Ministry of Industry and Mineral Resources (through its Management and Productivity Centers) could make a major contribution in strengthening of management information systems. Or, for example, university statisticians could provide helpful advice on sampling techniques, data processing, and preparation of technical notes.

6. The Arab Republic of Egypt should cooperate with appropriate regional agencies in developing better estimates of regional manpower supply and demand for the region. Without such data, it will be difficult to anticipate future demands on the Egyptian labor market. There are presently two International Labor Organization projects underway to develop better information in this area; however, other international agencies may also be able to make a contribution in this field.

7. The development of adequate follow-up surveying should be among the highest priorities in strengthening the information base. This should be done in several stages. First, a series of pilot sample surveys should be conducted in order to develop and test tracer techniques appropriate for the Egyptian situation. In addition to tracer surveys of individual programs, an effort should be made to conduct comprehensive sample surveys of establishments in order to allow comparative analysis of the various training programs, and estimate the total impact of vocational training on the employment market. Finally, a permanent

capacity should be developed capable of conducting periodic comprehensive surveys and assisting individual training agencies to conduct surveys of particular interest to

8. Much greater emphasis must be placed on the analysis of manpower and related data in a form relevant to the needs of decision makers. One immediate requirement is the development of better estimates of future manpower requirements. Improved analysis of labor productivity is also required.

There needs to be a mutually supporting network of analysis. No one agency can perform all of the analysis required by the different perspectives and needs of the various agencies. There should be a central focus on broad manpower problems, most obviously in the Ministry of Planning. There also need to be strong analysis capacities in agencies such as Industry and Mineral Resources, Education, Manpower and Vocational Training, and Housing and Reconstruction, and the proposed central vocational training authority (item 3 above) -- not to duplicate the research of the Ministry of Planning, but to focus on the specific problems of the individual agencies. A coordinating mechanism will be required to link the research of all these organizations; for example, a working committee of "research directors" chaired by the Ministry of Planning or other appropriate agency.

9. The capacity of employers to plan their manpower requirements at the establishment level needs to be strengthened, through a series of short seminars and the preparation of manuals.

10. A national association of individuals concerned with vocational training should be created to increase the exchange of professional information and provide means of continuing the education of workers in the vocational training field.

11. A program of preparation of occupational guidance materials should be inaugurated to improve the understanding of students, teachers, and parents of the changing employment opportunities available to young workers. Such material should be designed for distribution via television, radio, tape cassettes, as well as written material.

APPENDIX

Principal Contacts

Dr. Salah Hamed
American University Cairo

Ebada Sarhan
Director, Institute of Statistics
Cairo University

Dr. Abdel Megid El Abd
(Former Undersecretary, Ministry of Manpower)
(Former Director of Training in Army)
Director, Human Resources Development Center

Mustapha Ahmed
Undersecretary of Ministry of Manpower

Abdel Raouf Farag
Undersecretary of Planning

M. A. Rousndy
Director General of Productivity
and Vocational Training Department
Ministry of Industries

Engineer A. El Kholy
General Controller for Technical
Information Services

~~A. N. Akaf~~ (listed on next page)
~~Head of Follow-up Section~~
~~Ministry of Industries~~

Dr. Iman Salim
Demographic Center

Andrew Payne
British Council

J. S. Trives
UNESCO Project Coordinator
Technical Teacher Training Institute
Kubba Cairo

Dr. Ismail Sabry Abdullah
Director, Institute of Planning

Dr. Mongi
Chief of Manpower Section
Institute of Planning

Dr. Mahmoud Omar
Expert, Manpower and Productivity Planning
Institute of Planning

Mrs. Ragea El Askalaay
Department of Statistics
Ministry of Manpower and Training

Mr. Housny El Khateeb
Department of Manpower Research
Ministry of Manpower and Training

Mr. Atta Mohamed El Eliary
General Director of Vocational Training
Planning MOM&T

Medhat Mohamed Aly Gad
Vocational Guidance Director MOM&T

Eng. Ahmed El Kousy
Ministry of Manpower

Dr. Eng. Mohammed Kamel Elewa
Department of Vocational Training Planning

Kamal R. Mazloun
Deputy Director General
Department of Statistics
MOM&T

Mr. Hasem
General Director of Statistics
Ministry of Education

Dr. Ibrahim Abdel Hakem
Undersecretary for the University of Industry
Production Efficiency and Vocational Training
Affairs
Ministry of Industries

Prof. Mohamed Mustapha El Alaly
Advisor on Technical Education
Ministry of Education Cairo
(Prof. and Head of Mechanical Engineering
Department Eln Shams University, Cairo)

Tag El Dia Safwat
Director, General Manpower
Structure Studies & Research

Nazih Daif
(Former Minister of Finance)

✓ Mr. Maragy
Program Representative
International Labor Organization

Mr. Samuel Bunkor
Resident Representative
Ford Foundation

✓ Eng. Fahmy Tolba Hassan
President
Training Organization
Ministry of Housing & Reconstruction

Hasan El Sahar
Architect, Ministry of Housing & Reconstruction

Dipl: Eng. Ahmed Amin Abdel Aziz
Chairman
The Industrial & Engineering Enterprise Co.

Dr. Eng. Ahmed Tawfik
Director General
Federation of Egyptian Industries

Eng. Hassan Morsy
Ministry of Housing & Reconstruction

Eng. Mohsen Rady
Chairman
Nasr Forging Industry

Abdel Moneim Akef
Head of Follow-up Section
Production & Vocational Training Department
Ministry of Industry

Eng. Ayoub Abdel Mesih Risk
General Manager for Technical Affairs
Nile Repair Automotive Co.
Abassia, Cairo

Eng. Sidki Soliman
(Former Minister of Energy)
(Former Prime Minister)

Dr. Salah El Homosany
Minister of Social Affairs

Dr. Salah El Abd
Senior Undersecretary for Rural Department
Ministry of Agriculture

Ibrahim Mohamed El Shazley
General Director of Pre-vocational Training
Ministry of Social Affairs

Mohamed Ahmed Mashoor
Mechanical Engineer
MOHAR

Mohamed El Touk
Accountant
MOHAR

Ismail Gebril Mohamed
Director
Ismailia Training Center (MOHAR)

Usry Kansowa
Deputy Minister
Ministry of Administrative Development

Also visited were six Vocational Training Institutions of the
following Ministries:

Education
Industry and Mineral Resources
Social Affairs
Housing and Reconstruction