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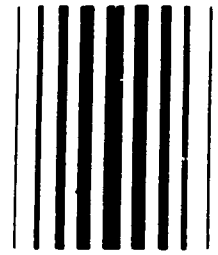

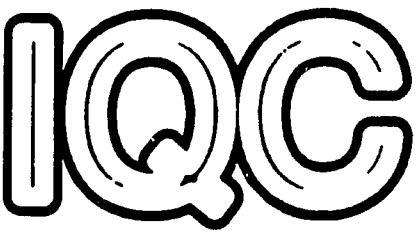

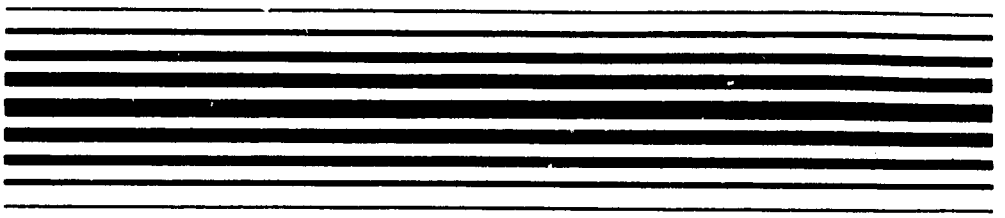

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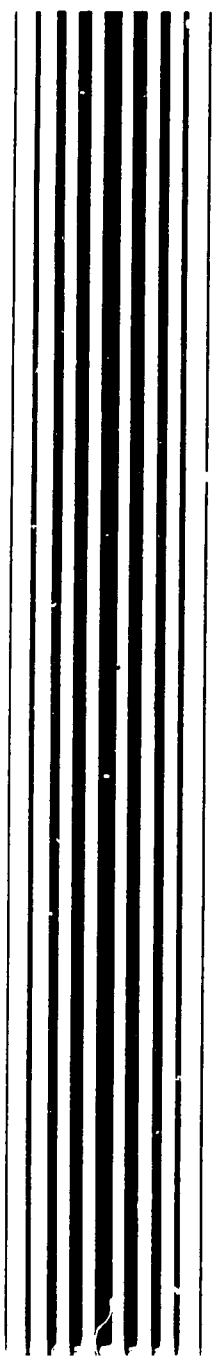

# An Assessment of Vocational and Technical Education in Jordan

# INTERIM REPORT


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**Letter of Transmittal**

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Ref. Contract no. PDC-0085-I-00-9061-00
(Evaluation IQC)
February 20, 1991

Dear Mr. MacDonald:

On behalf of the Academy for Educational Development, I am pleased to submit an "Interim Report for an Assessment of Vocational and Technical Education in Jordan" in response to your official request dated December 27, 1990. Our understanding is that this completes our obligations for the first phase of the project.

It should be noted that since the team expected to return to Jordan and no interim report was specified, they brought very few documents back to the United States. As a result, the Interim Report was prepared primarily relying on field notes.

It is our hope that the Iraqi-Kuwati crisis will soon be resolved and that the consultant team will be able to return to Jordan and carry out the second phase of the project. We will look forward to that opportunity.

Sincerely yours,

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**APPRECIATION**

The consultant team wishes to express its sincere thanks to Dr. Victor Billeh, President of the National Center for Educational Research and Development and his staff for their considerable help and support during the team's stay in Jordan. The assistance provided by Dr. Ammar Kaylani, who managed the local support efforts was especially appreciated. Dr. Fathi Arouri and his team, who assisted in developing and then conducting the survey of employers, was of critical importance in the data gathering process and their efforts are to be commended. Finally, our sincere appreciation to Mr. Barry MacDonald of USAID/J for his support during an extremely busy period for the AID Mission with the beginning of the Iraqi-Kuwati crisis.

Dr. William S. Reynolds
Team Leader

## BACKGROUND

### A. Project Objectives

The major purposes of the project were to (1) assess the effectiveness of the vocational and technical education sector in meeting the demands for skilled labor, (2) examine future skilled labor demand for Jordan and the region and the potential impact on the vocational and technical education system, and (3) determine what improvements need to be made in the system and how they could be implemented so that future labor demand can be met (See Appendix A for Scope of Work).

### B. Methodology

The assessment was to be conducted in two segments, Phase I was concerned with data collection and familiarization with the three training systems the study was to address; i.e., the vocational steams of the Jordanian high schools, the Vocational Training Corporation (VTC), and the technical programs of the community college system. Concurrently, an assessment of skilled manpower needs was to be initiated (See Appendix B for visits of the team during Phase I). Prior to the consultant team's departure from the United States, they were provided a variety of descriptive documents and reports to study so that they would have some knowledge of the systems they were to review. In Jordan, two counterparts were provided (through and AID subcontract) to assist the team in gathering data during the two weeks the team was on site for Phase I. The team also developed the instruments for surveying a sample of industrial employers and identified additional data needs for the counterparts to pursue prior to the team's return for the three weeks of Phase II. During Phase II, the data was to be analyzed, gaps identified and filled and the draft final report prepared for discussion, review and revision before the team departed.

The team's initial visit to Jordan for Phase I was made from August 5-19, 1990, during which the Iraqi-Kuwati crisis developed. It should be noted that the Team's field visits were significantly reduced due to the crisis. The result was a very limited opportunity to assess facilities, equipment, programs, students, and staff. In light of the situation, Phase II (scheduled for late October) was put on hold and it was decided by AID/Jordan that an interim report should be prepared since there could be an extensive delay in implementing the second segment of the project.

Specifically, AID/J requested that the team produce two products:

1) a formal interim report from the team which lays out any preliminary findings and the scope for the second phase.

2) a formal advice from the team to the Jordanian researchers on the quality of their work to date and how to improve it, and advice on what further actions they should take to complete their task.

## C. Interim Report

The report that follows was constructed to provide an overview of the findings of each consultant along with their preliminary recommendations. It should be kept in mind that the team prepared their reports relying almost entirely on their field notes, since the related publications were left in Jordan at Dr. Billeh's office at the National Center for Educational Research and Development. In addition, the manpower analysis and the analysis of the employers' survey being developed by the labor market consultant were not available. Given this situation, it was decided that the Interim Report would consist of separate segments by each consultant, as there was no opportunity for the team to discuss their preliminary findings with each other. This format would facilitate the implementations of Phase II whenever, and if ever, this takes place.

Note: The document "Development Plan for Vocational Education in the Ministry of Education" was received from Jordan too late to be considered for this report. It will be of considerable value for the final report since it is a long range MOE plan for vocational education.

# I. THE LABOR MARKET DEMAND

## A. Market Status

An analysis of available data on employment and unemployment in Jordan is presented in Annex I-A. The data reported in that Annex refer to the year 1987 unless otherwise noted. The general conclusions of the analysis may be summarized as follows:

- Aggregate unemployment has been high (nearly 15%) and rising (a "best-guess" estimate would be about 18% for the year 1990).

- While there are differences in the incidence of unemployment by level of educational attainment, differences are not particularly pronounced or uniform. The lowest reported rate, for those with some post-university education, was nearly 9%. The highest rate (22%) was recorded by graduates of community colleges. Vocational school graduates registered an unemployment rate of more than 18%, i.e., the second highest among all educational categories.

- When aggregate unemployment exceeds, say, 10%, job placement rates among passed-through graduates of vocational institutions generally fall dramatically (Bowles, 1988).

- While there may be structural impediments to the efficient operation of labor markets in Jordan, the major problem appears to be a general deficiency in the demand for labor, i.e., a lack of jobs relative to the rapidly growing number of job seekers. This is largely due to regional declines in labor demand since 1983, coupled with Jordan's lack of compensating internal development.

## B. Survey of Employers Views

In order to examine employer views on Jordan's labor market and on factors felt to be important in affecting the productivity and profitability of business operations, the team conducted a stratified, random survey of firms employing 5 or more workers. Seventy firms were included in the sample. The sample was designed and interviews conducted by Dr. Fathi Arouri and two graduate students from the Royal Jordanian University. Details of the sample are provided in Annex I-B. The majority of firms interviewed were manufacturing enterprises (61%), and 80% had been in operation for over 7 years. The survey covered several broad areas of inquiry:

- factors felt to be important in determining profitability (costs, market demand, Government regulations, the availability of skills, etc.);
- sources and methods of labor recruitment;
- provision of on-the-job training;
- the use of outside skills-development sources;
- employer views on outside training sources (e.g., vocational education or apprenticeship programs); and
- respondent opinions of the quality (productivity) of their work forces.

Note: Survey results are presented in Annex I-C.

1. Factors Affecting Productivity and Profitability

Respondents noted a great many factors that they felt had significant influence on the profitability of their firms. Specific skill shortages were considered as "very important" by only 37% of the respondents, as noted in Q-8h ("Q" refers to the survey question and "8h" to the number). Of greater importance were general productivity problems; i.e., motivation, attitude, average productivity, and management/ supervisory skills. As might be expected, the most significant influences on profitability were felt to be local market demand (considered as "very important" by 73% of respondents) and materials/equipment/supply costs (considered as "very important" by 71%). Wage costs ranked next in terms of importance accorded by respondents.

A separate question was asked concerning which two factors respondents considered most important, but no codes were provided by the Jordanian contractor, so this summary statistic could not be calculated.

2. Sources and Methods of Labor Recruitment

In terms of factors considered to be important in the setting up of firms (Q. 10), market availability and investment requirements were considered the most important (86% listed each as "very important"). The availability of management was considered as an important constraint by more respondents than was the availability of qualified employees.



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Seventy percent of the firms indicated that they generally recruited labor, and 63% reported that they increased the number of their employees over the last year (Q. 5). At the same time, 30% of the firms sampled reported that they were operating at below 60% of capacity, and only 25% were operating at above 90% (Q. 7). A variety of recruitment sources were reported: labor offices; advertisements on radio, TV or newspapers; professional associations, and various combinations (Q. 12b). Notably, little use seems to be made of vocational or training institutions -- only 13% of respondents reported getting lists from such institutions when they were recruiting. This raises questions about the strength of linkages between private-sector employers and the skills-development sector. This will be elaborated in a later section.

When hiring new employees, respondents considered experience and attitudes/motivation to be the two most important factors in their decisions (Q. 13). Interestingly, education seems less important a consideration than technical training (39% considered education as "very important", while 47% considered technical training to be so). Both factors were considered as "not so important" by an equal percentage of respondents (16%). There is a likelihood that respondents interpreted "technical training" to mean "technical skills" (which might include on-the-job training), which would be consistent with other responses in the survey.

3. Internal and External Training

Relatively few respondents preferred to train their work forces internally. The majority (59%) seemed to want a combination of prior training by outside institutions or through on-the-job experience, coupled with specific in-house training (Q. 14). 81% of the sample indicated that they provide on-the-job training, but the content of that training could not be discerned without greater probing than time permitted.

Some 56% of the respondents indicated that they have difficulties finding specific skills which is somewhat reflective of the atomistic nature of Jordanian industry. Many employers seemed to feel that their equipment or production processes were so specialized as to require "hands-on" practice with internal supervision. Slightly less than half of the respondents (40%) felt their internal training could be handled by the VTC, but they sometimes indicated that their training was so specialized as to cause outside training to be uneconomic (Q. 19). Still, some 29 firms (41%) indicated that they do send employees for outside training.

Much of this appears to be in the form of short courses or seminars. Only 4 firms (6%) reported sending their employees to the VTC for outside training. At the same time, 70% of the respondents indicated that they provide training

for outside sources, presumably through the apprenticeship component of the VTC (Q. 22). 64% of the firms indicated that at least some of their employees are graduates of the VTC, which is the same number as that for graduates of Ministry of Education programs. Over 60% of the firms that employ graduates of vocational programs rated those graduates as "much better" than their other employees (Q. 24). Another 30% rated those graduates as no better or even worse than other workers. The remainder felt the question was not applicable to their experience.

Respondents seemed favorably disposed to available vocational training with 76% rating such programs as "rather good". Excluding the "don't know" or "inapplicable" responses, the favorable response rate rises to 90% of the sample.

4. Quality of Employees

Question 26 was designed to elicit employers' assessments of the quality of their work forces. Despite favorable impressions of available vocational training programs, respondents noted quite a few problems relating to labor productivity. For example, 55 respondents (79%) felt that their employees required too much supervision, and another 31 (44%) felt that their workers "know how to do their jobs, but they don't always do their jobs well." Exactly half of the respondents agreed with the statement, "When hiring a new employee, I don't really want a worker who is already trained. Just give me people who are motivated and disciplined, and I'll teach them what I want them to know." In general, respondents seemed more concerned about the noncognitive aspects of worker skills than about specific skills necessary to perform particular tasks.

5. Recommendations for Improvement

Question 28 attempted to elicit respondent recommendations for improvements in vocational education/training programs. Although 17 respondents (24%) indicated that they had not really thought of the problem, the pattern of responses is extremely consistent. The evidence reinforces the notion that respondents are most concerned about noncognitive aspects of job performance. Thus, 80% of the sample agreed with the statement that programs need to stress more "practical experience" and "less theory."

Seventy seven percent felt there was a need to "teach students better discipline" and 91% stressed the need to "teach students to be more interested in the quality of their work." Other questions called forth similar agreement: the need to teach multiple skills, the need to provide exposure to the types of machinery and equipment used in private industry, the need to update

curricula, the teaching of "better attitudes" (91% concurred that this is a needed step), safety awareness, instructor upgrading (i.e., more on-the-job experience for instructors), and improved contacts between employers and representatives of the vocational training sector.

## C. Labor Market Outlook

### 1. Focus

Even prior to the Iraqi invasion of Kuwait, Jordan's near-term employment outlook was uncertain. Recent developments have added to the uncertainty while at the same time increasing pessimism about the future. In speaking of the effects of economic sanctions on Iraq, a noted Jordanian scholar stated, "Thus the direct losses [for Jordan] would be in [sic] the order of 28 per cent of the gross domestic product and an extra unemployment of 22 per cent of total labor force to be added to the already high rate of unemployment of 16 to 20 per cent." (Fanek, 1990). These losses derive from:

- Loss of trading markets (Iraq, Saudi Arabia)
- Loss of remittances (from Saudi Arabia and Kuwait)
- Loss of grants and loans from oil-rich Gulf countries in response to Jordan's political stance vis a vis Iraq

He further states that, "The Government of Jordan has responded to this [pre-Gulf conflict] slowdown by focusing on a human resources strategy that aims to increase employment opportunities by expanding both the quality of the labor supply and the quantity and quality of skilled labor demand in the domestic economy. This approach is designed to help Jordan to develop into a skilled human resources entrepot along the lines pioneered by Hong Kong and Singapore, with which Jordan shares attributes such as limited natural resources, a hard-working and increasingly educated population, a stable government and institutions, a relatively open trade and foreign exchange regime, an advantageous geographical location, and a dedicated leadership." (World Bank, 1989, p.2).

The problem is that no one has yet identified specific sectors or activities which the Government will be trying to promote to achieve its broad objective, so that implications for skill-development policy or vocational education/training programs cannot be deduced. Some scenarios might imply a need for improved on-the-job training, others might imply an expansion of the academic system, especially at the university level and above. Some vocational skills (say, those useful in agro-processing) are not readily transferable to other industries (such as high-level communications technology). Mechanics require different skills than electronics. Projections



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of past trends are neither valid nor informative for Jordan at the current juncture, for under any scenario, Jordan is facing a need to change its past labor-market structures.

2. Market Niche

Even prior to Iraq's invasion of Kuwait, Jordan was facing a need to wean itself from the ephemeral largesse of Gulf neighbors and to stimulate internal development. This was recognized as early as 1988. There was some talk of agro-processing, petrochemicals, and other growing industries, but no evidence could be found (by this team) of calculations of Jordan's comparative advantage, terms of trade or market opportunities for specific commodities or services. Aside from its regional advantage -- which itself looks pretty ephemeral at the moment -- Jordan will be facing strong competition from other foreign-exchange-seeking, middle-income, countries in the world market.
The first priority, therefore, will be for Jordan to identify "market niches" into which its comparative advantage can be fitted. From this can be deduced the labor requirements to sustain development targets. Without the initial "market-identification" step, however, specific implications for skills-development programs cannot be determined.

## D. Implications for Skills-Development Strategy

1. Human Capital Development

"Jordan will undoubtedly have to rely on its human capital resources for reviving domestic growth and maintaining external balances over the long term--whether those resources are directly exported as in the past, or whether, as a result of scientific and technological capacity building they are used for domestic production and export of high value-added goods and services. The Government's human resources strategy is designed to cover both eventualities by enhancing the quality of the education system and hence improving the capacity of school leavers to compete in any (reasonably configured) labor market, at home or abroad." (The World Bank, 1989, p. 4).

While the objective of relying on comparatively advantageous human capital to fuel future economic growth is both valid and attainable, it must confront the constraint of extreme uncertainty about Jordan's growth outlook, industrial specializations, trading partners, and others. Whether and how soon international pledges of financial compensation for the costs of sanctions will be received is one important question. Jordan's political standing in the post-war Middle East is another.

)ne proposal which was being discussed during our mission to Amman was ɔ expand the vocational education/training system. "Jordan's Board of ;ducation has recently adopted a vocational preparation policy paper which ›roposes that vocational training be expanded to provide places for 50% of ll male graduates of the compulsory education system and 30% of females." The World Bank, 1989, p.10). There is some question whether budgetary ›ressures will permit this expansion at the current time. Moreover, there is further question whether simple expansion of what may have become a omewhat inefficient system, will lead to the attainment of Government bjectives. The question includes such elements as possible declining rates of capacity utilization within the VTC, rising average costs, and certain other possible implementation problems, such as inadequate linkages between employers and educators/trainers]. Finally, there is a very important question as to the optimal role and timing of skills development within a strategy of "human-resource driven growth."

2. Basis for Skills Development

As a general rule, skills should be looked on as an input to growth, so that the demand for skills should be seen as a derived demand, i.e., derived from the saleable goods and services which the skills can produce. Skills development is not therefore a proper policy objective but, rather, an intermediate input for the attainment of higher-order objectives. At the same time, there is a logical conundrum: economic growth can be facilitated by anticipatory human capital investments, yet growth prospects need to brighten before such investments can be induced or afforded.

An alternative approach to what one must fear could become a skills development system designed in isolation from other components of the growth strategy, would be an integrated approach, in which skills development would play a secondary, but supportive role. The structure of such a system already exists. How that structure should respond to changing future constraints is the central question.

It would appear that authorities will need to clarify their views of the labor market outlook before simple expansion of the current system can be recommended. This implies market identification and promotion, on the one hand, and business/export development, on the other. As this process is implemented, consolidation within the existing vocational training system could move forward and later, selective expansion could be attempted. An intermediate consolidation phase is recommended in order to permit testing and evaluation of some of the ideas contained elsewhere in this report regarding the improvement of the efficiency of the current system. It is also a response to the perceived budgetary difficulties facing the country in the medium term.

3. Private Sector Involvement

Judging from the survey results reported in Annex I-C, it will be necessary to involve the private sector in any attempts to improve the skill-development system. Two recommendations derive from these employer views: the need for better "work attitudes" among first-job seekers (motivation, commitment, interest in quality, etc.), and the need for skills-upgrading for the existing work force (particularly supervisors). The former problem may require improvements in the educational system more than in its vocational subcomponent. As mentioned, the current structure of the skills-development system could accommodate these requirements. The question has to do with implementation, which is covered in other sections of this Interim Report.

## ANNEX I-A

## The 1987 Unemployment Situation

Extent and Nature of Unemployment (Prior to the Iraqi Conflict)

There has been a significant degree of confusion about the nature and causes of unemployment in Jordan. Part of the confusion stems from the use of different (and sometimes inappropriate) data sources to support alternative viewpoints, and another part from lack of clarity about concepts (some look at the relative incidence of unemployment, others at its relative prevalence). The issue is important because the nature of unemployment is reflective of underlying causes and these, in turn, circumscribe the likely effectiveness of policy alternatives, including the option of skill-upgrading activities. Essentially, the debate centers on whether unemployment in Jordan is due to a deficiency in aggregate demand and job opportunities, or to a structural mismatch between labor demand and the supply characteristics of the unemployed.

"In discussing unemployment problems in Jordan, a dominant impression one gets is that engineers and medical doctors are the main victims of unemployment. They are at the forefront of all arguments. While the available empirical evidence is inadequate, it seems nevertheless sufficient to show that the serious unemployment problems have little to do with these professions. There are over fifty thousand unemployed Jordanians. But there are only about two hundred or so unemployed doctors. Furthermore it seems that only about three dozen of these have the proper credentials. The others have studied abroad in second-rate institutions and have failed to pass the local board examinations...The situation with the engineers is not much different. There are 1300 engineers without jobs. But the vast majority have foreign degrees of lower reputation." (Castro, ILO Mission Report, 1989).

A later ILO mission, using data from the 1987 household survey of health, manpower, poverty, and nutrition noted that, "The educational background of unemployed males is much more evenly distributed than it is for females. Only 15% of their [male] total have community college or higher qualifications; 10% are illiterate and a further 19% can only read and write." (Birks et al., 1990, p.12). Aside from the fact that these observations do not coincide with the data presented in that report, the implications of examinations of shares of unemployment -- which indicate the relative prevalence of unemployment -- are not entirely clear. Just because the disabled, for example, make up a small proportion of the unemployed, this does not imply that the disabled do not have an unemployment problem.

A high incidence of unemployment (which shows relative labor market hardship) can exist in parallel with a low prevalence, if the population sub-group makes up a small proportion of the labor force.



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The following table presents Mission estimates of unemployment shares and labor force shares, by educational categories. For example, while elementary-school leavers comprised only 16.5% of the total unemployed in 1987, they also comprised only 15.7% of the labor force in that year. In other words, persons in this educational category constituted a disproportionate share of unemployment -- they were (slightly) overrepresented in unemployment.

**Table 1**

**Labor Force and Unemployment Shares in Jordan, 1987**

| Level of Education | Share of labor force | Share of unemployment | Ratio of unemployment share/labor force share | Unemployment rate |
|---|---|---|---|---|
| Illiterate | 12.0% | 8.5% | .708 | 10.5% |
| Read/write | 18.7% | 15.7% | .840 | 12.5% |
| Elementary | 15.7% | 16.5% | 1.051 | 15.7% |
| Preparatory | 19.0% | 19.1% | 1.005 | 15.0% |
| Vocational | 1.7% | 2.1% | 1.235 | 18.3% |
| Secondary | 13.2% | 13.6% | 1.030 | 15.8% |
| Community college | 11.7% | 17.2% | 1.470 | 21.8% |
| University | 7.5% | 7.1% | .947 | 14.0% |
| Post-university | 0.7% | 0.4% | .571 | 8.8% |

Source: Mission estimates, based on calculations from Department of Statistics, Survey of Health, Nutrition, Manpower, and Poverty, 1987

Column 3 shows the ratio of unemployment shares to shares of the labor force, by educational category. Where the ratio is less than one, persons with that level of educational attainment are underrepresented in unemployment; where greater than one, they are overrepresented. Note that the highest degree of over-representation is found among graduates of community colleges, who accounted for 12% of the labor force but 17% of the unemployed in 1987. This suggests that community college graduates face particular employment problems. They are at higher risk of unemployment than are other education groups.

This is shown in the fourth column of the table which presents the unemployment rate for each of the educational categories. If one is interested in the relative difficulties faced by various categories of workers, the unemployment rate is the single most appropriate indicator. In fact, relative unemployment rates (relative to the national average) are

mathematically identical to the ratio of unemployment to labor force shares. Use was made of this relationship to generate unemployment rate estimates when the official data were missing. The data show that unemployment rates are below average among those with less than elementary school education, higher than average up to university completion, and declining thereafter. The highest unemployment rate, as mentioned, is for those with community college education.

The fact that those with less than elementary school education have lower than average unemployment rates (relatively low incidence of unemployment) suggests the existence of a segmented, unskilled labor market. Presumably, a large proportion of these lesser educated persons are non-Jordanians. There are plenty of unskilled job opportunities available, but they may not pay enough to be worth the effort (for Jordanians).

It is surprising that so many persons reported less than elementary school completion (30.7% of the labor force) in view of Jordan's highly developed educational system and presumed low rates of illiteracy, which is another reason to suspect that a significant proportion of these are non-Jordanian job seekers.

The implications of disproportionately high rates of unemployment for community college graduates are not entirely clear, as any of a number of competing explanations could be consistent with the data. Those who attend community colleges are, by definition, those who were unable to pursue university education, yet also by definition, they are motivated toward academic accomplishment. It could be that their job aspirations are set unrealistically high in relation to available labor market opportunities and that too many people are competing for the best jobs, or for the shrinking number of jobs in the public sector. Or, it could be that employers feel that community college graduates are "losers" who could not make it through the normal academic route. It could be that those with a propensity for unemployment also have a proclivity for the kinds of study available in community colleges. Finally, it could be a problem of sex, i.e., relatively more females than males are graduated from community colleges.

The second highest unemployment (18.3%) is for graduates of vocational secondary programs. This is an estimate prepared by this mission, based on labor force and unemployment shares. To the extent the estimate is valid, it raises questions about the effectiveness of vocational education within the current Jordanian context.

As to the question whether Jordanian unemployment is caused by structural mismatches between skills demanded and supplied, or whether by a general deficiency in demand, unemployment data alone are insufficient to permit a rigorous assessment of the competing hypotheses. For this, one would need comparable data on unfilled job vacancies, but these are unavailable in Jordan. The Mission carried out a small survey of employers to shed light on this question. Results are presented in detail in a later section. For now, it is sufficient to note that employers in Jordan do not feel that there is a general shortage of



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specific skills, suggesting that the problem is a general lack of jobs, rather than a lack of skills. The pattern of reported unemployment rates is consistent with this view.

It will be noted that all the unemployment rates reported in Table 1 are relatively high, regardless of the level of educational attainment. In fact, the variation across educational levels is actually rather low. The lowest reported rate, for those with post-university, graduate-school study, is nearly 9%, and the total rate is nearly 15%. Moreover, all indications are that conditions have worsened since the 1987 reference date. Job opportunities for Jordanians in the Gulf have continued to decline as oil revenues have remained low, and the Government's austerity program has led to a shrinking of public-sector employment. "From information (provided) by the Ministry of Social Development, there has been a significant rise in poverty since 1987. In that year 18 per cent of households were estimated to have been below the poverty line but this had increased to 25 per cent in 1989."(Lee, ILO, 1989, p. 9)

Further examination of the data suggests that there are really two principal components of the unemployment problem in Jordan: the first due to the onset of recessionary forces brought about by the decline in oil prices since 1983; and the second, brought about by the longer term continuation of those forces. "There is a large group of unemployed males, comprising 60% of all unemployed males, whose common characteristics are as follows: they were previously in employment though are not retirees; they are aged 25 years or more; they have preparatory schooling or less; they previously worked in unskilled jobs; they have been unemployed for at least two years; they come from relatively less well-off households. It is this group which have borne the brunt of the economic recession thus far, the declines in migration to the Gulf, and reduced domestic opportunities." (Birks et al, 1990, p. 14).

The second group of the unemployed (both males and females) appear to be younger (less than 24 years), have not worked previously, are relatively well educated (40% of the males and 83% of the females have secondary school certificates or higher), and most had been unemployed for less than a year. This appears to be an emerging problem, i.e., unemployment among first-job seeking school leavers. In that the labor supply of educated or skilled labor has been rising faster than total labor supply, this problem of "educated unemployment" has the potential of worsening in the coming years. (Lee, ILO, 1989).

It may be observed that aggregate unemployment in excess of, say, 10% of the labor force, is likely to severely hinder the effectiveness of training and vocational education programs, implying low rates of employment for passed-through completers. The 1990 unemployment rate is unknown, but 18% is likely a fair guess, and there are no signs of general improvement in the medium term. In fact, with the influx of refugees from Iraq, Kuwait, and the West Bank of Israel, the medium-term outlook is bleak.



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## REFERENCES


Bowles, D., 1988, AID's Experience with Selective Employment Generation Projects, Washington D.C., US Agency for International Development.

Birks, J.S., A. Holt and C.A. Sinclair, 1990, Employment and Unemployment in Jordan: A Review, Geneva, The International Labour Office.

Castro, Claudio de Moura, 1989, "Training and Unemployment in Jordan," ILO Mission to Jordan on Employment, Labour Market and Training Policies, 29 September - 5 October, 1989, Geneva, The International Labour Office.

Fanek, F., 1990, "The Prohibitive Cost of Economic Sanctions", Jordan Times, 19 August, p. 4.

Lee, E., 1989, "Jordan: Issues in Employment Policy," ILO Mission to Jordan on Employment, Labour Market and Training Policies, 29 September - 5 October, 1989, Geneva, The International Labour Office.

The World Bank, "Staff Appraisal Report. The Hashemite Kingdom of Jordan. Human Resources Development Sector Investment Loan." Washington D.C.

ANNEX I-B

# VOCATIONAL EDUCATION IN JORDAN

SAMPLE DESIGN

FOR

## SURVEY OF ESTABLISHMENTS ENGAGING (5) PERSONS OR MORE IN JORDAN (SURVEY OF JORDANIAN EMPLOYERS AND EMPLOYEES)

**Dr. Fathi Arouri**

**October 1990**

**Amman - Jordan**

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**Table No. (1)**

**Establishments Engaging (5) Persons or More**

| Industry | Number of Employees | | | | | | |
|---|---|---|---|---|---|---|---|
| | 5-9 | 10-24 | 25-49 | 50-99 | 100-99 | 200 or more | Total |
| Mining & Quarying | 69 | 7 | 0 | 4 | 2 | 3 | 85 |
| Manufacturing | 799 | 233 | 116 | 52 | 26 | 21 | 1241 |
| Electricity, Gaz & Water | 0 | 1 | 1 | 0 | 0 | 3 | 5 |
| Construction | 10 | 17 | 18 | 15 | 13 | 1 | 74 |
| Commerce (Wholesale, retail, trade, Restaurant Hotels) | 239 | 175 | 50 | 32 | 9 | 4 | 500 |
| Transport, Storage & Communication | 63 | 44 | 16 | 7 | 0 | 9 | 139 |
| Financing, Insurance & Real Estate | 12 | 20 | 20 | 12 | 7 | 11 | 82 |
| Services | | | | | | | 796 |
| Total | | | | | | | 2922 |

**Table No. (5)**
**Sample Size of Establishments Engaging (5) Persons or More**

| Industry | Number of Employees | | | | | | Total Selected |
|---|---|---|---|---|---|---|---|
| | 5 9 | 10 24 | 25-49 | 50-99 | 100-199 | 200 or more | |
| Mining and Quarying | 1 | 1 | - | - | 1 | 2 | 5 |
| Manufacturing | 5 | 6 | 11 | 8 | 6 | 7 | 43 |
| Electric Gas and Water | - | - | - | - | - | 1 | 1 |
| Contruction | - | - | - | - | 2 | - | 2 |
| Commerce Wholesale, Trade, Restaurants Hotel | - | 2 | 2 | 2 | 2 | 1 | 8 |
| Transport storage and Communction | 0 | 1 | 2 | 0 | 0 | 3 | 7 |
| financing Insurance and Real Estate | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Services | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| Total | 6 | 10 | 15 | 12 | 12 | 15 | 70 |

## ANNEX I-C

## NATIONAL CENTER FOR EDUCATIONAL RESEARCH AND DEVELOPMENT

## VOCATIONALEDUCATION DEVELOPMENT IN JORDAN QUESTIONNAIRE FORM (1)

## SURVEY OF JORDANIAN EMPLOYERS QUESTIONNAIRE

Name of firm _____
Address _____
Position of respondent _____

1. What does the firm make or do?

   _____

2. Is the enterprise part of a larger company?

   Yes: 20% No: 80%

3. How old is the firm (date of establishment)?

   7 years: 20% 30 years: 20%

4. How many workers are employed by the firm?

   0-10: 10% 10-20: 11.4% Over 50: 54.3%

5. Over the last year, has the number

   a. increased? 62.9%
   b. decreased? 12.9%
   c. stayed at about the same level? 24.3%

6. What percentage of employees are

a. managers?
b. administrators?
c. technicians?
d. semi-skilled?
e. unskilled?

7. Capacity utilization

| | | |
|---|---|---|
| a. | 90 - 100% | 24.3% |
| b. | 60 - 90% | 44.3% |
| c. | 50 - 60% | 21.4% |
| d. | less than 50% | 8.6% |
| e. | no answer | 1.4% |

8. How do you consider the following factors in determining the profitability of your firm?

| | | Very Important | Important | Not So Important | No Answer |
|---|---|---|---|---|---|
| 8-a | Market demand | | | | |
| a. | local | 72.9% | 17.1% | 8.6% | 1.4% |
| b. | regional | 28.6% | 32.9% | 37.1% | 1.4% |
| c. | outside region | 20.0% | 15.7% | 61.4% | 2.9% |
| 8-b | Costs | | | | |
| a. | material, equipment and supplies | 71.4% | 22.9% | 2.9% | 2.9% |
| b. | labor costs | 57.1% | 38.6% | 2.9% | 1.4% |
| c. | wages | 55.7% | 37.1% | 5.7% | 1.4% |
| d. | other labor costs | 30.0% | 44.3% | 21.4% | 4.3% |
| e. | energy costs | 47.1% | 32.9% | 17.1% | 2.9% |
| f. | subcontracts (please indicate the kinds of activities for which you subcontract) | 10.0% | 17.1% | 55.7% | 17.1% |
| g. | taxes | 37.1% | 42.9% | 18.6% | 1.4% |
| h. | interest payments | 41.4% | 32.9% | 24.3% | 1.4% |
| i. | transportation costs | 25.7% | 38.6% | 34.3% | 1.4% |

| | | Very Important | Important | Not So Important | No Answer |
|---|---|---|---|---|---|
| 8-c | Availability of credit | 31.4% | 31.4% | 25.7% | 11.4% |
| 8-d | Government regulations (licenses) | | | | |
| | a. on imports | 37.1% | 31.4% | 30.0% | 1.4% |
| | b. on exports | 22.9% | 22.9% | 47.1% | 7.1% |
| | c. labor regulations | 31.4% | 47.1% | 20.0% | 1.4% |
| 8-e | Distance to markets | 37.1% | 25.7% | 34.3% | 2.9% |
| 8-f | Communications | 62.9% | 24.3% | 11.4% | 1.4% |
| 8-g | Competition from abroad | 47.1% | 30.0% | 21.4% | 1.4% |
| 8-h | Skills of workforce | | | | |
| | a. motivation to work | 60.0% | 34.3% | 2.9% | 2.9% |
| | b. attitude to work | 54.3% | 40.0% | 1.4% | 4.3% |
| | c. average productivity | 65.7% | 25.7% | 4.3% | 4.3% |
| | d. difficulty in finding specific skills at prevailing wage rates | 37.1% | 44.3% | 15.7% | 2.9% |
| | f. management skills | 67.1% | 27.1% | 4.3% | 1.4% |
| | g. supervisory skills | 71.4% | 24.3% | 2.9% | 1.4% |
| 8-i | Lack of appropriate technology | 35.7% | 38.6% | 21.4% | 4.3% |

9. Of the above factors which two would you consider most important in determining your firm's profitability?

1.
2.

10. How do you consider the following problems in setting up a firm like yours?

| | | Very Important | Important | Not So Important | No Answer |
|---|---|---|---|---|---|
| a. | licensing | 37.1% | 25.7% | 32.9% | 4.3% |
| b. | capital investment | 85.7% | 8.6% | 2.9% | 2.9% |
| c. | credit | 35.7% | 32.9% | 22.9% | 8.6% |
| d. | qualified employees | 60.0% | 31.4% | 5.7% | 2.9% |
| e. | management | 65.7% | 28.6% | 2.9% | 2.9% |
| f. | markets | 85.7% | 10.0% | 1.4% | 2.9% |
| g. | other (specify) | | | | |

11. Do you export any of your output or services?

Yes: 55.7% No: 44.3%

12-a Do you recruit workers for your firm?

Yes: 70.0% No: 30.0%

12-b If yes how do you (or would you) recruit workers?

| | | Yes | No | No Answer |
|---|---|---|---|---|
| b. | advertise in newspapers, radio, television | 41.4% | 51.4% | 7.1% |
| c. | ask employees for suggestions | 31.4% | 60.0% | 8.6% |
| d. | recruit from other firms in industry | 14.3% | 77.1% | 8.6% |
| e. | check with labor offices | 47.1% | 44.3% | 8.6% |
| f. | professional associations | 28.6% | 62.9% | 8.6% |
| g. | get lists of graduates from VTC and vocational institutions | 12.9% | 78.6& | 8.6% |
| h. | ask friends or family | 17.1% | 74.3% | 8.6% |
| i. | combinations | 45.7% | 45.7% | 8.6% |

13. What do you look for in new employees?

| | | Very Important | Important | Not So Important | No Answer |
|---|---|---|---|---|---|
| a. | experience | 61.4% | 30.0% | 7.1% | 1.4% |
| b. | education | 38.6% | 45.7% | 15.7% | |
| c. | technical training | 47.1% | 37.1% | 15.7% | |
| d. | attitude, motivation | 55.7% | 35.7% | 5.7% | 2.9% |
| e. | wage demands | 25.7% | 58.6% | 15.7% | |
| f. | willingness to work long hours | 22.9% | 37.1% | 37.1% | 2.9% |
| g. | other (specify) | | | | |

14. Do you prefer to hire

| | | |
|---|---|---|
| a. | already trained workers? | 28.6% |
| b. | to provide the training yourself? | 12.9% |
| c. | a little of each? | 58.6% |

15. DELETED

16-a Do you ever have problems finding specific skills?

Yes: 55.7% No: 44.3%

16-b If yes, which kinds of skills?

**[To be tabulated by Jordanian contractors]**

17. Do you provide any training for your employees?

Yes: 81.4% No: 18.6%

18. Is this training

| | | |
|---|---|---|
| a. | part of the regular job? | 62.9% |
| b. | special planned programs? | 18.6% |
| c. | unknown; not applicable? | 18.6% |

19. Could any of your programs be provided by VTC?

Yes: 40.0% No: 51.4% No answer: 8.6%

20. Do you ever send your employees for training outside of your firm?

Yes: 41.4% No: 54.3% No answer: 4.3%

21. If yes, please specify where.

| | | |
|---|---|---|
| a. | VTC | 5.7% |
| b. | Vocational of Education, Ministry of Education | 37.1% |
| c. | Other (Specify) | 57.1% |

22. Do you provide any training for others, such as VTC?

Yes: 70.0% No: 28.6% No answer: 1.4%

23. Have any of your employees gone through

| | | Yes | No | No Answer |
|---|---|---|---|---|
| a. | VTC? | 64.3% | 25.7% | 10.0% |
| b. | Ministry of Education Vocational Education? | 64.3% | 28.6% | 7.1% |
| c. | other? | 74.3% | 12.9% | 12.9% |

24. How would you rank employees with vocational training in relation with other workers.

| | | |
|---|---|---|
| a. | much better | 61.4% |
| b. | worse | 8.6% |
| c. | no real difference | 21.4% |
| d. | no answer | 8.6% |

25. If you are aware of any vocational training programs, how would you rate them?

| | | |
|---|---|---|
| a. | rather good | 75.7% |
| b. | waste of time | 4.3% |
| c. | doesn't seem to matter much | 4.3% |
| d. | no answer | 15.7% |

26. DELETED

27. Some employers note some particular problems with the quality of their workers or with the kinds of training programs offered in the country. Please indicate whether you feel the observations apply to your employees.

| | | Agree | Disagree | No Strong Feelings | No Answer |
|---|---|---|---|---|---|
| a. | My employees require too much supervision. | 78.6% | 15.7% | 4.3% | 1.4% |
| b. | I have had to redesign jobs to fit limited workers skills. | 30.0% | 58.6% | 8.6% | 2.9% |
| c. | My workers know how to do their jobs, but they don't always do their jobs well. | 44.3% | 47.1% | 7.1% | 1.4% |
| d. | My workers are good. My business problems come from other sources. | 41.4% | 28.6% | 25.7% | 4.3% |
| e. | When hiring a new employee I don't really want a worker who is already trained. Just give me someone who is motivated and disciplined, and I'll teach him what I want him to know. | 50.0% | 42.9% | 5.7% | 1.4% |
| f. | If I could find better workers, I could expand my business. | 44.3% | 47.1% | 7.1% | 1.4% |
| g. | There are plenty of good workers available. | 38.6% | 50.0% | 10.0% | 1.4% |
| h. | I am hesitant to give my workers too much training because they may get hired away by another firm. | 24.3% | 64.3% | 10.0% | 1.4% |
| i. | I could get by with fewer workers if they were better workers. | 37.1% | 57.2% | 4.3% | 1.4% |

28. What recommendations do you have for improving vocational training in Jordan?

| | | Agree | Disagree | No Strong Feelings | No Answer |
|---|---|---|---|---|---|
| a. | No ideas, have not really thought about the problem. | 24.3% | 52.9% | 10.0% | 12.9% |
| b. | Need more practical experience, less theory. | 80.0% | 10.0% | 8.6% | 1.4% |
| c. | Need to teach students better discipline. | 77.1% | 5.7% | 14.3% | 2.9% |
| d. | Need to teach students to be more interested in the quality of their work. | 91.4% | 1.4% | 5.7% | 1.4% |
| e. | Need to teach multiple skills for worker flexibility. | 68.6% | 24.3% | 4.3% | 2.9% |
| f. | Need to teach with machinery and equipment of the type used in industry. | 87.1% | 1.4% | 8.6% | 2.9% |
| g. | Change curriculum to better reflect required job skills. | 78.6% | 1.4% | 14.3% | 5.7% |
| h. | Teach better attitudes. | 91.4% | 1.4% | 2.9% | 4.3% |
| i. | Teach improved safety awareness. | 92.9% | 1.4% | 2.9% | 2.9% |
| j. | Need instructors with better experience in industry. | 87.1% | 1.4% | 4.3% | 7.1% |
| k. | VTC and Vocational schools need to have more contacts with employers. | 94.3% | 2.9% | 2.9% | |

## II. MINISTRY OF EDUCATION VOCATIONAL TRAINING SYSTEM

### A. Purpose

The Ministry of Education (MOE) is responsible for the total public education system and for monitoring private education in Jordan. The system provides for compulsory schooling from age nine to sixteen years. MOE provides vocational training for boys and girls through a prevocational program at the elementary level and preparation for work at the secondary level. The primary purpose of the elementary program is to provide some experience in the world of work and applied science while the secondary vocational program (Grades 11 and 12) is directed toward preparation for a specific trade on business.

Although a mission statement for secondary vocational program was not available, the statement of goals from the Education Section of the Five Year Plan 1981-90 pp 241-244 is enlightening.

- Students: To promote positive attitudes toward vocational occupations.

- Curricula: To reconstruct the structure of secondary education in accordance with the basic principles governing the integration of vocational and academic education and in such a manner as to ensure that a particular plan includes vocational and academic courses at the same time.

- Teachers: Developing programs geared toward upgrading the proficiency of vocational training personnel at schools and vocational centers as well as of school principals and educational supervisors.

- Syllabi and Instructional Materials: Restructuring secondary education to achieve greater integration between academic and vocational courses in such a manner as to ensure the students receive instruction in academic and vocational subjects simultaneously, taking into consideration the linkage between education, productive work and development plans. Curricula, syllabi and textbooks will be prepared on this integrative basis.

The first track is one of restructuring the economic and social base of the country. This is mentioned in the 81-85 Plan and again in the 86-90 Plan. It gives high priority to initiatives leading to the production of services and goods not heretofore produced in Jordan. It recognizes the need to adopt an educational policy requiring expanding and diversifying secondary education, especially secondary vocational education as well as technical and management instruction at post-secondary levels. The country is well along this track in reforming curriculum at the elementary and preparatory levels. Much remains to be done, however, in the areas of instruction, teacher-training and in the production of teaching materials. And much more needs

to be done to obtain a broad and unified commitment to this track and particularly to include the universities. The country's universities appear to be isolating themselves from the future by their implied assumption that traditional lesson-giving and testing is an adequate end in itself.

This track is both thoughtful and worthy. Of the three discussed, it is the only one which can be expected to give a reasonable return on any investment and the only one which can strengthen the foundations of the society.

The second track, the cost-containment track, is not a mission or goals-related track. It is borne out of frustrations and the easily-nurtured illusion that as quality rises, casualties must necessarily rise. There are certain provisions which would allow the cost containment track to become mission-related. The first proviso would be to require all post-secondary institutions and programs to plan their survival and public support on the basis of their ability to define, and be accountable for, a portion of the development stream of the country. The second proviso would be that all institutions that cannot meet the first proviso would be required to move quickly toward a system of complete cost recovery. This would give all post-secondary institutions the alternative of increasing their fees or reducing their indifference to economic development. Such would put cost-containment on a mission-oriented plan.

The third track, the burden-sharing track is neither mission oriented nor investment-oriented. It is already moving in the wrong direction. The study, admittedly limited, done by Dr. Roy (Development Decisions, 1984) for the World Bank has signalled the difficulty. It states that "the majority of graduates (Vocational and VTC Centers) are of Palestinian origin, born on the West Bank or in refugee camps". It also states that their grades were "most probably fail". The most serious indictment states that "the Jordanian government may be on a course that will institutionalize the already well-established practice of the less-able entering into the vocational training and education stream". If this is true, Jordan will never become an exporter of highly skilled labor nor will it have much left for itself. It will, however, become the source of a flow of refugees possessing little or no skills for a modern workplace.

## B. Administration and Organization

### 1. Structure

The Ministry Structure and the Program Structure are not areas of this report where the team can speak with the confidence of direct observation. Table II-1 shows the MOE Organizational Chart and Table II-2 shows the Program Structure. Both are from a 1988-89 Report to the International Bureau of



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TABLE II-1

# ORGANIZATION CHART
## MINISTRY OF EDUCATION
## 1988

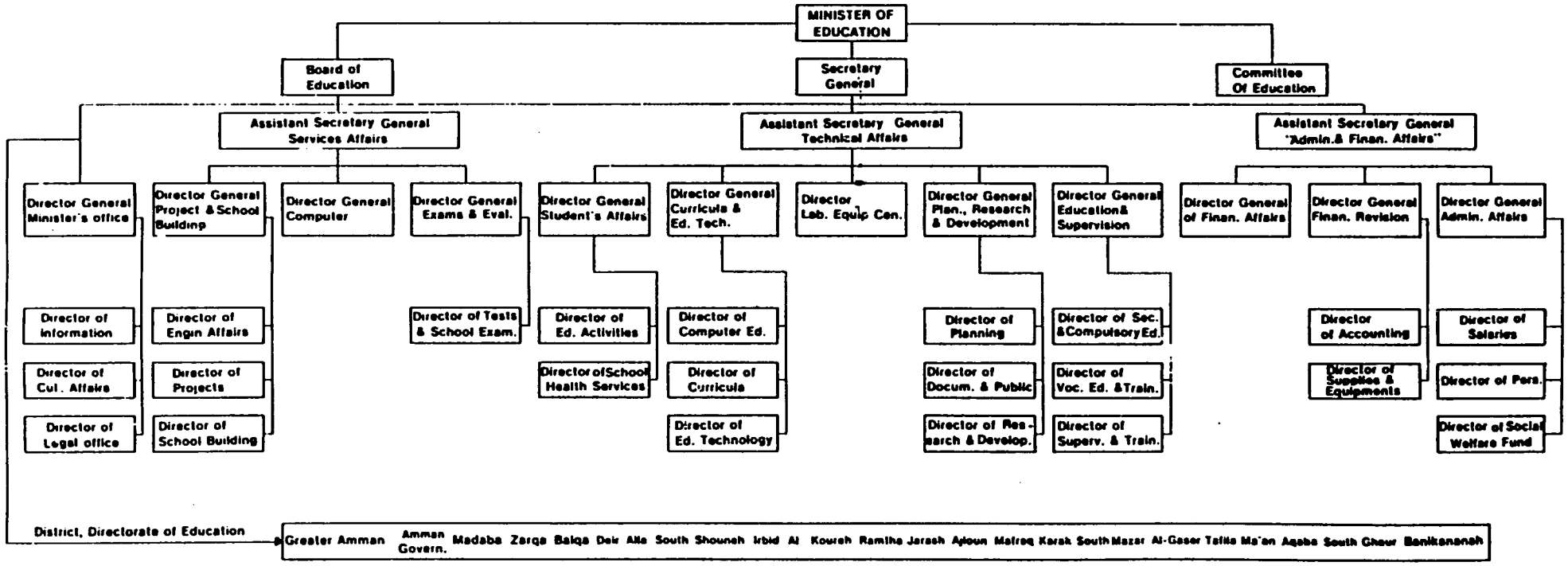


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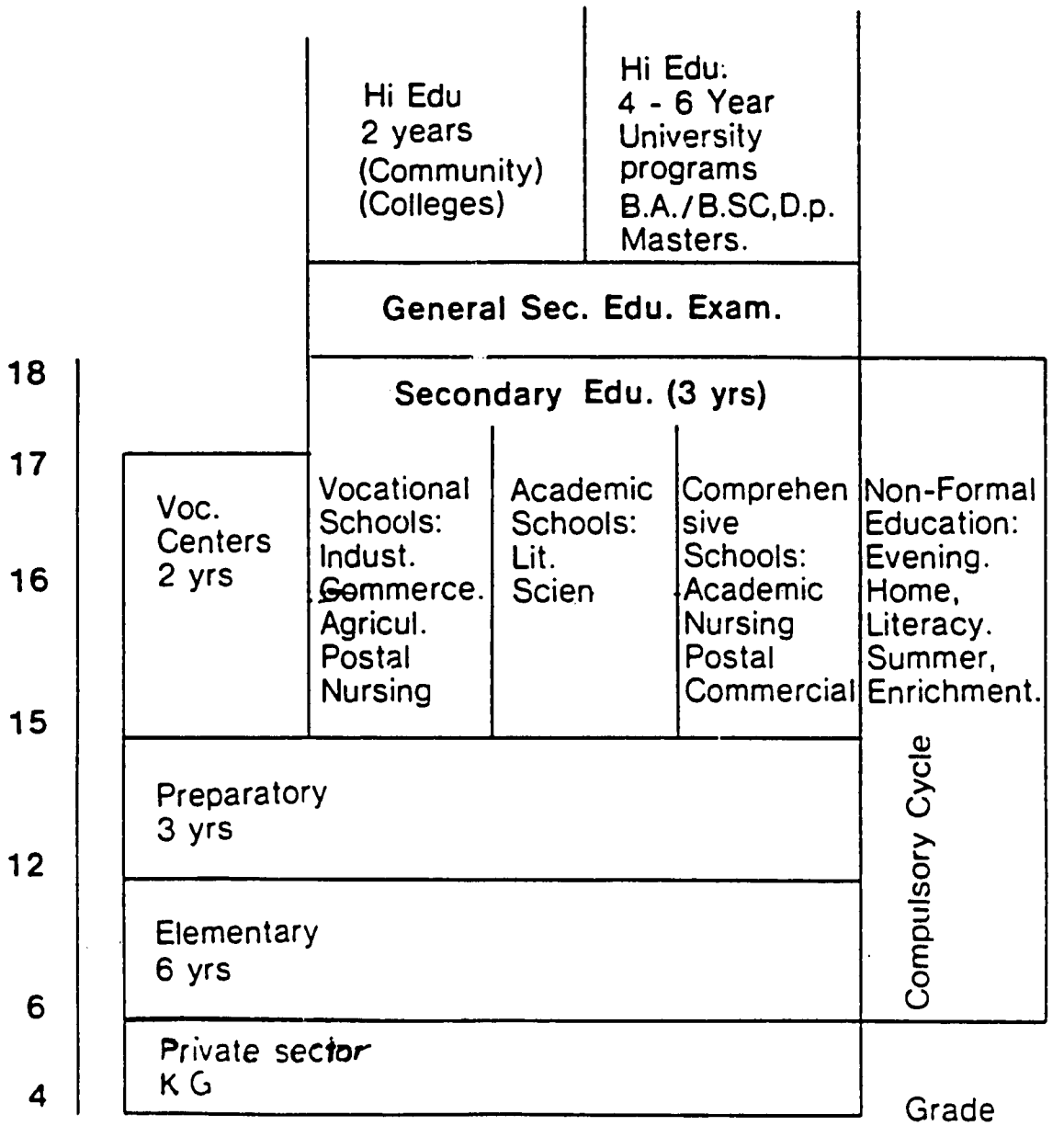
**TABLE II-2**

**Educational Ladder**




Age Compulsory Schooling: 9 years up to age 16.

Education. At this stage, the team does not know the extent to which each part of the MOE chart is staffed and functioning.

The responsibility for managing vocational programs at the Ministry level falls on the Director of Vocational Education and Training whose immediate superior is the Director General of Education and Supervision. At the school level the vocational teachers report to the principal who in turn is responsible to his or her Regional Directorate. The country is divided into 23 Directorates and each Director has the power to convene, but faculty and staff appointments fall under the Civil Service Commission.

The secondary vocational program is highly fragmented by sex, subject-matter and geography into many small schools. Of 42 schools, ten have fewer than 10 teachers and 7 have more administrators than teachers. The extent to which such fragmentation represents unnecessary costs has not been determined by the team. The system is highly centralized including all decisions involving textbooks, curriculum, personnel policies and salaries. All students use the same textbooks and materials.

2. Tracks

Tracking begins at the end of preparatory education. It consists of two streams, each with two tracks. The comprehensive stream of 3 years has an academic track and a vocational track. Completers from both tracks may take the general exam for higher education and all hope to pass it and go further. The other is the applied stream, also with two tracks of two years duration. One track involves those who go to MOE Vocational Centers and the others go to VTC Centers. At this stage it is difficult to know which data is reliable for any of these tracks or streams. Students in the applied streams or tracks are there by assignment, largely against their will and hoping to escape.

3. Professional Preparation

The administrators come up through the teacher ranks and a B.S. degree is required. There are some educational administration in-service programs but the extent or range of these has to be ascertained.



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## C. Admission and Guidance

### 1. Hierarchy

Eighty-five percent of those admitted to universities are admitted by competitive exam. The remainder are admitted by special arrangement of military or other quotas. Those who are not admitted seek admission to a foreign university or another chance to take the exam. As a proportion of total population, Jordan's total university enrollment, domestic and foreign, is one of the highest in the world.

Those not admitted to a university seek admission to a community college ---probably to seek further opportunity for university entrance since the reward structure for community college graduates is considerably less attractive than for university graduates. Those who are in the 3-year secondary vocational track may take the university entrance exam, but those in 2-year vocational centers or VTC's cannot at this time. Some consideration is being given to removing this restriction.

Those not entering post-secondary education are usually those previously assigned to 3-year secondary vocational schools or programs or have been in 2-year secondary centers or VTC programs. Each subsequent level of assignment represents lower level of academic test scores.

There is an undercurrent of dissatisfaction with this system of assignment. It is not the way for the country to acquire a competent, industrious and satisfied work force. Traditionally, such assignments are justified by claiming that it divides a society into thinkers and doers. Unfortunately, it deprives the country of both thinkers and doers.

Before the study team recommends a continuation of this assignment pattern including an expansion of vocational programs, it is important to get more evidence about the extent to which the categories of assignment over or underrepresent certain social classes, income groups, bureaucracy relationships, ethnic patterns, or subject-matter bases. If any of this prevails, it is well to know about it before a large educational investment is made.

### 2. Enrollment

The total MOE enrollment is slightly more than 100,000 students. Of these, about 65,000 are in the preparatory and secondary grades with about 35,000 students in various forms of vocational education. These data should be regarded as very tentative as the official reports may have some double counting. Other figures from the Director's office indicate the following

enrollment in 1990 for the major vocational programs: industrial training 5500; commerce 9943; hotel 220, agricuiture 400; nursing 1300; training centers for girls about 3,914 and a total enrollment of approximately 21,300 or 22% of total secondary enrollment.

The assignment of students to all vocational tracks is claimed to be 30 percent at present with the expectation that this will move to 50 percent under the newly planned reform effort. With attrition rates being low in post-secondary education and grade repetition being high in vocational education, this may result in a 30/70 percent enrollment split between post-secondary and secondary education. This will be probed more deeply later. There are, quite obviously, no admission requirements to vocational education except prior failure in tests.

The most important part of the enrollment story is that it growing so fast that Jordan will need to construct 30 classroom per month to accommodate just the growth of assigned enrollment in vocational education.

3. Guidance

A guidance program is in the process of being instituted and information on its structure will need to be obtained.

Other figures from the Director's office indicate the following enrollment in 1990 for the major vocational programs; industrial training 5500; commerce 9943; hotel 220, agriculture 400; nursing 1300; training centers for girls about 3,914, and a total enrollment of approximately 21,300 or 22% of total secondary enrollment.

## D. Curriculum

1. Elementary and Preparatory

In its new vocational programs, the MOE plans to provide vocational education from first grade to the fourth with one class per week, two classes for grades five to seven, four to those in grades eight to ten. Thereafter, the streams will divide into a comprehensive and an applied secondary cycle.

There are discrepancies between these figures and the tables which follow but they will remain until clarified. Table II-3 shows the classes per week in the compulsory cycle. Table III-4 shows the classes per week in the Academic Secondary Cycle. There is no comparable table available for the applied secondary cycle. Table II-5 shows the subject emphasis in the new pre-

## TABLE II-3
## CLASSES PER WEEK
## COMPULSORY CYCLE

| Grade / Subject | PRIMARY | | | | | | PREPARATORY | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 5th | 6th | 1st | 2nd | 3rd |
| 1. Islamic Ed. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 2. Arabic | 9 | 9 | 9 | 9 | 7 | 7 | 7 | 7 | 7 |
| 3. English | | | | | 5 | 5 | 6 | 6 | 6 |
| 4. Math | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5. Soc. Studies | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| 6. Sciences | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 |
| 7. Pre-vocational | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| 8. P.E. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9. ARTS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10. Total | 24 | 24 | 24 | 24 | 29 | 29 | 32 | 32 | 32 |

## TABLE II-4
## SUBJECTS AND NUMBER OF CLASSES PER WEEK
## IN THE ACADEMIC SECONDARY CYCLE

| Grade / Subjects | 1st | 2nd | | 3nd | |
|---|---|---|---|---|---|
| | General | Science | Literature | Science | Literature |
| 1. Islamic Ed. | 3 | 3 | 3 | 3 | 3 |
| 2. Arabic | 5 | 5 | 6 | 5 | 6 |
| 3. English | 5 | 5 | 5 | 5 | 5 |
| 4. Soc. Studies | 4 | | 5 | 2 | 7 |
| 5. Math | 4 | 5 | 3 | 5 | 3 |
| 6. Sciences | 6 | 9 | 3 | 9 | 3 |
| 7. Voc. Ed. | 2 | 2 | 2 | 2 | 2 |
| 8. P.E | 1 | 1 | 1 | 1 | 1 |
| 9. ARTS | 1 | 1 | 1 | 1 | 1 |
| 10.Economics | | | 2 | | 2 |
| 11. Total | 31 | 31 | 31 | 31 | 31 |

TABLE II-5
NEW VOCATIONAL CURRICULUM UNITS/MODULES
COMPULSORY CYCLE

| Grade | Age | Units |
|---|---|---|
| 1 | 6 | Health and Home Skills |
| 2 | 7 | Water, First aid |
| 3 | 8 | Materials --Wood, Paper, Metal |
| 4 | 9 | Model Making (w/clay, paste, paper etc), Electric Wires, Seeds, Planting, Sewing machines |
| 5 | 10 | Animal and Plant Reproduction, Animal Care, Care of Skin and Teeth |
| 6 | 11 | Simple Tools, Carpentry, Paints, Safe water and food |
| 7 | 12 | Electricity, Finance, Timetables, Setting Agendas, Food & Nutrition, Sewing dresses, Personal Care, Traffic Safety |
| 8 | 13 | Modules mentioned above in multiples of 15 hours |
| 9 | 14 | Agriculture-14 topics, 120 hours; Industrial - 15 topics including wood, metal, glass, electrical and plumbing |
| 10 | 15 | Commercial - 120 hours including computer literacy course |

vocational curriculum to begin in 1991. Many of the modules are completed or are in process. They have been requested by the study team.

2. Secondary Vocational

The Two-Year secondary vocational track provides the same academic core subjects as listed for the academic secondary cycle (Table II-4) and approximately a third of the weekly time in class is designated for that purpose. The other two-thirds of the time is dedicated to the vocational subjects including the standard trade and industrial subjects, commerce subjects, nursing and hoteling. Some training was provided in industry but this seems to have ended due to financial constraints.

3. Curriculum Design

Curriculum design is a central function within the MOE. Curricula for the Ministry's training centers are designed and developed within a separate but parallel unit providing curricula for trade courses in the Ministry and in the VTC. Courses are developed using specialists from the subject field and are competency based. There is little evidence of the use of advisory councils. (See Table II-6 for curriculum development structure.)

It should be noted that a major curriculum reform is underway and well along toward completion and involves, elementary, preparatory and the comprehensive secondary streams.

The basic academic core involves general education (Religion, Arabic Language, English Language and Social Studies, (e.g. "Arab Homeland") and science subjects (Mathematics, Physics, Chemistry). These are the subjects on which the Ministry examines vocational students along with their occupational specialty which may be agriculture, commerce, industrial education, nursing and hoteling.

When new vocational curricula are created, the procedure follows the plan shown in figure 4. The finished product is typical organized on a modular basis.

## E. Linkage with Business and Industry

Linkage between education or training enterprises and industry/business is, at best, tenuous. This seems especially true of the MOE vocational training program. In a country where 40 percent of employment is of foreign nationals and where the unemployment rate is nearly 40 percent, linkage with industry or business is hardly meaningful. There is no relationship, at least none has appeared so far in our



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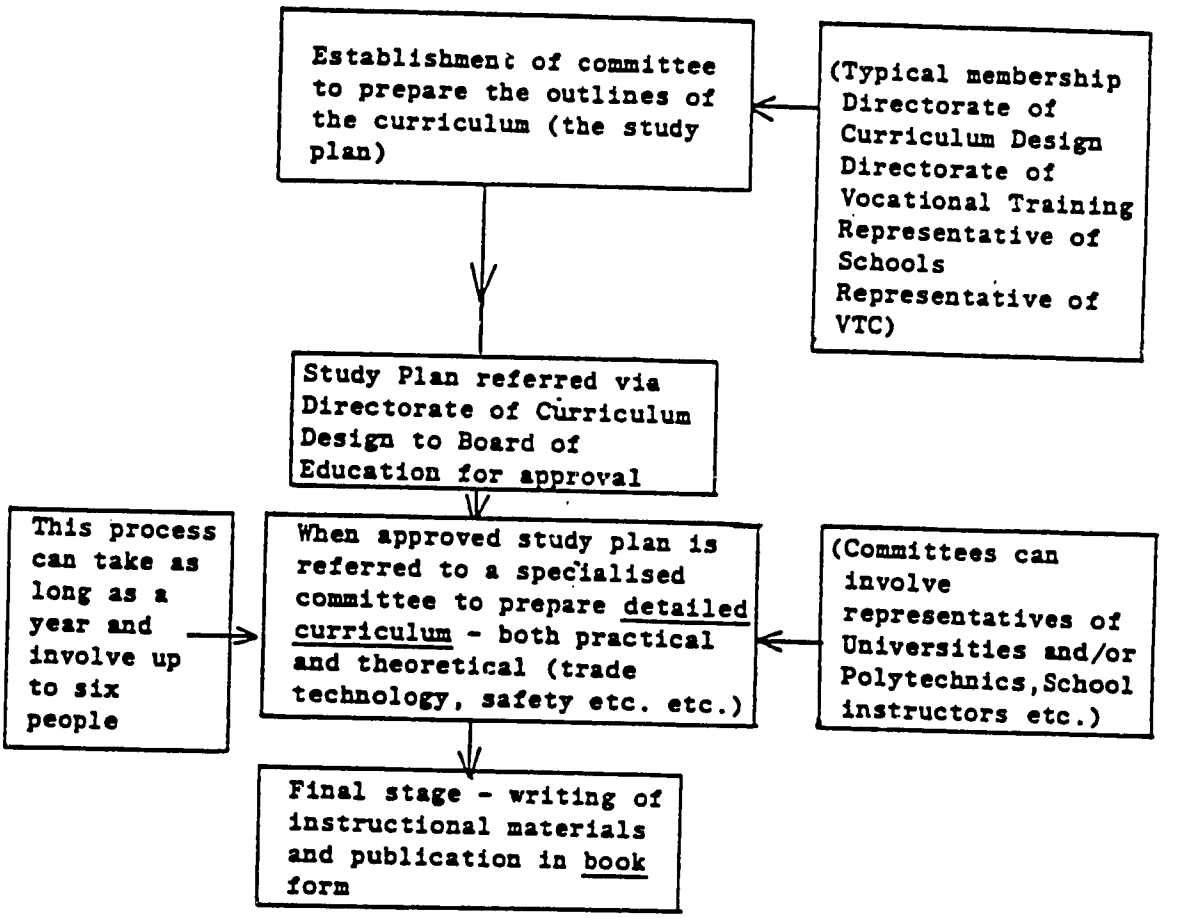
## TABLE II-6

## Curriculum Development Structure



inquiries, that hourly starting pay for new hires is differentiated on the basis of satisfactory completion of vocational skill competencies. In the absence of this kind of relationship, little else matters to workers or to alert training establishments.

In his Report to the Bank for Development Decisions (1985), Delwin Roy emphasized the need of improvement in the dialogue between employers and their employee-graduates of all vocational preparation programs. This describes a climate in which careful study and analysis could be quite urgent. The study team has a weak basis for drawing reliable conclusions about this problem. One thing is very clear; linkages involving industry, business and education are neither close nor mutually rewarding at present. As an exporter of skilled labor, these linkages should begin to involve employers in the entire Gulf area, not only in Jordan.

## F. Teacher Training

Teacher preparation in Jordan is in the midst of a major reform. The issue of how vocational and non-vocational education can be integrated or coordinated is still an open question. It may be a sufficiently difficult task to link the various forms of vocational teacher training. The supply of instructors with "qualification" (degrees) is easy to fill. The supply with professional competence (technical and instructional skill) is very short. Shortages here are likely to be the most serious bottleneck in the entire reform plan.

Acquiring and updating technical competence among vocational instructors is a serious problem in all countries, one which most universities seem incapable of confronting. Vocational instructor preparation is, therefore, a problem of balancing a collection of compromises. The team will need to gather considerable additional data in the area of preparation, certification, skill levels and assessment of competence of teachers.

## G. Facilities and Equipment

Owing to conditions in Jordan, this was the most limited of our observations. Of the observations made, equipment seemed obsolete and insufficient. Facilities were in need of upgrading but there was, at least, space to upgrade at the limited number of sites observed. We may have seen only the better facilities or sites, hence these observations remain uncertain. The team had no opportunity to inquire into, and validate, the Ministry's inventory control. At school levels, we observed reasonably well-managed tool rooms, badly stocked supply rooms, obsolete equipment with questionable maintenance.

With an expansion of vocational education, it may be desirable to reorganize and relocate some teaching centers, update facilities, update equipment and to install a 2-3 year training program to make sure that all of these resources are maximized. At this stage, all of this remains conjectural; it awaits further on-site probing.

## H. Employment of Graduates

There seems to be little effort to assist graduates of MOE vocational programs in finding appropriate job appointments. Unemployment rates are extremely high and job access is hardly related to graduation or nature of training.

The MOE follow-up office has a well established system but it is designed more for tracking students rather than placement and lacks up-to-date technology.

## I. Funding

This is a very important consideration for the study team. Cost of current programs is not the issue. Cost and consequence of alternative futures for Jordan's workforce should be the focus of any recommendation about finance. The study team has not addressed these alternatives and their consequences. Nor has the local team been asked to generate this data. It is a task for the final stages for the joint team effort.

According to a World Bank Staff Appraisal Report (No. 7641-30), the total annual budgetary outlay for vocational education/training is about 10 million dollars. This is a very meager sum for a country needing to refocus, update and upgrade its entire base for educating and training a work

## J. Preliminary Recommendations

Preliminary recommendations are four in number. The first is likely to be the most important but the remaining four are not necessarily in priority order.

1. There is evidence of a disarray of the goal structure involving education/vocational education in Jordan. It is recommended that MOE create a 10 person, 2 year commission to study and design a renewed mission, goal structure and implementation plan for education/vocational education in Jordan. The commission should base its work on commissioned papers (at least 20 of them) written by Jordanians. The goal structure should appear similar to the organization in Table II-7.

2. There is a need to reform the compulsory and secondary cycles of vocational education so that programs reflect more closely the job opportunities of the market place. This can be brought about through a major review and

## TABLE II-7

### OVERALL GOALS

To increase the Economic and Social Vitality of the Country
by
Increasing The Productivity and Quality of Life for Work Force

**AGENCIES**

- Jordan Techn. Group
- Royal Scientific Society
- MOE
- Other

**INSTITUTIONS**

- Univer sities
- Commu-nity Colleges
- Secondary Education
- VTC

**DYNAMIC FORCES**

- Adv. Tech.
- Industry Needs
- Social Changes
- Military Require ments

### GENERAL MISSION

Preparing a productive, efficient, effective work force placing a high value on dignity of work, creativity and leadership.

**Traditional Institutional Programs**

1. Vocational curricula - elementary, secondary and post-secondary.
2. Mutual Reinforcement of academic academic and vocational currricula.
3. Student Agenda-building to elevate dignity, work

**New Ventures**

1. Computer-Vision laboratories
2. Automated systems laboratories
3. Community development programme (e.g. sheltered environments for emerging enterprises)
4. Institutional Mentoring

**Potential New Initiatives**

1. Quality schemes
2. Sponsored Industry and Business Professorships
3. Centers for Innovation and development
4. Enterpreneurial Development

overhaul of programs, curriculum, instructional materials and the addition of an integrated management information system.

3. Instructor training for vocational education (compulsory, academic Secondary, Applied Secondary, Community College and VTC) needs to be planned, organized, institutionalized, implemented and coordinated. Nothing will have a bigger influence in the country. It should not be conducted in universities at this time. The instructor training program needs a thorough renovation in order to produce instructors with sufficient knowledge and skills to teach the latest technologies. The system for preparing vocational teachers should be examined to identify criteria reflecting the needs of the market, strengthen the preparation and integrate the program with that of the VTC.

4. There is growing evidence that the academic tracks have a lower fail/pass ratio and that the vocational track may have many repeaters. If this is true, there is a new burden to recognize and a costly problem to confront. A thorough assessment should be made of this situation before preparing the final report.



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# III. TECHNICAL TRAINING: COMMUNITY COLLEGES

## A. Purpose

### 1. Mission

The purpose(s) and mission of Community Colleges (CCs) in Jordan are derived from the mission of all higher education in the country. Generally, according to Article 3 of the Higher Education Law of 1985, higher education, including CCs, has the responsibility "to implement the Government's educational, cultural, and scientific policies." As early as 1984, recommendations were made to prepare a Community College mission statement because of its importance in establishing direction for the system. However, no separate, distinct mission statement for Community Colleges exists. During our interviews, officials alluded to a mission/purposes statement currently under development.

Consequently, as near as the USAID/AED team could discern, the present mission of Jordan's CCs seems to be the same as the classical twofold purposes for so many of the world's community colleges, junior colleges, and technical institutes, namely, (1) to prepare persons for employment in various technical fields, and (2) to prepare persons for transfer to college and university programs.

Drafters of the mission statement for CCs must consider myriad trends and facts relating to economic developments, demographics, technological change, personal attitudes and career preferences, and familial pressures, just to name a few. In short, the strategy of on-going, comprehensive planning (strategic, long-term, short-term) should become the major focus of all CCs and their parent ministries. Planning should provide the foundation for a CC mission statement and should point the way to subsequent revisions.

### 2. Status

The following brief list of trends provide some indication of the status of education impacting the CCs:

a. the rapidly increasing school-age population;
b. the provision of universal access to basic education;
c. compulsory school attendance to grade 10;
d. increasing number of graduates from VTC and secondary vocational programs;
e. the illusive problem of unemployment of "educated" persons;
f. rising demand for increased technical knowledge;



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g. impact of foreign workers in the country;
h. need for Jordanians working in other countries to possess high level skills in order to be competitive in external labor markets;
i. expansion of vocational education and training to provide places for 50% of all male graduates of the compulsory education system and 30% of the females (By 1998 it is expected that 50% of the students in secondary education will be in vocational education programs.);
j. introduction of a new "technical" stream in grades 11 and 12, graduates of which may continue on into CCs;
k. recent identification of new roles, programs, and activities for CCs (see Section V-C); and
l. use of various retraining programs in CCs to overcome problems of skill obsolescence.

Persons interviewed indicated that CC programs had doubled in the last two years. Some CC programs were said to have existed for 15 or 20 years, however, most were described as being less than 3 years old. Furthermore, it was stated that programs were constantly being monitored to provide a basis for revision and adjustments.

During one interview, we were told that technical education was not pursued by any of the 40,000 Jordanians studying outside Jordan in some 20 countries. One conclusion that can be drawn from this is that Jordan must provide technical education and training within the country, using its own internal resources.

Programs offered in CCs are diverse and tend to reflect efforts to meet technical job market opportunities in Jordan and nearby countries. However, it is to the credit of Jordanian vocational and technical education officials that they recognized the need to address the compatibility between employment opportunities and CCs program offerings. Information provided indicated that industrial and business advisory groups were increasingly being used to guarantee such compatibility. It was emphasized that CC programs were being "wisely planned and skillfully executed."

Programs currently being offered fall into engineering, medical, academic, agricultural, business administration, commerce, social welfare, and educational categories in the MOHE public CCs. Many of these, plus additional programs, are also offered in CCs supervised by private entities, UNRWA (United National Relief and Works Agency) and government agencies other than MOHE.

## B. Administration and Organization

### 1. Organization

Organizationally, the Community College Directorate is in the Ministry of Higher Education (MOHE). It was placed there to improve the linkage between CCs and the upper level colleges and universities, thus raising the status of CC programs and facilitating transfer by students from one to the other. Facilitation of transfer is fraught with problems. Some university-level persons seem concerned that CC programs may be inferior to university-level work, but this is unsupported by any concrete evidence. Nevertheless, such perceptions should not be discounted lightly, and one strategy for resolving this problem is to place all CC programs on a competency-or-performance-based mode such that subsequent evaluations and assessments will serve to dispel misperceptions of program quality. Whereas program effectiveness has been formerly based on enrollment figures only, the focus should now be on performance of learners during training and their employment performance after completion of programs.

Weekly, three-hour meetings are held at the Ministry for CC staff in which course/program appraisals are made, needs are determined, problems are identified along with possible solutions, equipment needs are ranked in priority, and budget status is discussed. Budget requests are made in August each year by CC Deans. The Dean of each CC also submits equipment needs and these are centrally purchased.

### 2. Structure

The Public Community College Directorate is in the MOHE, specifically under the Secretary General. Each CC is directed by a Dean with an Assistant Dean for Teaching/Instruction and one for Student Affairs. Another Assistant Dean for Administration and Finance is provided. Each separate program has a Head responsible for an instructional area.

Since 1975 Jordan has established three polytechniques that are in the CC system. The major difference between polytechniques and regular CCs is that the former usually have more Ph.D.s on staff. The polytechniques play a vital role as technology transfer/incubator centers, and this role needs to be expanded.

The Community College Directorate provides liaison between MOHE CCs and those supervised by private entities, UNRWA, and other government agencies. Such liaison is supposed to coordinate achievement of program

standards. It is through such liaison that a set of program accreditation standards might be implemented.

Concern was voiced in interviews that policies by which CCs were governed are formulated outside the system. This should be redressed by involving CC personnel in policy making activities. Participatory management is a viable strategy for consideration here.

Recently, CCs were directed to change from three-year to two-year institutions. However, those CCs supervised by private entities refused to comply and their position was upheld in court. Such a two-year restraint on public CCs precludes any consideration of establishing three-year and even four-year programs that would serve future employment opportunities requiring highly technological and advanced technical skills. It also precludes filling obvious gaps in the skill level hierarchy.

Reference was made by officials interviewed to a new Jordan educational law, number 27-2988. The law provides for planning at national and local levels, giving more local autonomy for portions of funding, requiring computer literacy in grades 9 and 10, and a strong "experimental" approach in grade 10. The law also strengthens guidance programs.

3. Systems

Efforts are being made to establish a Management Information System (MIS) for all higher education. Planning, evaluation and performance monitoring are concomitant to an MIS. The MOHE is introducing a system of accreditation for the CCs that is focused on improving the standards for teacher certification, quality of instructional materials, curricula matters, and student achievement. The CCs will have 5 years to comply with accreditation standards or will face de-accreditation and closure. An operational MIS would be helpful in facilitating accreditation and similar systems requiring a comprehensive data-base. An MIS for CCs is needed and should be compatible with the MOHE MIS already started. It is needed for the CC Directorate to become more proactive in dealing with change. An MIS coupled with a program evaluation system form the basis for ongoing program development and change.

Briefly mentioned earlier, and verified by the Jordanian Team, was that no long-range plan currently exists for the CCs. The last plan mentioned was for the years 1988 - 1990. The status of the 1991-95 plan is unknown at this writing.

4. Locations

The Jordanian Team found that locating a public CC was determined largely "by the population and the needs, but for private CCs it needs only an application and a feasibility study." No doubt, existing data do not allow precise estimates and forecasting, but economic development, demographics, employment change, and other factors are certainly important in making decisions about location or expansion of education or training institutions.

The Jordanian Team members provided the following information about some of the public CCs and their locations under the MOHE and one private CC. These were visited by the Jordanian Team members for data gathering purposes.

**Distribution of Community Colleges Offering Vocational Technical Programs by Location**

| College | Location |
|---|---|
| Amman Poly CC | Amman |
| Alsalt CC | Salt |
| Al - Hosun CC | Irbid |
| Al - Tafiley CC | Tafileh |
| Al - Khawarizmi CC | Amman |
| Arab Community CC | Amman |
| National CC | Amman |
| Intermediate CC | Amman |
| Al -Zarqa Private CC | Zarqa |
| Iben Khaldoon CC | Irbid |
| Hoteling CC | Amman |
| Al - Shobak CC | Shobak |
| Wadi - Al - Sir CC | Amman |

5. Evaluation

Only recently have institution and program evaluation processes received attention. A clear-cut, comprehensive, system wide evaluation model is not yet in place, but elements apparently are being considered. The Community College Directorate contains sections for examinations and measurements, computers and statistics, and planning and research. An overall evaluation coordination strategy should be developed.



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6. Professional Standards

Professional preparation of the ministerial and institutional CC administrators seems to vary, but certain standards are imposed. For example, the CC Director is required to have a doctorate, preferably the Ph.D. in education. In addition, the Director must have two years experience. Doctorates are obtained outside Jordan, usually in the United States, England, Egypt, and some European countries. Administrative personnel serving at the deputy level in both the ministry and at the CC institutions must have the equivalent of the master's degree. It is preferred that deans of CCs have doctorates. All CC instructors are required to have the baccalaureate degree. Private CCs must have a medical doctor and a nurse on staff.

## C. Admission and Guidance

1. Admission Policies

Interviews inevitably led to the prevalent attitude of the unrealistically high educational aspirations that Jordanian families have for their children, thus placing higher education in great demand. This tends to place excessive demands on the limited places in higher education available for students. Admission to higher education, including the CCs, via competitive admission examinations, is resisted by families holding such high educational aspirations for their offspring. They apparently desire a more open admissions policy.

Thus, enrollment at CCs is not necessarily market driven. It seems to be driven more by aspirations and financial and moral support from families than by the job market. Such familial pressures often serve to insulate the educated unemployed from the realities of the job market.

The Jordanian Team found in their employee survey that some 38.2% of the persons interviewed had attended CCs, 0.8% university, 30.4% secondary vocational education, and 10.3% VTC training. It should be recognized that this CC percentage probably is not representative of all employees in Jordan.

Data were unavailable on the length of time they were enrolled in CCs, or the types of programs studied or whether programs were completed. The reason for mentioning this here is that employment performance, graduation data and the like, when compared to and correlated with admissions data, give some excellent indicators of quality, efficiency, and effectiveness of CC programs.

Information about the numbers of students who applied for admission to the CCs but were not admitted due to lack of space in programs or in schools,



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was not available. Also, not available were figures on possible excess student places by program and by school, if there were any.

2. Guidance Functions

Jordanian officials interviewed indicated that guidance is used to help the secondary students know their abilities. Entry into higher education, including Community College, is linked to the ability and achievement of students. At the secondary level, students are tracked into the classic college preparatory or vocational tracks. As is true throughout the world, this practice in Jordan serves to stigmatize vocational tracks, and that stigma has the propensity to continue as students enter CC programs. So it follows that guidance activities that ultimately impact CCs should begin in secondary school, and even in primary grades. Guidance, starting in primary grades and continuing throughout the education system, has great potential for alleviating the stigmatization problems for vocational and technical education.

Jordanian CC students are faced with making education and career preparation decisions. A functional guidance system, complete with appropriate diagnostic and counseling services, is needed for collecting and transferring information about jobs, employment, the preparatory routes, and education and training programs that will result in success and satisfaction in a career. It should be noted that students with CC diplomas can compete for spaces in university programs in the same specialty. To do so, they are required to pass both theoretical and practical or performance examinations.

3. Enrollment

Information about students entering the CCs was scarce. The need is for baseline data in the form of student profiles, data to serve as departure points for monitoring each student's progress through a program. A student profile would contain details such as educational achievement, military service, employment record, interests and stated future goals.

Tables III-1 and III-2 contain enrollment figures for 1989 - 1990 in the CCs. Data were collected by the diligent efforts of the Jordanian Team after departure of the USAID/AED Team. Table III-1 contains enrollments by supervisory authority, totals, percentages, and sex, for the first-year and second-year students. Table III-2 contains enrollments by program, totals, percentages, and sex for first-year and second-year students. In interpreting the percentage enrollment figures in Table 1, it appears that private CCs are increasing student enrollments more rapidly than public CCs. Similarly, percentage male enrollment increased over female enrollment when comparisons are made between first-year and second-year percentages.

**Table III-1: Community College Enrollments by Supervising Authority**

**1989-1990**

| Supr. Authority | 1st-Year Students | % | 2nd-Year Students | % | Total | % |
|---|---|---|---|---|---|---|
| MOHE CCs | 8,351 | 26.3 | 8,992 | 33.1 | 17,343 | 29.4 |
| Other Govt.CCs | 1,508 | 4.7 | 1,373 | 5.1 | 2,881 | 4.9 |
| UNRWA CCs | 626 | 1.9 | 564 | 2.0 | 1,190 | 2.0 |
| Private CCs | 21,314 | 67.0 | 17,227 | 59.8 | 37,541 | 63.7 |
| TOTAL | 31,799 | 100.0 | 27,156 | 100.0 | 58,955 | 100.0 |
| Females | 11,118 | 35.0 | 10,204 | 37.6 | 21,322 | 36.2 |
| Males | 20,681 | 15.0 | 16,951 | 62.4 | 37,632 | 63.8 |

*Source: The source of the above table and those that follow is Jordan Ministry of Higher Education, Community College Directorate, October 1990.

**Table III-2: Enrollment by Community College Program 1989-1990**

| CC Programs | First Year | | Second Year | | Total | |
|---|---|---|---|---|---|---|
| | Female | Male | Female | Male | Female | Male |
| Social Works | 48 | 153 | 64 | 153 | 112 | 306 |
| Air Aviation Service | 0 | 21 | 10 | 45 | 10 | 66 |
| Applied Fine Arts | 132 | 345 | 161 | 325 | 293 | 670 |
| Hotel Management | 2 | 64 | 3 | 48 | 5 | 112 |
| Computer | 618 | 1672 | 489 | 1052 | 1107 | 2724 |
| Admin. & Finance | 1568 | 4524 | 1389 | 3062 | 2957 | 7586 |
| Para-Medical | 882 | 1771 | 742 | 1331 | 1624 | 3102 |
| Agricultural | 5 | 81 | 9 | 46 | 14 | 127 |
| Engineering | 70 | 1555 | 158 | 1407 | 228 | 2962 |
| Educational | 174 | 323 | 2086 | 2975 | 2260 | 3298 |
| Academic | 7619 | 10,172 | 5093 | 6507 | 12,712 | 16,679 |
| TOTAL | 11,118 | 20,681 | 10,204 | 16,951 | 21,322 | 37,632 |

## D. Curriculum

Officials interviewed alluded to many activities currently focused on comprehensive reform at all levels and institutions in the entire system. In several instances mention was made of the large text book development project. Efforts to determine whether this project included textbooks for CC programs were not fruitful.

1. Procedures

The Jordanian Team provided the following relative to CC curricular matters:

a. Curricula for technical programs are "accredited" by special committees formed by the Ministry. Although committee membership was not known, programs must meet standards to be accredited.
b. Community Colleges revise curricula whenever there is a need; revision is not done on a given time schedule but is done as a continuous process. CC instructors suggest improvements after the program has operated for two years and their input forms the basis for revision.
c. Curriculum materials preparation is done by special committee (assigned and approved by the Ministry) in the field. They decide what materials to develop based on a needs analysis.

The above information raises more questions than it can provide answers. For example, what are the processes and criteria by which curricula are "accredited"? What is the process and nature of the needs assessments that lead to curriculum revision? Are materials prepared by external agencies also used in the instructional programs; for example, materials available from ILO and others?

The Jordanian Team also found that instructional supplies are provided by the CC itself. Sometimes the CC asks the Ministry to provide some supplies or other instructional items, and the Ministry procures such from the local market.

2. Competency Basis

Although the USAID/AED Team sought information in depth about whether CCs were using competency-based or performance-based materials and instruction, little evidence was provided to corroborate the statement that, indeed, the CC programs did tend to be using the competency-based education and training model.
The CC programs stressed their use of practica, but practica stations for certain programs were difficult to find. Employers can receive a tax rebate if they provide students with field training or practicums. The employer certifies student achievement and performance in each module, which implies the use of competency-based materials.



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3. Testing

The use of tests and testing seems to be increasing in Jordan. Testing is used to regulate initial educational and occupational opportunities. The testing enterprise itself is unregulated. Testing required by public schools, colleges, and universities should be subject to some oversight that would hold them more accountable to the public, especially those whose careers and educational pursuits are directly effected. Few mechanisms currently exist for auditing or evaluating the quality of such tests. Clearly, some types of tests are used for monitoring progress through a training program and for screening entrants into or out of programs at different levels. It follows then that tests, testing, and test administrative practices should be subject to oversight. Also, staff needs training in test development and administration as parts of instructional management and accountability.

## E. Linkage with Business and Industry

The MOHE Central Administration of CCs expressed an urgent need for the system to become more responsive to population, employment, and industrialization trends. Officials indicated that needs assessments should be conducted, field training should be expanded, a data base or MIS should be established, and training sessions for staff should be provided. In the work continued after the departure of the USAID/AED Team, the Jordanian Team reported that "CC administrators and teachers contact the agencies and the industries through the Dean's office, but no committees or councils are used." Staff should be trained in the establishment and use of advisory committees and councils comprised of representatives of business and industry.

## F. Teacher Training and Staff Development

Community College faculty members are now being required to have a baccalaureate degree to meet certification and accreditation standards. Presently, there are provisions for using persons without degrees as instructors in some of the technical programs. There are many such persons available who possess high levels of technical skills that have been gained through business, industrial, military, and other forms of work experience. Most non-degree instructors have little pre-service pedagogical training but are expected to obtain such on an in-service basis.
Some CCs have helped prepare instructors for the VTC Centers. This implies that the CCs have some degree of expertise in teacher education and training, some aspects of which might be tapped for internal staff development activities. Skills in basic methods of instruction, instructional management, and other elementary pedagogical skills are probably available from the present CC staffs. An assessment of staff expertise might reveal a wealth of such skills that could be used in staff development activities.



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The Jordanian Team attempted to obtain information about personnel evaluations and annual reviews. They reported that because CC personnel are governmental employees, they are evaluated according to the Civil Service promotion standards using a special form as an instrument of evaluation. The Jordanian Team indicated that there were no examinations in use for licensing CC personnel.

Although no definite staff development plan exists, the CCs are expected to upgrade their teaching staffs in technical programs through training sessions and meetings on an in-service basis. Measuring the effectiveness of such training activities would be difficult since no plan as such exists.

Likewise, no explicit plan exists, nor is one being developed, for in-country teacher training scholarships or for external scholarships. According to information received, whenever the need arises the Ministry sends people on scholarships both in-country and outside the country to receive training in teaching and administration. Data were not available about the numbers of teacher resignations or shortages by program, college, or country totals. As a result, no estimates were forthcoming concerning the demand for CC teachers in the near and long term.

Table III-3 contains figures on the numbers of teachers and their degrees by sex and supervisory authority. The figures in Table 3 show that some 257 teachers hold the intermediate diploma. It is surmised that most of these teach in the various technical education areas of the CCs and would benefit from well-planned staff development programs. This does not mean, however, that staff development programs should be directed only to them. Other degree and diploma holders need upgrading and updating, including those holding the doctorate.

**Table III-3: Community College Teachers Professional Preparation 1989-1990**

| Degrees Held | MOHE CCs | | Other Govt. CCs | | UNRWA CCs | | Private CCs | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | F | M | F | M | F | M | F | M | F | M |
| Ph.D. | 1 | 41 | 3 | 67 | 0 | 2 | 2 | 30 | 6 | 140 |
| MA/MS | 8 | 103 | 6 | 85 | 1 | 6 | 33 | 206 | 48 | 400 |
| Higher Diploma | 11 | 39 | 36 | 60 | 0 | 0 | 3 | 16 | 50 | 115 |
| BA/BS | 107 | 280 | 28 | 134 | 7 | 27 | 117 | 400 | 259 | 841 |
| Inter-mediate Diploma | 7 | 73 | 34 | 95 | 0 | 0 | 15 | 33 | 56 | 201 |
| Total | 134 | 536 | 107 | 441 | 8 | 35 | 170 | 685 | 419 | 1697 |

## G. Facilities and Equipment

Growth in school-age population and compulsory school attendance to grade 10 have placed heavy burdens on school facilities. The CCs have experienced enrollment growth, placing similar burdens on facilities. As facility demands grow, the use of rented facilities seems to be a quick alternative, but this works better for private than for public CCs. The government has used facility renovation and upgrading to alleviate space problems. Rented facilities are less suitable for secondary vocational and CC technical education programs. As Jordan continues its long-range plans to provide additional space, much planning is needed to assure that comprehensive and timely estimates are made of facilities utilization before sites are selected, facility types and sizes are determined, and program offerings are finalized. Facilities should be program driven, especially new construction.

According to interviewees, facilities and equipment were the factors causing the greatest increase in costs of education and training. In June, 1990, the Council of Ministers approved the construction of 30 school buildings as the first stage in the new construction program. Some JD 40 million are to be made available from 1990 to 1998 to equip programs with technical facilities, including shops and laboratories. How much of this might be used for the CC technical programs was not ascertainable at this time. Nevertheless, the output from such increased funding in secondary programs will have an impact on CC enrollments.



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Since equipment represents a sizable percentage of the investment in technical programs, careful control and management is required. There was no evidence of an effective equipment management system. The CCs would benefit from such a system, but it should be applied to other education and training agencies as well.

## H. Employment of Graduates

Very few, if any, of the MOHE CCs have a placement office as such. Help in seeking and obtaining employment by graduates and program completers is given on an informal basis by CC faculty and staff members. However, it seems tenable to suggest here that a placement office be started in each CC. The placement office could obtain and keep information about each graduate or program completer on record. Direct assistance could be rendered on an individual basis or in small groups. The placement office would be responsible for inviting and scheduling presentations by prospective employers so that students could obtain expert information about jobs and the nature of work.

## I. Funding

Funding for private CCs comes primarily from tuition and gifts/grants; i.e., its own system. Financial resources to support the public CCs comes from the national government and tuition and fees. No information was forthcoming about financial resources from other sources similar to those of secondary schools where the principal is allowed to supplement allocations with local fund raising activities.

All CC funding from all sources was estimated to be approximately 18 million JD in 1990. Detailed figures about fund allocations by program and by institution were not available but were obtained for the entire system as seen in Table III-4. For any publicly supported endeavor, data on efficiency, effectiveness and quality should be used in conjunction with allocating funds to individual programs and institutions. It was estimated that approximately 75% of funds are spent annually on salaries and wages, probably 5% to 10% on construction, the remainder on utilities, instructional materials and others.

**Table III-4: Community College Recurrent and Capital Expenditures - 1987**

| Expenditure Category | MOHE CCs | Other Govt.CCs | UNRWA CCs | Private CCs | TOTAL |
|---|---|---|---|---|---|
| Teacher Salaries | 579,941 | 424,822 | 78,135 | 130,937 | 2,384,835 |
| Admn. Salaries | 323,136 | 289,269 | 25,893 | 658,977 | 1,297,275 |
| Employee Salaries | 219,536 | 95,608 | 5,400 | 153,651 | 4 474,195 |
| Workers Wages | 1,900 | 19,706 | 5,400 | 25,482 | 52,488 |
| Building Wages | 0 | 50,000 | 0 | 163,323 | 213,323 |
| Elec/Water/ Supply | 59,888 | 69,356 | 5,732 | 53,282 | 188,258 |
| Maintenance | 84,862 | 87,136 | 15,190 | 199,668 | 386,856 |
| Stationary | 28,600 | 18,645 | 3,000 | 15,348 | 65,593 |
| Training Materials | 21,500 | 13,250 | 5,008 | 66,834 | 106,592 |
| Grants/Awards | 0 | 107,200 | 0 | 274,105 | 381,305 |
| Living Costs | 236,308 | 146,018 | 8,190 | 10,500 | 401,016 |
| Advertising | 0 | 0 | 0 | 3,500 | 3,500 |
| Other | 15,762 | 43,921 | 13,355 | 766,140 | 839,178 |
| TOTAL | 1,571,433 | 1,361,931 | 155,283 | 3,731,247 | 6,819,894 |
| Captl.Expend. | | | | | |
| Building & Construction | 167,000 | 62,000 | 0 | 1,515,048 | 1,744,041 |
| Equpmnt/Furn. | 115,700 | 117,835 | 0 | 384,771 | 618,306 |
| Books | 0 | 0 | 0 | 650 | 650 |
| Consumables | 0 | 0 | 0 | 15,970 | 15,970 |
| Equipment | 0 | 0 | 0 | 257 | 257 |
| Buses | 0 | 0 | 0 | 1,165 | 1,165 |
| Other | 0 | 177,020 | 0 | 223,620 | 400,640 |
| TOTAL | 2,827,000 | 356,855 | 0 | 2,141,481 | 5,325,336 |

Table III-4 contains data obtained by the Jordanian Team on recurrent and capital expenditures of the CC system for 1987 by category and supervisory authority. Note that private CCs account for some 55% of the total expenditures; from Table III-1, the reader will recall thatthey enroll 63.7% of the students. The sources of budgetary funds are given in Table III-5. It can be seen in Table III-4 that public CCs in MOHE and other government agencies had expenditures in 1987 of JD 6,117,219and private CCs expended JD 5,872,728. The major source of funding for public CCs is from government appropriations while the bulk of private CC funding is derived from tuition and fees.

**Table III-5: Sources of Funds for Community Colleges - 1987**

| SOURCES | MOHE CCS | OTHER GOV.CCs | UNRWA CCs | PRIVATE CCs | TOTAL |
|---|---|---|---|---|---|
| Tuition & Fees | 471,145 | 320,734 | 0 | 3,950,491 | 4,742,370 |
| Profits (moveable & real props.) | 8,250 | 2,069 | 0 | 81,835 | 92,154 |
| Contributions | 79,181 | 7,620 | 149,299 | 11,523 | 247,623 |
| Aid (external) | 51,055 | 155,000 | 3,304 | 0 | 209,359 |
| TOTAL | 609,631 | 485,423 | 152,603 | 4,043,849 | 5,291,506 |

## J. Other

The USAID/AED Team was privileged to visit the Queen Noor Civil Aviation Technical College (QNCATC). Established as an institute in 1973, the QNCATC is now an accredited CC offering diplomas in several two-year programs. It has good physical facilities, 25 regular instructors, and adequate training and demonstration equipment for air traffic controller training and other areas requiring expert instruction in highly critical aviation skills.

Instructors evidenced a noticeable degree of pride and self-confidence in their work during our meeting. They were eager to discuss the details of their programs and were not hesitant in mentioning the need for some additional pieces of equipment. No doubt the criticality of the skills in the air traffic controller curriculum, for which they were responsible, had much to do with their level of pride and self-confidence. Evident also was the quality and pervasiveness of the leadership at this institution. The QNCATC has potential for becoming the training center in civil aviation for all the Arab nations.



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## K. Preliminary Recommendations

### 1. Structure and Governance:

#### a. System Integration

Community Colleges exist in several different ministries so there is a need to consolidate all public CCs under one ministry -- the MOE. The instructor/teacher certification, institutional and program accreditation should all be under MOE.

#### b. Management Information System (MIS)

The CCs lack MIS which can be a significant help to management and staff in all aspects of organization, management, information and communication. The National Center for Education Research (NCERD) has made an excellent beginning in establishing an MIS and a CC system should be established that is compatible with NCERD's. The CCs administration and staff should be involved from the beginning to ensure their understanding, input and ownership of the system. An appropriate in-service training program should be instituted.

#### c. Community Linkages

There is little to indicate that CCs have developed community linkages to the extent that might be expected. A training program should be instituted for administration and staff in this area and in the process plans developed by each CC for implementing the action plans. Special emphasis should be given to developing subject field advisory committees. The private sector and parts of the public sector are the consumers of the products of the vocational and technical education and training system. It follows then that the system, the private sector, and other public sector agencies must work in concert and harmony as partners to achieve linkages that form a collaborative structure which can respond to changing employment and economic development needs.

The acid test of an education and training system is the private sector's reaction to and evaluation of the products. Private sector feedback can be of great benefit in program improvement, system restructuring, and vocational image improvement. During the short time in Jordan, the USAID/AED Team found little concrete evidence of widespread interaction between the vocational and technical education system and

the private sector, at least nothing of a sustained, formalized nature. The private sector must be made to feel a sense of ownership and advocacy for the vocational and technical education programs.

d. Changing Educational Technology

The CCs do not currently have the capacity to be proactive in responding to the changes in educational technology that impact their instructional programs. This problem could be addressed through the creation of an Educational Technology Center in one of the public CCs to serve as a combined curriculum materials development, instructional equipment, and research center. The Center should have a strong in-service or staff development component for diffusing information on the use and application of the latest educational equipment and processes.

2. Administration of Colleges

a. Leadership Development

There seems to be a lack of opportunity for those in CC administration to receive training in planning, applied research, database management and other contemporary aspects of institutional management and leadership. Consideration should be given to the establishment of an Academy for Vocational Education and Training Leadership Development whose purpose would be to enhance leadership and management expertise of college administrators. It could provide training in such areas as institutional planning, promoting entrepreneurship, conceptualization and implementation of competency-based education, data collection and analysis and training needs assessment.

b. Curriculum Development

Most curriculum are time-based, i.e, covering a certain amount of subject content per semester. There is a need to shift to competency and or performance based technical education based on an analysis of business and industry's skill and knowledge requirements. There is a need to provide training in the development and implementation of the system.

c. Staff Development

There is a lack of a system for assessing and providing for individual staff training needs. A staff development program should be designed to access the professional development status of each staff member, identify specific needs and provide appropriate training.

d. Guidance

No evidence was found of an guidance program for CC students. Since most all students need assistance in career planning and development it is important that a guidance system be designed, staff trained and programs implemented to serve the needs of the students.

e. Evaluation

A comprehensive evaluation system focused on the CC does not exist. To be worthwhile, evaluation must be viewed as an integral aspect of organizational design, development, and management. Evaluation is primarily a process within ongoing organizational management, decision making, and planning and is only secondarily a research enterprise. The accountability role of evaluation should emphasize 6 areas: (1) program outcomes, (2) the causal relation between program activities and program outcomes, (3) attainment of program goals, (4) comparisons with similar programs, (5) cost-effectiveness or cost benefits, and (6) the consequences of policies and legislative actions. The advocacy role of evaluation assumes that institutions and programs within the CC system are competing for resources and that the integrity of the evaluation system will bolster the justification or elimination of a program. The program improvement role of evaluation assumes that administrators and professionals want to improve programs by making better decisions about organizational and program options and about the use of scarce resources.

f. Student Placement

The lack of a placement office in each CC is an impediment in linking graduating students with job opportunities, thus the establishment of placement offices should be given priority. The placement office should be concerned with the initial or first-job placement of graduates and should strive to be of assistance in helping place alumni in second, third, or additional jobs. By doing so, the placement office could serve as a clearinghouse for employment information. As time passes, the placement office would need to conduct studies to determine the



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differences in job tenure when the CC helped place the graduates in the first job and when the graduates secured first jobs on their own. Some follow-up studies have been conducted among agriculture, hostelry, commercial, and nursing graduates. Included in the studies were both the graduates and their employers. While these follow-up studies were confined to secondary program graduates, they do reveal a degree of expertise which might be made available to CCs in conducting similar studies of their graduates.

The biggest problem in conducting the studies mentioned above was one of finding the graduates. Wrong, improper, or no addresses and unmarked streets, all served to hamper the survey. The CC placement office might well be the point at which information could be gathered concerning the impact that military training time and unemployment time has on skill retention, and the need for skill upgrading to enhance employment possibilities.

# IV. VOCATIONALTRAINING CORPORATION (VTC)

## A. Purpose

The VTC is a semiautonomous organization responsible for providing vocational training for boys and girls at the secondary level in two year programs. Additionally it provides and monitors an apprenticeship program. The training is provided in twenty-two vocational trades at twelve large scale training centers plus seven small centers for training women. VTC also has an Instructor and Supervisory Training Institute (ISTI) for preparing its instructors and an Occupational Safety and Health Institute (OSHI) responsible for establishing national standards for testing and certifying skilled labor. It is estimated that the 1990 enrollment will be approximately 14,800 males and 8,700 females according to the World Bank Appraisal Report of May 22, 1989. The prime purpose of VTC is to provide trained skilled workers to meet Jordan's manpower requirements through its training centers and apprenticeship program. A five year plan is presently under development so it is not possible to state the long term objectives and the required activities to meet the objectives at this time.

## B. Administration and Organization

The VTC is under the National Board of Education which determines policy for grades K through 12 of Jordan's schools. There is no vocational educator on the Board. VTC is administered by a tripartite Board of Directors chaired by the Minister of Labor. The Board has representation from government, employers and workers. It is also responsible for assessing labor market needs with the assistance of the regional centers. Each of the training centers is administered by a principal with supporting accountants, clerks, typist, storekeepers and librarians as shown in the organization chart Table IV-1. The training staff consists of the training officer, instructors, teachers of cultural subjects and a vocational counsellor. The Table IV-2 shows the distribution of VTC employees by qualifications.

Principals are required to have a BS degree and come up through the ranks starting as a teacher. They attend about six or seven weeks of administration courses. In addition to their general administration duties principals evaluate teachers' performance every four months and send a written report to the central office. The central office sends a letter to the teacher recommending whatever the principal has proposed in his evaluation. They are also responsible for the day-to-day operation of their centers including management, finances, program and facilities.

TABLE IV-1

**ORGANIZATIONAL CHART FOR V.T. CENTER**

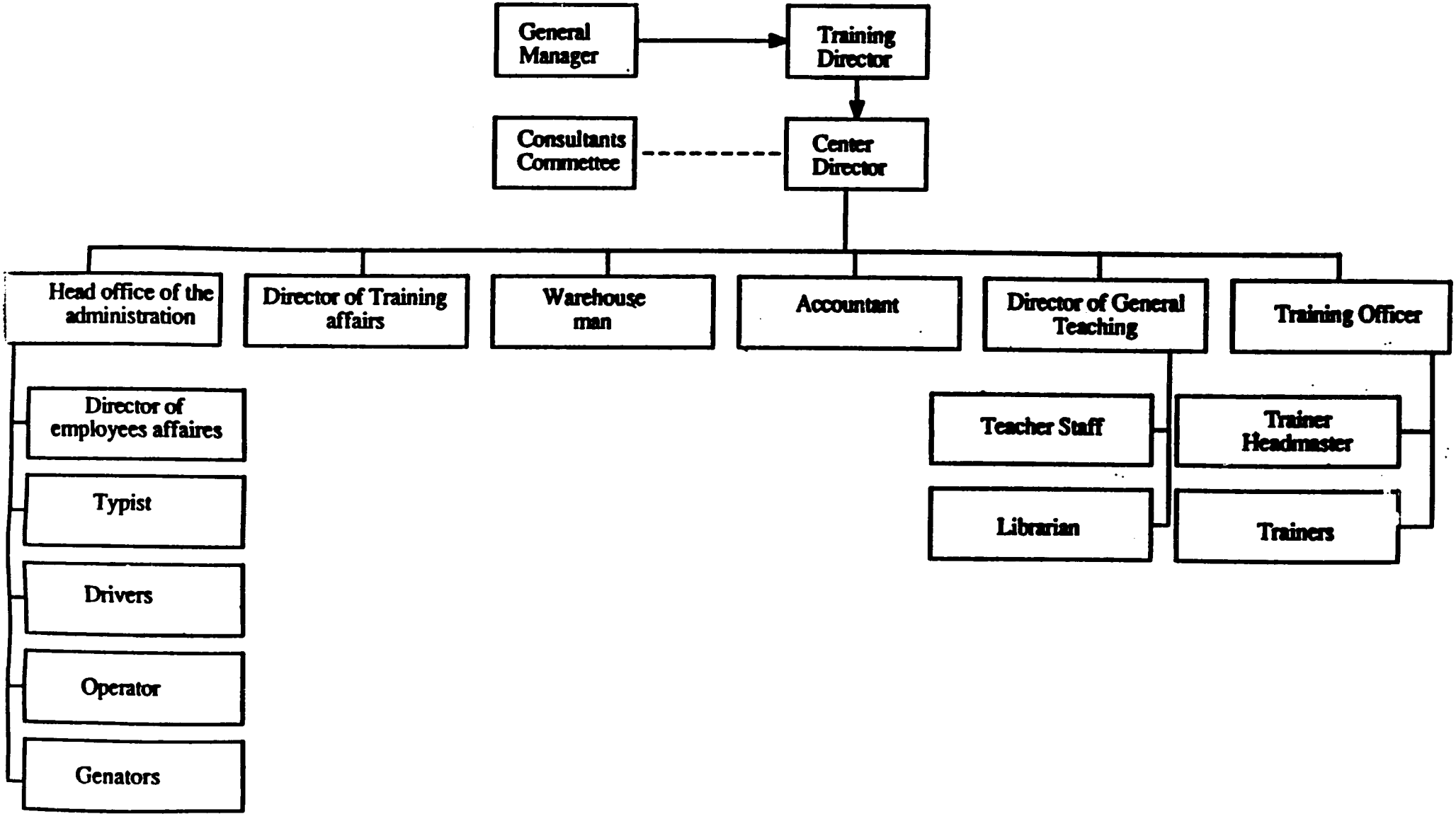

TABLE IV-2

**Distribution of Employees in V.T.C. by type of work Qualification**

| Type of Work / Qualification | administrative staff | officer trainers | Trainers | Teacher | Total Num | Total Perc.90 | Other employees |
|---|---|---|---|---|---|---|---|
| 1. University Graduate | 45 | 51 | 4 | 7 | 107 | 20 | 0 |
| 2. Community College Graduate | 51 | 6 | 110 | 39 | 206 | 36 | 0 |
| 3. General Secondary Class | 28 | 2 | 141 | 0 | 171 | 31 | 5 |
| 4. Less than S.C | 3 | 0 | 71 | 0 | 74 | 13 | 132 |
| Number | 127 | 59 | 326 | 46 | 558 | 100% | 137 |
| Percentage | 23 | 11 | 58 | 8 | 001 | - | - |

## C. Admission and Guidance

The admission requirements for the standard two year program is graduation from the tenth grade. Short course admission requirements depend on the cliental the course is meant to serve and often have no academic entrance requirements.

In 1989 the National Board of Education adopted a policy paper which proposed that 50% of all male graduates and 30% of female graduates from the compulsory education system be provided places in vocational training. They also recommended extension of public education to the 10th grade. This decision will have a significant consequence for vocational education. Additionally the Ministry of Education is transferring most of its technical center (basic vocational programs) to VTC with the exception of some women's programs.

It is obvious that such an ambitious program will take time to implement and be difficult to achieve. Preliminary 1990 figures show 33% of male and 22% of female were admitted into vocational education programs. There is no indication of how the labor market will absorb the large numbers of graduates.

Academic achievement based on averages in 8,9 and 10th grades, is used to determine which students completing the 10th grade may opt for academic programs in grades 11 and 12 or go to vocational programs.

All students who applied to VTC in 1990 were admitted. It is not known to what extent there were unfilled vacancies. Guidance is just now being introduced and teachers are receiving training in this aspect, but it will be some time before a full guidance program will be available to serve vocational students' needs.

## D. Curriculum

The VTC's regular two year program consist of three days at a training center and three days on the job. The in-school part of the program provides an equal amount of time for the general education core, related trade subjects and practical application in a workshop. Previously a third year in-industry apprenticeship was provided but this was terminated this year. Courses are presented by competency based modules following the ILO format. The apprentice training program involves signed agreements with large scale enterprises which agree to provide trainees with rotation through various aspects of a job according to VTC requirements and to pay a modest wage in the amount of 10-15 JD/month for first year students and 12-18 JD/month for second year students. In 1989 there were 6269 students being trained by 2252 employers. A VTC supervisor or instructor visits each trainee weekly to check their progress and sign off their apprentice log book. It is not clear how or if the apprenticeship program will be revised in light of the new two year constraint.



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In addition to its main two year secondary vocational education and apprenticeship program, VTC offers upgrading course for current workers consisting of 150 hours or more of specialized training and three month training programs for unemployed in such areas as clothing fabrication and truck driving. Additionally they provide a short term (one year) skill training program for dropouts or others. VTC aims to respond to training needs as they occur.

Courses for supervisors in industry and business are provided in the areas of safety, hygiene, management and supervision. Some courses are also offered for second level managers. VTC offers small business development help and assistance with their problems under its Industrial Extension program. Through the Urban Development Corporation which builds public housing, VTC provides short term training programs for new owners including women.

The curriculum in the VTC and the MOE vocational programs are essentially the same except that VTC requires practical training in industry. It should be noted that MOE is phasing out vocational training programs in regions served by the VTC.

## E. Linkage with Business and Industry

By its very nature, VTC was designed to maintain linkage with business and industry through its Board of Directors and its apprenticeship program. Instructors have ample opportunity to keep in touch with industry and know of their training needs through the frequent monitoring of apprentices.

Each center has an Advisory Committee composed of representatives from business, industry and parents to ensure responsiveness to community manpower training needs. Additionally, surveys of regional manpower training needs are made to ensure that VTC is responsive to the market requirements in offering short term and specialized training programs.

## F. Teacher Training and Staff Development

Initially instructors were expected to have a degree from a poly technical community college and about six months of pedagogy. New requirements indicate that all shop instructors and cultural subject teachers should have a B.S. degree. Most shop instructors are graduates of an industrial school or a poly technic program and then take their pedagogy courses at the Supervisory Training Institute operated by VTC.

Although some come from industry, indications are that few have had in-depth work experience in their trade. There are six required courses in the teacher training program including Basic Instructional Techniques, Instructional and Educational Techniques, Vocational Counseling, Training by Modular Systems, Problem Solving and Decision Making. In-service courses are offered by the Institute based on an

annual study of all VTC staff,including administrators, to identify training needs. These courses may be from one day to several weeks. Most of the tailor-made courses for instructors are related to upgrading job skills, introducing new methods or improving performance. Approximately 60% of the teaching staff lack B.S. degrees or about 262 teachers/instructors.

## G. Facilities and Equipment

The team has had the opportunity to visit only one VTC training center and so has minimal first hand knowledge of the adequacy of facilities and equipment. However, studies of various reports seems to indicate that more space will be needed to accommodate the additional students who are coming into the vocational stream. Recently MOE has made its facilities available where appropriate. Likewise there are numerous indicators of the need to upgrade old equipment to reflect that used in current industrial practice. No evidence was found of a preventative maintenance system or inventory control. A limited amount of equipment has been donated by industry, such as providing portable shops (trailers) equipped with sewing machines to train apparel workers.

Given the continual contact with industry through the apprenticeship program by many VTC instructors, they are familiar with the type of operations, processes and equipment currently in use. They have identified equipment needed to upgrade the programs with the expectation that the World Bank Education Project will provide the purchase funds.

The training center principals determine the budget for supplies. Bulk consumable and other items are purchased by the central office and distributed to the centers but there are some funds for local purchase.

## H. Employment of Graduates

Most students who find jobs tend to work in the company where they served their apprenticeship. There is no formal system to match students with job opportunities. Similarly follow-up procedures are lacking. The VTC Director has indicated his desire to establish a follow-up office along the lines of the one he implemented in the MOE vocational program. However, funding is a problem. The sample survey of industry noted in Section I shows that 10.3% of the employees sample had received training from VTC. Some 31% indicated that training was very useful while a little over 1% said it was not useful. Perhaps most important, 77% of the employees felt that their training helped them get a job.



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## I. Funding

VTC is funded primarily by the government with some help from employers. Principals can establish cost recovery programs through the sale of goods and services produced by the centers. Profits from such programs must be returned to the central office. The Director indicates that they would like to establish a policy of returning the funds to the producing center on a needs basis.

## J. Preliminary Recommendations

1. Administration and Management

a. Management Information System

There is a need to develop a management information system (MIS) to ensure that VTC central administration and the training centers have all the data available in order to make informed decisions for all aspects of the operation.

MIS is essential for admission and guidance; recording student progress with learning modules; keeping track of inventory and maintenance; assessing frequency of use of classrooms, shops and laboratories; faculty professional status; apprentice training records; follow-up records and placement records to name some of the more important areas. A system for preventive maintenance should be developed along with inventory control to protect the expensive capital outlay for equipment and supplies necessary to all vocational programs.

b. Placement

Since student graduates will be most successful and employers most satisfied when there is a close match between the level of skill achieved in school and those required on the job, it is essential that a student and job profile system be instituted to achieve this goal. Briefly, the system requires a simple ranking of the students' achievement on each major competency during the learning process. The prospective employer has the same competency list and he checks those most critical to job success. The guidance counselor (or placement person) recommends all students with competencies matching those identified by the employer. Thus, an auto mechanic graduate who was excellent in front end alignment but poor in electrical system will be matched with a job where his major task is front end alignment.



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A follow-up or tracer study system should be developed and the VTC Director indicated that this is one of his priorities. The results of these studies should of course be used to improve training program quality, but just as important they should be used to determine which programs should be eliminated due to lack of placement opportunities. The data collected should also be articulated with manpower information to ensure that VTC is meeting the skill training needs of each region of the country.

c. Responding to Student Needs

Given the increase in numbers of students that are coming into the vocational stream from the tenth grade, there needs to be a close articulation between MOE's pre-vocational industrial arts or technology programs and the VTC programs to ensure that students have an understanding of the world of work. Selection of an appropriate vocation is the most difficult decision students will make, so it is critical that they be given as many opportunities as possible to learn as much as they can about job requirements. VTC administrators should consider an initial exploratory program where during the first week or two in a training center, new students can sample three or four different training programs before they make their selection.

Administrators and center faculty need to constantly search for ways to accommodate students with special needs by adjusting the physical environment and the instruction to meet their requirements. Each center should have an permanent committee established to address the needs of this group and ensure that they are integrated into all aspects of school life.

d. Program Flexibility

Every effort should be made to ensure that VTC regular and special programs continue to respond to labor market needs. The variety of short courses offered on an "as needed" basis shows that the VTC responds to a wide variety of training needs. Given the changing economic conditions and Jordan's need to become more self-sufficient, the expansion of short courses is likely to accelerate. VTC should develop the capabilities to train large numbers for a specific new industry such as has been done by the state vocational system in South Carolina.

e. Entrepreneurship

Parallel with this effort a program in entrepreneurship and small business development should be initiated. Consideration should be given to including a segment on entrepreneurship in all the regular two-year programs where students could learn how to start their own business based on their trade/job skills. Opportunities should be provided for Junior achievement or similar types of activities. In centers that may have an excess shop of facilities, consideration should be given to initiating incubator programs where interested students could start small enterprises.

f. Cost Recovery

Since vocational education is costly and there are seldom sufficient funds to do everything that is needed, it would be advantageous for VTC to establish a cost recovery system that could supplement the funds provided by both the government and industry. There are several ways to accomplish this depending on the type of training at each center, but essentially it would mean establishing production centers within the school which would produce either goods or services for sale. Students would gain experience in working on consumer products or services. If work was done outside of class, students could receive a share of the profits as could the instructor responsible for the program. Administrators would need to receive appropriate training in initiating and managing production centers as would faculty.

2. Staff Development

a. Reported Training Needs

VTC reports that approximately 336 of the administrators, instructors, teachers and counselors need additional training in order to meet the new preparation requirements. In addition, about 506 administrators and staff need in-service training, according to the reports. VTC has also indicated a need for 124 person months of overseas technical training in Germany, USA, United Kingdom, Switzerland and Italy. Although the team has not had an opportunity to verify the need for this training, the report seems reasonable especially in light of the increased requirements for professional preparation.

b. Types of Programs Needed

It would seem important that the upgrading and training for administrators include MIS, cost recovery, preventative maintenance, student placement and follow-up, small business development, linkages with business and industry, students with special needs and student vocational clubs. Faculty and support staff would need similar types of training but at a different level.

c. Professional Development

The establishment of a professional vocational technical education association along the lines of the American Vocational Association with departments for administrators, instructors, teachers and others would enhance the profession in many ways. It would provide the basis for discussing problems and their solutions, identifying exemplary programs, recognizing outstanding contributions and enhancing the public image of VT education and training.

3. Curriculum

Although the current practice of developing curriculum under MOE which provides for the assistance of specialist may be adequate for the relative infrequent changes in academic subjects, it lacks the currency needed in VT courses. Under the present system MOE is responsible for all curriculum so it is necessary for VTC to work toward a separate system to ensure program relevancy. Each skill training course should be developed and reviewed annually by a trade committee composed of two or three experienced workers and one or two supervisors from representative industries and two or three teachers of the trade. This should ensure that the competencies specified are those actually needed for the specific trade. The courses should be designed in the competency based format.

Since Jordan is a small country it is important that training output and manpower needs be closely matched to the greatest extent possible. Consideration should be given to more general preparation where appropriate in such areas as the building trades to facilitate program graduates having more than one basic trade skill. Curriculum for the broader preparation should be based on the verified needs and opportunities of the work place.

4. Linkages with Business and Industry

Although VTC has good linkages through its Board of Directors, apprenticeship program and center advisory committees there are areas where

this relationship could be strengthened. Special linkages should be developed with new and arising businesses and industries even though they may not need training at this time. VTC should keep close track of manpower and business/commerce data to be alert to potential developing needs. Small and one owner businesses need help, especially in organizing, managing and operating aspects. As VTC develops its capability to provide entrepreneurship training it should consider providing more short intensive courses for small firms. As vocational student clubs are developed (see item G below) it is important that linkages be developed with business and industry to support and sponsor activities of the clubs. VTC should also encourage the larger industries to contribute equipment, loan experts for training instructors, provide on-the-job training opportunities for instructors lacking work experience and provide some financial support for needy students.

5. Teacher Training

The most significant gap in the teacher training program is the lack of work experience. In-service training for specific skills is helpful, but it is critical that all vocational teachers obtain on-the-job experience. Consideration should be given to requiring instructors who have not had work experience in the trade to spend at least two summer vacation periods working in their trade field.

A system of recognition and rewards for teachers for gaining increased competence and for making significant contributions to the success of a program should be established.

6. Facilities and Equipment

Since the team has visited only one VTC, it is not possible to make specific recommendations for facility and equipment needs at this point.

7. Improving the Status of Vocational Education

Jordanian culture places a high value on education, especially academic education. As in many countries, working with one's hands is not held in high esteem. VTC has a significant opportunity to modify this attitude by working with students, parents, business and industry through the student club concept. These clubs provide an opportunity for students to learn democratic procedures, parliamentary rule, responsibility for holding an office and a wide variety of interpersonal skills. In the U.S. the clubs hold trade skill competitions at the regional, state and national levels with the judging and some financial support from business and industry. The club activities have

considerably enhanced the image of vocational programs through the attendant publicity and just as important, they have provided significant student motivation for doing quality work.

Training for the initiation, organization and management of vocational clubs can be provided by sending selected administrators and teachers to the U.S. and by bringing in a consultant to assist in establishing the first clubs in Jordan.

## V. JORDAN RESEARCH TEAM'S CONTRIBUTION

The consultants' reaction to the accomplishment of the Jordan Research Team's efforts is presented individually in the paragraphs that follow. There is no question that their output was very helpful.

### A. Labor Market Demand

What follows ignores budget constraints and simply mentions a few research/evaluation questions as well as associated data implications. some of these could be pursued by researches, but in other cases a larger effort, involving input from other government agencies, would be required. Moreover, the output of the analysis might be of interest to different agencies, donors, or social partners, depending on the topic. Prior to the question of future analyses, possible improvements in work done to date will be discussed.

1. Improvements to Survey of Employers

It is important to note that the survey involved the preparation of questions in English, translation into Arabic, and translation of Arabic responses into English. While this naturally caused a great many difficulties, it also means that there is every likelihood that actual questions and answers are much more informative than the English suggests. Many of the suggestions offered below might be inapplicable to the Arabic version of tabulations.

There are, for example, a number of grammatical problems with the English version of the questionnaire. A recommended edited version is attached. It might be noted that a serious problem was the virtual repetition of Question 26 in Question 28. It was the intent that the latter replace the former, but this somehow seemed to pass by the typist.

Presentation of results could be improved by the calculation of percentages, with postings alongside of questions. Computer program results provided by Dr. Fathi are included in the attached edited questionnaire.

Some of the survey responses seem rather generous, in view of the later recommendations for improving the skills-development system. It would have been most useful to have discussions with interviewers as respondents often provide more information that can be incorporated within pre-coded questionnaires. As a general matter, it is not necessarily good procedure to divorce questionnaire design from survey execution. As events turned out, this was necessary, but it is likely that interviewers have a good deal more information in their heads than could be included in this Interim Report.

2. Possible Future Data Gathering

Regarding the future demand for specific skills, the best that can be hoped for is that someone will begin to identify market opportunities for Jordanian exports or labor. For reasons mentioned, simple projections of employment trends by occupation are not likely to be efficacious in Jordan. The Ministry of Planning has recently established a Human Resources Division which could assist in this market identification process. Recurrent surveys of employers would be useful step, particularly to identify emerging skill shortages. It is reiterated that business development should precede specific skills development efforts.

Regarding the supply side of skill-development efforts, the central question is whether, with maturity, the system is becoming overly bureaucratized. This might be evidenced by falling utilization rates within public institutions (particularly the VTC), and rising costs per completer. This suggests that further work might concentrate on existing training institutions -- instruction qualifications, retention rates, linkages with employers, costs, and tracer studies of passed-through graduates. Particularly important is the need to introduce a high degree of experimentation in the educational reform process, along with competency-based testing.

## B. Ministry of Education Vocational Training System

The local team has viewed themselves more as technicians than as co-workers or colleagues. In their perceived role, they have done very well. Much of the data we have requested does not exist; we have not asked for unreasonable estimates. The former is, of course, highly informative. When we return, we should do everything together. They will learn how badly they are needed and we can appreciate them more. The feeling will, I hope, become mutual. There is much still needed on MOE programs. All of my MOE requests for data are incomplete. However, data may be unavailable and the request may be frustrating.

## C. Technical Training: Community Colleges

Generally, the Jordanian Research Team responded willingly and enthusiastically to the written formal request to them for information about Community Colleges (CCs). The local team obtained detailed information about enrollments, numbers of teachers/instructors and administrators, numbers of programs, and other numbers that described size and status. Such data are informative and necessary in establishing a baseline picture of CC programs as they currently exist.

The Jordanian Team responded in their report to each item appearing on the written formal request, although for many items the information was unavailable or could not be made available in the limited amount of time for collection. The fact that the Team's report contained a response to each requested item is indicative of the diligent efforts they expended in trying to obtain the data.

## D. Vocational Technical Training Corporation

The concept of having an experienced local team collect data for an assessment of this type was excellent. It saved a considerable amount of time and lost notion on the part of the team and certainly shortened the in-country data collection phase. A second gain was the opportunity to constantly discuss our findings and interpretations with the knowledgeable educators of the host country. Having the local group conduct the employer/employees survey after the consultant team completed Phase I and returned to the United States was much more efficient and cost effective than had the team conducted the survey.

The consultant team feels that the data gathering and the survey results were both useful and very helpful. One additional activity that should be performed is an item by item tabulation including percentages of the data for the employee survey. The summary was helpful, but there are probably more important data that can be gleaned by a complete tabulation. Specific additional information needed is set forth below.

### Additional Data Needs

The following data should be obtained if the time is available for the search.

1. Cost analysis of VTC programs including annual operation, staffing, facilities, supplies and cost per student.

2. Salary schedules for teachers and administrators.

3. New teacher certification requirements.

4. Long range plans (1991 to 1995) for MOE and VTC.

5. What has been done to accommodate students with special needs; i.e., handicapped, women and minorities in relation to facilities, programs and instruction?

6. Are statistics available on average daily use of shops and classrooms, underused facilities, average class age, including range?

7. How are the center advisory committees constituted -- do they have charters or operating manuals available?

8. What are the procedures (in relation to the regular two year programs) for instituting new programs and terminating programs no longer in demand?



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## VI. PROPOSED PHASE II ACTIVITIES

In the paragraphs that follow, each consultant has indicated the scope of the work he needs to accomplish during the three weeks allocated for Phase III. It should be noted that due to the long delay expected in implementing Phase II and the resultant need to spend a considerable amount of time for reviewing and updating data, the original scheduled time of three weeks is unlikely to be sufficient.

### A. Labor Market Demand

The project was structured to include an initial mission to Amman, return to the United States during which data gathering would be carried out by local (Jordanian) consultants, and a second mission to Jordan to tie up loose ends and draft a report. Those intentions have been overtaken by events, but in any case, the idea of split missions was probably inappropriate in the first instance, particularly regarding the question of future labor-market skill requirements. A single mission of, say, six weeks, would likely have been both more efficient and more effective. One reason is that the splitting of survey design from execution invariably causes problems for interpretation and analysis.

The question remains what could be accomplished during a second (three-week) mission to Jordan. Regarding the issues covered in this component of the Interim Report -- the demand for skills, the labor market outlook, etc. -- the answer is "not much, beyond marginal improvements to what has already been suggested." It will likely require at least one year beyond the cessation of Gulf hostilities before Jordan's economic outlook will begin to be clarified.

Assuming a follow-up mission were to authorized, the first priority would be to clarify employer responses to the existing questionnaire. Survey results need to be amplified, as they appear to conflict with responses given in other countries where similar surveys have been undertaken. Apparent positive views regarding public programs (VTC, MOE) require verification by way of follow-up discussions with interviewers. It is possible that responses are somehow biased toward favorable opinions about public programs. It is important to get interviewer feedback regarding some of the open-ended questions (e.g., Question 8i). To reiterate, there is a strong likelihood that Dr. Fathi's report (in Arabic) would include such details. Such clarification could probably be accomplished within one day of such a second-phase mission.

A second step would be interviews with public officials (Planning, Industry, Central Bank, etc.) to determine whether government thinking about possible growth sectors has moved beyond that which existed at the time of the first-stage mission. It is doubtful that this will generate much information, but there is always the possibility of a pleasant surprise.

Assessments of skill-development programs are beginning to emphasize the importance of implementation issues as determinants of likely program cost-effectiveness. Such factors as the degree of linkage between training institutions and employers, outreach to potential students, the "quality" of program administrators (motivation, innovation, cost-consciousness), and similar intangibles appear to be at least as important as program structure and organization. As mentioned, it would be useful to analyze data on costs and utilization rates, and to visit more local institutions (in country travel was not feasible during our previous mission). Costs and other efficiency issues were not mentioned in the project Scope of Work, which is a rather serious deficiency. Presumable, such follow-up work would be the responsibility of a vocational training specialist.

## B. Ministry of Education Vocational Training Systems

Finance aspects should be a major consideration in Phase II. First, there is the question of costs of alternative paths and, if necessary, alternative recommendations. This will require many "in county" estimates. Second, there is the phasing of expenditures or, more specifically, credits. The loan offices may decide the amounts, but we must decide the phasing.

A careful review and assessment of the teacher training component will need to be made along with the preparation of vocational program administrators.

We need to find some way for converging on view which will lead us away from investing in system casualties; e.g., two year MOE vocational centers or VTC programs. These are bureaucracy builders, but they are also polarizing influences. So far, our discussions have involved only one third of the governing group for the VTCs...the government representatives. We also need to talk to the representatives of workers and employers.

## C. Technical Training: Community Colleges

The next phase of work should concentrate on in-depth interviews that would reveal steps, procedures and processes that may currently exist in areas of major concern such as curriculum, instructional management, accountability, measurement of achievement, equipment management, applications of educational technology, entrepreneurship, training, etc.

Extensive field visitations to CCs need to be scheduled. Visits should be of such duration that in-depth discussions can be held and astute observations made. Walk-throughs of facilities have their place and can reveal status, quality and utility of shops and equipment, but do not reveal the details of process in instructional management, for example, or how effective the entire system is performing.

For a myriad of reasons, Phase II should focus on processes and procedures for establishing the MIS for CCs. Various people from all levels and institutions should be involved.

## D. Vocational Technical Training Corporation

The VTC assessment in Phase II should continue data gathering in the areas suggested for additional effort by the Jordan Research Team and in the following areas:

1. Asses the facilities and equipment needs toward making the system more efficient and effective in meeting estimated employment opportunities for graduates.

2. Determine the effectiveness of the teacher training system.

3. Assess the cost of VTC training and ascertain options for improving cost effectiveness.

4. Review the training needs of VTC administrators to propose development programs.

5. Conduct on-site visits of about six to ten VTC training centers to assess programs, faculty, students and capital resources.

6. Visit six to ten industries where VTC apprentice programs are conducted to assess the control, appropriateness of experience and reaction of students and employers.



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## VII. PROPOSED PHASE III WORK SCHEDULE

The schedule that follows is tentative and will need to be revised on-site with input from the team, counterparts and USAID/J.

Week 1

1. Review scope of work and assignments; discuss interim report with USAID/J and counterparts; and identify additional data needs.
2. Identify and schedule field visits to schools and offices; establish format of draft final report; and review with USAID/J.
3. Field visits to schools/offices.
4. Field visits to schools/offices.
5. Field visits to schools/offices.
6. Team meeting to share information, assess progress, review plans for Week 2; discuss format for a final report.

Week 2

1. Review data collection and field visits; identify any remaining data needs.
2. Final day for field visits, data gathering.
3. Review format and development procedures for draft final report; analyze data and start writing.
4. Write report.
5. Write report.
6. Write report; as sections are completed, pass to Team Leader for review.

Week 3

1. Write report.
2. Write report.
3. Assemble draft final; prepare for tripartite meeting.
4. Tripartite meeting to review report: USAID/J, Team, Jordanians identified by AID; recommendations agreed upon to be recorded.
5. Revise sections as required: each team member responds to Tripartite recommendations.
6. Submit final revisions to Team Leader.

# APPENDIX A

JORDAN VOCATIONAL AND TECHNICAL TRAINING ASSESSMENT

## VOCATIONAL AND TECHNICAL EDUCATION SCOPE OF WORK

**BACKGROUND**: The Government of Jordan is currently undertaking a far reaching reform of its entire educational system. The reform is focused on the primary and secondary levels as well as the vocational education system. This effort is being supported by $ 146 million in loan funds supplied equally by the World Bank and the Japanese Government. An important part of this effort involves support for vocational education. The IRBD has conditioned a portion of the support which it will supply to the sector on the execution of a demand study for vocational and technically trained labor. Other support for the sector may be forthcoming from the U.S. Government and other sources. In order to meet conditions for assistance, there is need for a thorough review of Jordan's entire vocational and technical training system. This review must encompass not only the demand aspects, but also must examine the structure of the current system and the implications of future demand on types of training, in which institutions such training should be offered, the geographic distribution of training units, and the size and cost of the overall program. The review must encompass the three main components of the sector: the technical streams of the Jordanian high school system, the Vocational Training Corporation (VTC), and the technical programs of the Jordanian community college system.

I. **TITLE**: Assessment of the Vocational and Technical Training System in Jordan

II. **OBJECTIVES**: (1) to analyze the vocational and technical education sector in order to determine how effective it currently is in meeting the demand for skilled labor; (2) to examine the likely structure of future demand for skilled labor in Jordan and in the region to determine potential impact on the vocational and technical education system; and (3) to determine what improvements in the system need to be made and how they should be implemented and financed so that this future labor demand can be met.

## III. STATEMENT OF WORK:

### A. General Statement:

The contractor, in the course of this assessment shall (a) gather and analyze currently available studies and information on the existing vocational and technical education system including enrollment, course offerings, legal constraints, administrative policies, and employability of graduates (this review must encompass the high school technical streams, the VTC and the technical programs of the community colleges); (b) analyze current Jordanian and regional labor needs and develop scenarios for future Jordanian and regional labor market demand; (c) make estimates as to likely training needs in regard to projected economic trends and resulting labor market demands, both in Jordan and regionally; and (d) determine what changes must be implemented in the vocational and technical education system to meet these needs.

### B. Detailed Statement

1.) Review of the Existing Vocational and Technical Education System.

The contractor shall gather existing relevant documentation on the system and address the following issues.

- How is each component of the system administered? What laws and policies affect the administration of the system? Are there changes required to make the system more responsive and efficient?
- In what kind of occupations do vocational and technical graduates work? What percentage of graduates find work in their specialty? What percentage are unemployed and in what specialties? What do these statistics indicate about the effectiveness of the current system?
- Do employers feel satisfied with the vocational and technical students as apprentices and actual workers? Are they adequately and properly trained?
- Are graduates of one of the vocational or technical education streams (VTC, high school, community college, etc.) more marketable/competitive workers than others and why?

- What labor market projections are used, by whom and to what degree to plan future enrollments, specialty expansions and reductions?
- How are current teachers trained and what additional or different training is needed?
- Are existing facilities adequate in terms of both space and equipment?

2.) Labor Market Demand Assessment.

The contractor shall gather existing Jordanian and regional labor market data and evaluate its reliability. By reviewing the Jordanian and regional economies and prospects for future growth, the contractor shall pinpoint the industries and specialties which will be most likely to exert the most impact on future labor market needs. The contractor is expected to rely largely on existing data, supplemented by interviews with industrial and governmental sources in Jordan, to produce scenarios for future Jordanian labor market demand. Secondary sources shall also be utilized for examining the regional economy and labor markets to determine the nature and magnitude of the demand for technical and vocational labor in those economies and the likelihood of Jordanian participation in these markets.

The contractor shall also examine the impact, both positive and negative, of educational and economic policies set by the Jordanian Government on labor demand creation.

3.) Training Needs Estimate.

On the basis of the foregoing analysis of likely labor demand, the contractor shall provide scenarios for the demand for training in various technical and vocational skills (in terms of both type and level of expertise) over the next five years (1991 through 1995). The objective is to provide as concrete a basis as possible for the near term future development of the technical and vocational training systems.

4.) Recommendations for System Development.

In accordance with the foregoing evaluations, the contractor shall identify modifications needed within the existing structure of the vocational and technical education system. Specific issues to be addressed include:



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- improvements to current structure of the system and method of governance;
- modifications needed in the curriculum and specific course offerings;
- modifications needed in the apprenticeship system;
- projected faculty, equipment and facilities needs;
- location and number of training facilities.

The contractor shall provide detailed recommendations for implementing the necessary changes to the system - both administrative and physical - and estimates for the cost of such changes and suggested means of financing.

Annex A contains further details regarding the nature of all four phases of the expected review.

## IV. REPORTS:

The contractor shall produce a report of all findings from the assessment including an executive summary focused on conclusions and recommendations in addition to a more detailed narrative which covers all activities outlined in the scope of work. At the conclusion of the contractor's field work, the contractor shall submit a draft of the report for review by USAID/Jordan and the relevant technical offices of the Government of Jordan. Comments shall be supplied to the contractor within three weeks. Upon receipt of comments, the contractor shall revise and submit 20 copies of the final report to the responsible technical officer within thirty days.

## V. RELATIONSHIPS AND RESPONSIBILITIES:

One of the vocational education experts (to be specified in the IQC) shall be the team leader for the contract team. The team shall work under the technical direction of a USAID/Jordan project officer from the Private Enterprise/Project Development office. Coordination with Jordan's Higher Council for Science and Technology shall also be arranged through the USAID project officer. The principal liaison for the HCST shall be Dr. Victor Billeh who also heads the newly established National Center for Educational Research and Development. The contractor shall also work in close liaison with selected counterparts from the Jordan Vocational Training Corporation and the Ministry of Education.



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## VI. PERFORMANCE PERIOD:

The expected start date for this work is May 1, 1990. The estimated completion date is twenty weeks after the actual start date.

## VII. IMPLEMENTATION PLAN:

This assessment will be carried out in five phases, involving two separate trips to Jordan by the study team.

Phase 1: The first visit of the study team shall cover a two week period involving initial research and data collection. Additional data collection and research needs shall be defined and arrangements made to acquire the information needed. A subcontract shall be arranged to gather additional data and materials needed for the work.

Phase 2: Over a six week period the subcontractor shall undertake the collection of necessary data and research materials covering such areas as labor market demand and detailed information on the vocational and technical education systems themselves.

Phase 3: The expatriate team returns for a two week period. Working in association with the local professionals, they synthesize all available information and produce a draft report of all findings.

Phase 4: Over a three week period, USAID/Jordan and its Jordanian counterparts in education review the draft and provide comments to the contractor.

Phase 5: Upon receipt of comments, the contractor shall have 30 days to complete and submit a final report. The contract team leader shall have seven days during this period to provide final technical input and editing services for the report.

| Position | Work Days | | | |
|---|---|---|---|---|
| | 1st trip | 2nd trip | Final Report | TOTAL |
| Vocational Education Specialist(#1) | 14 | 14 | 7 | 35 |
| Vocational Education Specialist(#2) | 14 | 14 | | 28 |
| Labor Economist | 14 | 14 | | 28 |
| Educational Management Specialist | 14 | 14 | | 28 |



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Local Subcontracting

| | | |
|---|---|---|
| Sr. Researchers | | 48 |
| Jr. Assistants | (data collection) | 120 |

**VOCATIONAL EDUCATION SPECIALISTS**

These individuals must have an advanced academic degree in vocational and technical education. The individuals should have 5 to 8 years experience in educational evaluation studies. Their main areas of concern shall be evaluating the current vocational education system and making recommendations for improvements specifically pertaining to the adequacy of teachers, curriculum, textbooks, equipment and facilities. It is anticipated that one specialist will investigate these concerns as they relate to the service sector industries while the other concentrates on the Agricultural/Industrial sectors. These roles may be realigned as necessary at the Contractor's discretion. One of the vocational education experts shall be specified in the contract as the team leader for the assessment and shall be responsible for producing the final report.

**LABOR ECONOMIST**

This individual must have an advanced academic degree in labor economics or a related field. The person should have 5 to 8 years experience in investigating labor markets, preferably in developing countries, and demonstrated ability to analyze, survey and predict labor market needs. The specialist shall be responsible, with local subcontractor assistance, for conducting the assessment of current Jordanian and regional labor market needs and developing scenarios for future Jordanian and regional labor market requirements in terms of both numbers and specialties.

**EDUCATIONAL MANAGEMENT SPECIALIST**

This individual must have an advanced academic degree in educational administration and 5 to 8 years practical experience in a related field. The management specialist shall be responsible for examining the administrative structure of the various vocational and technical systems, identifying their problems and recommending specific changes to the system. This includes both organizational and financial concerns.



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## Appendix B

### Team Visits: August 1990

| | |
|---|---|
| 08/07 | Dr. Jawal Al-Anani<br>Crown Prince Consultant for Economic Affairs<br>Managing Director, Center for Economic and Technical Studies |
| 08/07 | Dr. Ahmad Bashayrah<br>Secretary General for the Ministry of Higher Education |
| 08/07 | Dr. Munther Al-Masri<br>Secretary General for the Ministry of Education |
| 08/07 | Dr. Victor Billeh<br>President, National Center for Educational Research and Development |
| 08/07 | Ali Naserallah<br>Director of Vocational Educational Department in the Ministry of Education |
| 08/08 | Dr. Ahmad Atwan<br>Secretary General of Vocational Training Corporation |
| 08/08 | Mr. Hussin Khatid<br>Researcher, Ministry of Planning |
| 08/12 | Dr. Munther Al-Masri<br>Secretary General for the Ministry of Education |
| 08/15 | Dr. M Al-Rousan<br>Deputy Director for Community Colleges |
| 08/16 | Dr. Ahmad Atwan<br>Secretary General of Vocational Training Corporation |
| 08/16 | Mr. Salah Salameh<br>Head of Follow-up Section, MOE |

Schools Visited

08/13 Ain El-Basha Center (VTC)

08/14 Queen Nor Civil Aviation College

08/14 Sulleh Industrial School

USAID (frequent meetings were held with related personnel)

Mr. James Dempsey
Director, Private Enterprise and Project Development Office

Mr. Barry MacDonald
Deputy Director, Private Enterprise and Project Development Office

Ms. Marian Kettering
Private Enterprise and Project Development Office



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