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JORDAN

Technical report: Industrial Development Planning in Jordan*

Prepared for the Government of Jordan
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

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CURRENCY

1 Jordanian Dinar	=	1000 Fils
1 J.D.	=	US \$ 1.470

ABBREVIATIONS

CVDB	=	Cities and Villages Development Bank
IDB	=	Industrial Development Bank
RSS	=	Royal Scientific Society
SMI	=	Small and Medium Scale Industries
SCX	=	Sub-Contracting Exchange
JCCC	=	Jordanian Commercial Centers Corporation
JD	=	Jordanian Dinar

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INTRODUCTION

The report covers the activities undertaken by Dr. Akhter Mustafa Khan, Consultant, Industrial Planning within the framework of UNIDO Project JOR/87/009 'Industrial Advisory Services and Training'. The project aims at strengthening the capabilities of the Ministry of Industry and Trade to support industrial planning and development in the country.

Terms of Reference

1. Review the status of the progress of industrial sector in the light of the current Five-Year Development Plan of Jordan, particularly the achievement and shortcoming of the implementation of the industrial plan, and suggest modification/ adjustment and remedial measures thereon, if appropriate and necessary;
2. Set out a strategy for a timely and systematic implementation of the industrial plan, including rolling/annual plan, and for the drafting of the next 5 Year Plan;
3. Define the framework, scope and modality of the study and analysis of selected industrial sub-sectors as part of the industrial sub-sector planning exercise; and
4. Review the existing capacity and capability of the Ministry for carrying out the above tasks and consider whether any assistance is needed to facilitate the Ministry's present and future tasks of industrial planning, implementation and monitoring, etc.

Description of the Mission

Consultant, Industrial Planning arrived in Jordan, on a three month assignment, on June 15, 1989. After initial discussions with the officers of the Ministry of Industry and Trade, Ministry of Planning and other concerned agencies, the consultant prepared a detailed work plan which was submitted to the Ministry of Industry and Trade and UNIDO. It was realized that more time would be required to effectively complete the tasks outlined in the work plan. Accordingly, it was agreed to extend the assignment of the Consultant by another three months to enable him to complete his investigations and report.

The present report corresponds to the above terms of reference and was completed during June- December, 1989.

Jordan has achieved significant progress in the industrial sector during 1970s and early 80s, but the favorable climate that Jordanian manufacturers experienced no longer prevails and the pace of industrial development has considerably slowed down. Since the industries sector is envisaged to play a significant role in the economy of Jordan, a new strategy for preparing an integrated plan for industrial development has been recommended. It would involve a thorough review of the policy parameters, in depth study of industrial sub-sectors and preparation of pragmatic programmes of action, introduction of concepts of rolling plan and annual plans, effective coordination among the implementation agencies and measures for private sector stimulation. The report also gives suggestions for reorientation of the Ministry of Industry and Trade to take up new tasks and identifies areas in which technical assistance is required in the immediate future.

The Consultant had detailed discussions on wide ranging aspects of industrial development with Government and private sector agencies. A list of persons with whom such discussions were held is given as Annex I. A list of salient publications consulted during the period of study is given as Annex II. As desired by UNDP, Amman, the Consultant participated in Regional Workshop on the Enhancement of the Role of the Private Sector in Economic Development held on September 3-4, 1989 and Workshop on General System of Preferences and Export Promotion organized by UNCTAD in cooperation with the Amman Chamber of Industries held on September 17-20, 1989.

The UNIDO project has evinced keen interest amongst the promotional and private sector agencies and a number of requests were being received for project assistance. Accordingly, while extending the period assignment of the Consultant, additional terms of reference were included.

Additional Terms of References

1. Assist the National Project Coordinator in sorting and appraisal of a number of requests being received for project assistance from Government agencies, specialized institutions and the private sector and, in the context of national priorities for industrial development prepare a list of such requests for consideration of the Government and UNIDO;

2. Assist the National Project Coordinator in assessing the achievements and shortcomings of the present project and, in the light of the findings of the Consultants and catering the increasing requirements for accelerating the pace of industrial development, prepare a new framework of activities including assistance required through the project.

It could be noted that the above two terms of reference are, by and large, related to Item 4 of the original term of reference. The requirements of assistance to facilitate Ministry's present and future tasks of industrial planning, implementation and monitoring have been elaborated in Chapter 5 of the report.

Acknowledgments

The Consultant is grateful for guidance and assistance received from His Excellency the Minister of Industry and Trade, the Secretary General, the National Project Coordinator and Officers of the Ministry of Industry and Trade and Planning, UNIDO, Resident Representative and Officers of UNDP Amman.

Grateful thanks are also due to the President and Advisor, Chamber of Industry and Chairman of various sub-sectors, Officers of the Industrial Development Bank and Royal Scientific Society for their valuable assistance. The Consultant is also grateful to his colleagues in the Project for their active cooperation and assistance.

EXECUTIVE SUMMARY

1- REVIEW OF PROGRESS OF INDUSTRIAL SECTOR IN THE CONTEXT OF CURRENT FIVE YEAR PLAN

Significant structural changes in the economy of Jordan commenced in early seventies with rapid strides in the manufacturing sector. The First and Second Five Year Plans for the periods 1976-1980 and 1981-1985, respectively, stressed the role of the industrial sector as a key development pace setter putting heavy emphasis on the rapid development of natural resource based industries.

The recession beginning in 1983 with the weakening in oil prices and the slow down in economic activity in the neighboring oil producing countries, had a profound impact on Jordanian economy. Actual industrial growth averaged 4.9 percent per annum against envisaged growth rate of 17.8 percent during 1981-85.

The current Five Year Plan 1986-1990 envisages a growth rate of 6.9 percent per annum. It has placed emphasis on fuller utilization of capacity, expanding export oriented industries, medium and small scale industries, and certain basic engineering industries like foundry and mechanical workshop, thereby providing employment to 11,000 persons. Significant policy initiatives were taken in August, 1988 by abolishing the system of licensing, creation of a special unit at the Ministry to guide and assist the investors, acceptance in principle of provision of protection, wherever necessary through customs and tariffs, and not by banning imports, and further liberalization of the Encouragement of Investment Law.

Jordan is currently passing through a phase of severe strains in its economic environment. Consequently, implementation of a number of plan schemes has been delayed or postponed. The value of investment in the Industry and Mining Sector was only 75 percent of the planned investment by end of March, 1989.

Trends in industrial growth

The industrial scene is characterized by large scale natural resources based industries using sophisticated technology on one hand and a majority of units using simple technology on the other. Large and medium industries, categorized as having 5 employees or more, accounted for 19 percent of the total of units but contributed 93 percent of value added and 73 percent of employment. Foreign collaboration ventures have been set up for a variety of industries. During 1987, Jordan had 9,769 industrial

units employing 65,816 persons. The value of production amounted to JD 943 million, value added to JD 440 million and exports to JD 203 million.

The fastest growing sectors during the previous decade were pharmaceuticals, cement, paper, cardboard, phosphate, clothes and textiles. Index of Production, 1979 = 100, was 205.2 in 1987 and 188.5 in 1988. Manufacturing sector exports as percentage of total exports increased from 46.6 percent in 1979 to 59.1 percent in 1984.

Challenges and issues in development

The Five Year Plans have outlined goals and guidelines for development of the manufacturing sector. These relate to increasing employment opportunities, integration among various industrial segments, protection of domestic products by all possible means, conducting periodic investment studies and recommending them to the private sector, etc. However, identifiable activities have not been specified nor any institution made responsible to initiate measures to achieve some of these goals. The industrial sector at present lacks a clear sense of direction as well defined industrial policy is yet to be developed. Effective coordination among various promotional agencies is another factor which needs attention to ensure smooth growth of industries.

According to studies, capacity utilization among four major sectors was only 57.4 percent. Fall in the demand for products and non-availability of skilled labor were the main factors contributing to under utilization of capacity.

According to 1984 Industrial Census, the value of fixed assets at factor cost per work place was JD 26,000 for establishments employing 5 or more workers and JD 670 for establishments employing less than 5 persons. Such highly capital intensive industries cannot contribute in achieving the goal of employment generation. The small industries sector which has the potential for providing gainful employment opportunities has been stagnant during the last decade with only 65 new units, on an average, coming up per annum. The weak technical base of the small industries sector would be evident from the fact that although it contributes 26 percent towards total employment, but only 7 percent towards production and 2 percent towards value added.

Although several measures have been initiated and incentives offered for dispersal of industries all over the country, more than 85 percent of industries are concentrated around Amman-Zarqa belt.

Technical deficiencies are a major factor contributing to lower productivity and competitive efficiency of the industrial sector. A recent study, covering industrial units employing 10 or more workers has revealed that only 16 percent workers had education higher than secondary level, 8 percent units had in-house R&D facilities, 49 percent units were utilizing quality control and testing facilities for raw materials and 54 percent for finished products. Industrial units were desirous of in depth studies for improving quality of products, reducing cost of production and market development.

Jordan has adhered to a flexible and indicative planning model where investments marked for the private sector are non-binding and various policy instruments are used to promote such investments. The policy also ensures private sector participation in planning and decision making. In spite of these measures, private investment is not forthcoming to the desired extent.

2. STRATEGY FOR INDUSTRIAL SECTOR PLANNING AND IMPLEMENTATION

New strategy

It has become an economic compulsion for Jordan to adopt a bold and comprehensive programme for intensive development of industries with high degree of export orientation in order to lay the foundation for a self-reliant and self-sustained economy in the long-run. For focusing greater attention and evoking commitment at the national level for accelerating the pace of industrialization, it is suggested that 1990s may be treated as 'THE DECADE FOR INTENSIVE DEVELOPMENT OF INDUSTRIES'.

The next Five Year Plan would thus have the essential features of a perspective plan as well as a rolling plan for industrial development and its effective implementation. Intensive efforts would be required by way of preparatory action. A two pronged approach may be adopted firstly- formulation of an integrated plan for the industrial sector and sub-sectors and pragmatic programmes of action, in depth reviews of policy parameters and stimulation of private enterprise; and secondly- strengthening the planning and implementation capabilities of the Ministry of Industry and Trade, adequate development of linkages and development of data base and monitoring systems.

Formulation of an integrated plan

In order to squarely face the constraints and provide a solid foundation for industrial development, the role that the industrial sector has to play in the economy of Jordan, by way of

contribution to GDP, balance of trade, employment promotion, etc. may be determined at the macro-level. Jordan must aim at a rate of growth commensurate with its aspirations for intensive development of industries in the medium term.

While detailed exercises have been undertaken for selected large scale industrial enterprises, other sectors of industries have been left to the initiative of the private sector. There is need for preparing an integrated plan and action programmes for expeditious development of all major industrial sub-sectors. Detailed plan of study and methodology of sub-sector studies and planning is given in chapter 3.

A few policy-oriented research studies are considered essential to enable the policy makers to rationalise incentives and facilities in line with the objective of accelerating the pace of development. Suggested studies relate to the impact of tariffs as an instrument of industrial growth; streamlining of interest rate and tax structure to make investment in the industrial sector more attractive; study of the pattern of industrial development and imports of manufactured products in ACC and other neighbouring countries, financial structure of small and medium industries, evaluation of adequacy of incentives for industrial dispersal.

Development of small and medium industries

The development of small and medium industries have assumed importance in Jordanian economy in the context of private sector stimulation, creation of employment opportunities and regional dispersal. In recognition of its role, SMI sector may be treated as priority sector for development and its role defined. By way of policy support, a new section on SMIs may be incorporated in the Encouragement of Investment Law, growth of SMIs outside Amman-Zarqa belt may be treated as 'economical projects', minimum ceiling of fixed assets may be either reduced to JD 1000 or done away with, and exemption of tax on net projects beyond stipulated period may also be allowed for privately owned SMIs as in the case of public limited companies.

Industrial estates are an ideal tool for healthier growth of SMIs. Completion of large industrial estates is delayed due to constraints of resources. The activities of municipalities for setting up mini-industrial estates may be fully encouraged. The private sector's participation may be encouraged in the setting up of industrial estates by allocating suitable locations on lease or outright sale basis to groups of private entrepreneurs

or their cooperatives and requisite technical and financial assistance provided to them.

Extension services

The Ministry of Industry has taken a welcome step in setting up a new Directorate for Investment Promotion- 'One Window Service' for prospective entrepreneurs. The activities of the Directorate require substantial expansion to provide relevant development, regulatory and technical information to prospective entrepreneurs. Identification and motivation of prospective entrepreneurs should also constitute an important activity. All the prospective entrepreneurs who have applied for registration, technical persons returning from abroad, young persons graduating from technical institutions, constitute significant material for motivation and provision of intensive escort services for developing their proposals into productive ventures.

Technical services

There is urgent need for providing extensive technical services through coordination of the activities of all technical institutions and promotion of private consultancy services. As follow up of sub-sector plans, an active programme of modernization may be taken up to cleanse the units of their operational constraints and make them more competitive. The small industries sector, largely dependent on construction activity, which has now slowed down, needs guidance and advice regarding diversification of production activities.

Market research and development

The sub-sector studies would pinpoint weaknesses and identify action programmes to strengthen domestic and export marketing. An ITC project 'Export Development and Diversification' is already providing a comprehensive range of services. Setting up of sub-contracting exchange would go a long way in solving the problem of low capacity utilization and should be expedited.

Role of voluntary agencies

In an active pro-private sector environment, representative bodies of entrepreneurs like Chamber of Industry have a significant role to play in providing a wide range of services.

The Chamber of Industry should be strengthened and fully equipped to provide extension services for the accelerated development of

small and medium scale industries. The Chamber should also have a separate Division for Export Promotion.

There is a need for active cooperation between the Chambers of Industry and Commerce specially with regard to marketing of SMI products. It would be useful to organize a workshop for defining the precise role of the Chamber of Industry and ensuring that it is properly equipped to perform the desired activities.

Institutional Arrangements For Industrial Planning

Jordan has already a developed institutional structure for the five year plans formulation with clearly defined roles for the Higher Council of Planning and its working committee, the Ministry of Planning, and the Special Committee for Industry and Trade.

The planning process would have to undergo a radical change as it cannot be confined to the public sector alone in a situation where the Government is looking to the private sector for investment in productive activity and in high priority areas.

For preparing a comprehensive programme for industrial development beyond the perspective of the Five Year Plan, the concepts of rolling plan and annual plans should be introduced for effective implementation. The activities of the Productive Projects Division of the Ministry of Planning should include: preparing a perspective macro economic framework and development alternatives, determination of criteria and economic parameters for project development, upgrading standards of planning through organization of high level dialogues for drawing up strategies for sectoral development, ensuring close coordination between industries and other sectors of the economy, providing training and orientation to planning cells in the line ministries through workshops or regular training in planning techniques.

Planning activities in the Ministry Of Industry And Trade

There is at present no specific Directorate in the Ministry which is responsible for planning and monitoring of programmes of industrial development. The Ministry is rather overwhelmingly burdened with regulatory work. This has often led to neglect of important areas like sub sector strategies formulation, programme reviews, etc. Although policy areas have been identified but the Ministry is handicapped in decision making due to lack of data and adequate capabilities of economic analysis.

With a view to making the process of planning, implementation and monitoring of development programmes more effective, it is considered essential to establish a separate Planning and Coordination Directorate at the Ministry which would be responsible for comprehensive planning i.e., identification of development and policy issues for decision making, preparation of sectoral and sub-sectoral plans, annual plans, reviews of progress and concurrent evaluations.

Industrial Development And Coordination Committee

There is at present no institutional arrangement for coordinating the work of various agencies concerned with industrial development with the result that some activities are thinly dispersed or duplicated rather than forming part of a coordinated effort. The Ministry of Industry may take the lead in coordinating the activities of all concerned agencies. It is suggested that the Ministry may constitute an Industrial Development and Coordination Committee. Indeed, the Special Committee for Industries sector, constituted at the time of preparation of Five Year Plan, may be broadbased and given a permanent status.

Strengthening of data base and monitoring

The Ministry has taken a significant step in setting up an Information and Studies Division to strengthening the data base. Under UNIDO project, a Data Base Specialist has appraised the present efforts and made suggestions to strengthen the data base to meet increasing computerization needs, appointment of certain key personnel and procurement of additional software and hardware. These suggestions may be considered for implementation.

The Ministry of Planning has already evolved a monitoring system for all plan projects with an outlay of JD 2 million and above. There is need for a more detailed monitoring system in respect of physical achievements as well as effectiveness of policies at macro and sub-sector levels to ensure that performance remains on course. For this purpose, performance indicators may be prescribed for monitoring. Illustrative indicators are given in the report.

It is essential that a close watch is kept on healthy growth of individual units. Banks are in the best position for early detection of any shortcomings or incipient sickness through warning signals that become evident from time to time. The Branch Manager of the Banks should primarily be responsible for picking up such signals and taking remedial action. In case a unit really falls

sick, a system of revival package comprising start up expenses, contingency loan assistance, rescheduling of loans, etc. may be evolved.

3. SUB-SECTOR STUDIES AND PLANNING

Sub-sector studies and planning have become imperative as there is urgent need to promote export oriented and efficient import substitution industries; favorable conditions that Jordanian manufacturers experienced in 1970s and early 80s no longer prevail and a new approach at both macro and micro levels is called for; certain constraints and problems, which have defied solutions so far, like inter-industry and inter-sectoral coordination, under utilization of capacity, increasing competitive efficiency and rate of growth of the industrial sector, diversification, market development could only be solved through in depth sub-sectoral studies and planning.

Sub-sectoral planning studies are primarily designed for:

- a- factual assessment of the performance in order to determine their present status, identify constraints and potential for development,
- b- taking a futuristic view of growth, prepare pragmatic programmes of action to increase competitive efficiency, export worthiness and ensure necessary linkages,
- c- identify promising lines of production and suggest bankable investment proposals, and
- d- provide a clear sense of direction at the sub-sectoral and sectoral levels and suggest suitable measures to achieve the the desirable objectives.

The output of the studies would be comprehensive action programmes for development of existing industries. In respect of new industries which offer scope for development, profiles would be given comprising specifications of new products, target markets, main raw materials, machinery and equipment, value addition, value of investment, etc. to facilitate decision making on the part of prospective entrepreneurs.

Action programmes for achieving the potential would specify roles of respective agencies with regard to modernization, standardization and quality control, technological inputs, training, management inputs, policy support, additional incentives, etc.

Methodology

For developing a meaningful programme of action, the Ministry of Industry and Trade may constitute a working group for organizing the studies and ensuring close coordination of all concerned agencies.

A nucleus cell may be created for each sub-sector study which may comprise an expert fully conversant with the sub-sector assisted by one economist/ statistician and one technical person.

At least four months would be required to complete the field work and prepare plan for each sub-sector. The previous sub-sectoral studies were conducted with the assistance of UNIDO and AIDO. Both of these organizations may be requested for active cooperation for preparing the sub-sectoral plans.

It is desirable that the plans are prepared for all major industrial sub-sectors. In the first phase, five sub-sectors namely textiles, food, chemicals, pharmaceuticals engineering and construction industries may be covered since all spade work has already been done in an earlier study. In the second phase, other sectors like leather, paper and paper products, printing and publishing, electrical, furniture and wood and service sector industries may be taken up.

Follow-up of sub-sector plans

With a clear perception of the futuristic role of the sub-sectors, suitable action programmes may be initiated both at macro and micro levels, followed up by monitoring of progress, organization of escort services and modernization of the sub-sectors.

Modernization of sub-sectors

The main objectives of the modernization programme are: improvements in production technology, designs, standardization and quality control, selection of proper machinery and equipment, raw materials, upgradation of skills of personnel and application of management technology. An integrated approach is required for successful modernization of the sub-sectors. An essential feature for the success of the programme is willingness and active participation of the units themselves. Such units may be registered with the respective technical institutions and should contribute towards the cost of techno-managerial assistance and training. A special scheme for advancing liberal long term financial assistance for modernization purposes may be initiated.

4. STRENGTHENING OF THE MINISTRY OF INDUSTRY AND TRADE

In a private sector oriented industrial development environment, where the private sector agencies are not yet in a position to perform their desired role, the Ministry would have to assume the role of a catalyst for providing all essential services and, at the same time, encourage and assist the development of private sector agencies to take up their desired roles.

A review of the working of the Directorates reveals considerable gaps between activities originally envisaged and those actually being performed. Such gaps are more prominent in respect of promotional activities and various types of studies envisaged to be undertaken and could be attributed to the lack of adequate and trained staff, non-availability of data and preoccupation with regulatory activities.

New orientation

The Ministry would have to be adequately strengthened and assisted to perform certain key activities to give the desired push to industrial development like preparation of sectoral and sub-sectoral plans and programmes of action, periodical reviews and initiation of activities relating to economic analysis and policy development, technical and technological upgradation, training, market research and development, stimulation of private enterprise and strengthening of data base and monitoring. These activities would involve setting up a new Directorate of Planning, and strengthening and reorganization of the existing directorates.

Directorate Of Planning And Coordination

With a view to making the planning process more effective and provide much needed support to the Ministry of Planning, a separate Directorate of Planning and Coordination may be set up. Such a unit would primarily be concerned with:

- a- preparation of planning framework viz. information system, performance reviews and monitoring, identification and development of policy issues;
- b- preparation of sectoral and sub-sectoral plans and programmes of action, and
- c- development of linkages both within and outside the Ministry and working as secretariat of the proposed Industrial Development and Coordination Committee.
- d- working as nodal agencies for UNDP, AIDO, USAID, and other agencies providing assistance for industrial development.

Technical development

The Directorate of Industries may be renamed as Directorate of Technical Development and assigned with the work relating to

- a- technology upgradation, transfer of technology and modernization,
- b- setting up and operation of sub-contracting exchange,
- c- coordination of activities of all technical agencies,
- d- organization of training activities relating to Government and private sector establishments;
- e- advising the Ministry on all technical matters.

Activities of the Directorate of Standardization and Quality Control may be strengthened on the basis of detailed appraisal and formulation of action plans as envisaged in the UNIDO project.

Economic analysis and policy research

The Directorate of Encouragement of Investment and Studies may be strengthened for additional activities relating to

- a- policy related studies and economic analysis of current issues,
- b- coordination of activities of various agencies relating to economic surveys and studies;
- c- industrial finance,
- d- tariff policy, and
- e- advising the Ministry on all economic issues.

The Data Base Specialist has already given detailed suggestions for strengthening computerization in the Directorate of Information and Studies.

Market research and development

The activities of Directorates of Economic Cooperation and Export Promotion and Trade need strengthening for intensification of their activities. An ITC project is already providing assistance in export promotion activities.

Investment promotion

The Directorate of Investment Promotion (One Window Service) may be strengthened to:

- a- intensify existing activities in order to provide comprehensive range of escort services including organization of workshops and training for prospective entrepreneurs;
- b- take up entrepreneurial development activities, and
- c- initiate activities at subsidiary offices of the Ministry at Irbid, Karak and Zarqa.

Requirements Of Assistance

The Ministry of Industry and Trade would require assistance in preparatory activities leading to successful formulation of the envisaged programme for intensive development of industries. Apart from activities already envisaged in the project, assistance in the immediate future would be required in

- a- undertaking sub-sectoral studies and preparing plans of development,
- b- undertaking policy related studies,
- c- setting up of and operation of sub-contracting exchange,
- d- appraisal and formulation of action programmes for developing standardization and quality control and technology upgradation,
- e- preparation of a comprehensive programme of training for Government and private sector establishments, study tours and fellowships for advanced training abroad,
- f- technical assistance for private industrial establishments, and
- g- stimulation of private enterprise.

It is suggested that the scope and nature of assistance required in the near future may be discussed in the forthcoming Tripartite Review Meeting of the UNIDO Project. Apart from the Ministries of Industry and Trade- and Planning, the capabilities of technical, financial and private institutions would also need strengthening. Sub-sectoral plans and policy related studies would lead to specific action programmes for development. Precise areas of assistance could be determined after these studies are completed and the plans prepared.

The requirements of assistance to facilitate Ministry's present and future tasks of industrial planning, implementation and monitoring have been elaborated in Chapter 5 of the report in accordance with the Outputs and Activities envisaged under the Project.

1. REVIEW OF PROGRESS OF INDUSTRIAL SECTOR IN THE
CONTEXT OF CURRENT FIVE YEAR PLAN

Industrial Development 1973-1985

Significant structural changes in the economy of Jordan commenced in early seventies with rapid strides in the manufacturing sector. During the Three Year Plan period 1973-75, the manufacturing sector achieved an average annual growth rate of 32.5 percent, contribution to GDP increased from 11.1 percent in 1972 to 14.8 percent in 1975 and employment from 19,000 to 27,000 persons. There was substantial expansion of capacity and setting up of new large scale units specially in the fields of phosphates, fertilizers, potash and salt. Significant promotional measures included enactment of a new Encouragement of Investment Law, drawing up of standard specifications for a number of products, setting up of industrial estates and initiation of studies for free trade zones.

The First and Second Five Year Plans for the periods 1976-80 and 1981-85 respectively were drawn in an atmosphere of optimism. Both these plans stressed the role of the industrial sector as key development pace setter putting heavy emphasis on rapid development of natural resource based industries. The capital requirements for pursuing such a development strategy were large. Foreign and particularly Arab financial assistance played a key role in the implementation of industrial development strategy of the 1970's and early 1980's. It was envisaged that the natural resource based industries would significantly expand export earnings and augment agricultural production.

Favorable conditions for growth of the manufacturing sector prevailed during the First Plan period 1976-80. Accordingly, the average growth rate of the mining and manufacturing sector was 27.3 percent per annum, income from the sector increased from JD 64 million in 1975 to JD 154 million 1980 at current prices, contribution to GDP from 18.7 percent to 24.1 percent and employment from 27,000 to 40,000 persons. The share in investment of the manufacturing and mining sector allocated during the Plan amounted to JD 229 million or 29.6 percent of the total plan investment. Of this the share of manufacturing sector was 26 percent.

The Second Five Year Plan 1981-1985, taking cognizance of the continuing optimistic trends in manufacturing sectors' growth, envisaged a growth rate of 17.8 percent per annum and the relative contribution of mining and industry to the GDP was expected to rise to about 30 percent at current prices by 1985. There was

correspondingly substantial increase in allocations for investment during the plan period to JD 758.9 million of which JD 230 million were earmarked for potash, fertilizers and phosphate rock projects.

Although Jordan is not an oil producing country, it relies heavily on its oil producing neighbors for foreign aid, remittances of its workers and export market. Consequently, the recession beginning in 1983 with weakening of oil prices and a slow down in economic growth in the neighboring oil producing countries had a profound impact on Jordanian economy. Recession in Jordan was primarily due to shortfall in external resources as foreign aid declined by 30 percent, workers' remittances which were of the order of 1.3 times of exports and could finance 40 percent of imports stagnated and, the international demand for primary commodities produced by Jordan such as phosphates and potash weakened and their prices declined.

These negative trends in the economy adversely affected growth of the manufacturing sector. Actual growth rate achieved was only 4.9 percent against envisaged 17.8 percent, contribution to GDP was 19.3 percent against 30 percent and income from the sector could increase only to JD 211.8 million in 1985 from JD 167 million in 1980. During the entire plan period, the total value of actual investment was JD 599 million against envisaged JD 759 million. In actual terms, public sector investments amounted to JD 58.4 million against JD 42 million envisaged, whereas the private and mixed sector investment totaled JD 540 million compared to the planned target for JD 716.8 million. Thus the total achievement was 78.9 percent. This achievement, however, does not reflect the actual physical achievement in project implementation due to increase in prices and subsequent rise in investment cost of the projects. For example, the Plan had expected that JD 93 million would be spent on potash projects to produce potassium chloride, bromine, magnesium oxide and sodium chloride. The actual investments increased by JD 20 million despite the fact that three of the projects for bromine, magnesium oxide and sodium chloride were not implemented.

Jordan's commodity producing industries also suffered the impact of the economic slow down in the neighboring as well as the domestic markets leading to a declining demand for their products. However, inspite of an interplay of such adverse factors, achievement of a growth rate of around 5 percent is creditable and shows the inherent resilience of the manufacturing sector in Jordan.

Current Five Year Plan 1986-1990

In the context of the prevailing trends in economic growth, the current Five Year Plan envisages, an average annual growth rate of 6.9 percent. This target is proposed to be achieved by boosting production, fuller capacity utilization of the existing projects, expanding the engineering, chemical, food processing industries and promotion of medium and small scale manufacturing industries whether they are export oriented or import substitution oriented. The Plan places special emphasis on industries with high local value added and those which foster integration of industrial activities and forward and backward linkages at national or regional levels. The anticipated growth is envisaged to create 11,000 new employment opportunities in the manufacturing sector.

The Plan envisages a total outlay of JD 393.2 million for the industry and mining sector which represents 12.6 percent of the total investment allocations. These are significantly lower than the allocations in the previous Plan 1981-85 in respect of both planned JD 759 million and actual JD 599 million. Of the total allocation of JD 393.2 million, the private and mixed sector is expected to invest JD 340.8 million or 86.7 percent of the total sectoral investment.

The largest allocations among the major projects are for the phosphate and associated chemical industries. Recognizing the need for lower capital intensity of the manufacturing sector, the plan envisages certain modifications in pattern of manufacturing sectors' growth. Accordingly, sizable allocations have been made for the engineering and food industries and for the development of small and medium industries in the regions.

The engineering projects relate to foundry, household and irrigation water pumps and mechanical workshop with total anticipated investment of JD 33 million. The projects are inter-linked and aim at forming a nucleus for a variety of engineering industries that would help establish an integrated engineering base to provide necessary inputs. The second project would have a capacity of producing more than 15000 pumps while the third project aims at establishing a specialized high technology mechanized workshop to produce spare parts, moulds of all types and hand tools to meet the demand in Jordan and the neighboring countries.

Progress of plan schemes

The Government of Jordan took significant policy initiatives in August, 1988 by abolishing the system of licensing for setting up or expanding industrial projects. For purposes of documentation and statistics, the investors are required to register all their investments with the Ministry of Industry and Trade. A specialised investment unit has been created at the Ministry of Industry and Trade to guide and assist the investors. The protection of nationally produced industrial goods through import prohibition was abolished in principle while necessary protection would be exercised through customs and tariffs. The Encouragement of Investment Law was further liberalised and special measures have been outlined for encouragement of exports.

Jordan is currently passing through a phase of severe strains in its economic environment. This has adversely affected the smooth implementation of plan schemes. Consequently in the Industrial and Mining sector also a number of projects have been delayed or postponed. Among the major projects which have been delayed are industrial estates, setting up of National Centre for Standards and Specifications, completion of Amman International Fair and projects for increasing production of potassium sulphate and sodium carbonate. The three engineering projects viz. foundry, mechanised workshop and water pumps are being reviewed to scale down their capacities in view of certain developments in the neighbouring countries. By the end of the first quarter of 1989, the value of actual investment was 75 percent of the targetted plan investment in the Industries and Mining Sector.

Pattern of Industrial Growth

Jordan has a free enterprise system and manufacturing industry is primarily in the hands of the private sector. However, the Government, directly or indirectly, has significant equity participation in many of the large industrial enterprises. Such participation was around 90 percent or more in enterprises like cement, phosphate, potash, fertilizers, agricultural products processing, mining, livestock development, and some tourism projects, but less than 10 percent in refinery, pharmaceuticals, dairy products, ceramics, etc. The Government is committed to a policy of gradual privatisation.

The industrial scene is characterised by large scale natural resource based industries using highly sophisticated technology on one hand and a majority of small units using very simple technology on the other. Large and medium scale industries, categorised as having 5 employees or more accounted for 19 percent of the total units but contributed 92

percent of value added and 73 percent of employment according to the Industrial Census, 1984. Heavy industry complexes include phosphate, potash and petroleum products. Foreign collaboration ventures have been set up for products like paints, detergents, soap, alcoholic drinks, beverages, bottled milk and milk products, kitchens, stoves, watches, footwear, etc. Other main manufactured products include woollen piece goods, textiles, wearing apparel, leather and leather products, household appliances, pharmaceuticals and veterinary drugs, construction steel rods, cosmetics, gypsum, cement, canned food, cigarettes, confectionery and a variety of plastic products.

As per latest information available wide Industrial Survey, 1987 published in February 1989, Jordan had 9,769 industrial units, employing 65,816 persons. During the year, the gross value added amounted to JD 440 million, while the value of production was JD 943 million, and exports JD 203 million.

The fastest growing sectors during the previous decade were pharmaceuticals, cement, paper and cardboard, phosphate, clothes and textiles and iron as would be evident from the Index of Production 1979 = 100 given below* :

	<u>1983</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Index No.	150.9	185.2	187.8	205.2	188.5
Food Items	117.3	142.2	97.9	102.8	117.5
Soft Drinks	65.7	78.1	69.0	77.3	87.5
Alcoholic Drinks	119.4	89.6	73.2	67.9	65.0
Fodder	119.1	90.4	87.8	85.7	95.8
Cigarettes & Matches	119.6	107.7	100.1	125.9	115.3
Clothes & Textiles	96.3	167.3	148.2	167.3	175.9
Footwear & Leather	104.7	108.7	118.7	113.6	121.0
Plastic and Sponge	99.6	89.1	114.1	107.8	122.2
Pharmaceutical	223.8	341.1	339.2	377.1	345.1
Paints	122.8	113.7	95.6	105.9	98.4
Detergents & Soap	86.1	98.5	175.3	164.1	119.2
Iron	173.2	165.5	173.7	183.3	162.9
Cement	203.6	324.6	287.9	380.5	285.2
Wood Products	103.3	128.4	65.0	36.9	85.1
Others	212.8	155.6	115.0	86.9	117.5
Petroleum Products	114.2	141.1	134.2	140.0	137.7
Phosphate	167.8	214.6	221.0	242.1	119.0
Paper & Card Board	111.7	200.0	170.5	245.3	208.0
Batteries	49.7	65.8	72.3	73.3	84.5

* Source: Central Bank of Jordan

The above information reveals that the natural resource based industries have suffered less during recession than the industries producing consumer goods. Production levels in certain industries like batteries, soft drinks, alcoholic drinks and fodder were well below 1979 levels. Among this group, batteries seems to be recovering steadily. Although the production level of iron and steel group was well above 1979 levels, it was significantly below the value in the production index of product groups such as chemicals and cement.

Exports

To achieve economies of scale, the Jordanian manufacturers must address a market larger than the domestic market. The successive Five Year Plans have accordingly emphasized the importance of developing exports.

According to a UN study on commodity composition of exports, the share of manufactures in total exports has risen from 46.6 percent in 1979 to almost 60 percent in 1984. According to the study, "Jordan had a higher manufactured export share by regional standards. It is significantly higher than the value of corresponding ratios for Egypt, Iraq, Syria or any of the Gulf economies in 1985. It is broadly comparable to the average share of manufactures in total exports by the group of upper middle income countries, but is significantly lower than the value of this ratio for countries such as India and Pakistan".*

* UNIDO- Industrial Development Review Series, Jordan, 1987.

The following table shows the trends in exports of various commodities

COMPOSITION OF EXPORTS BY SECTOR OF ORIGIN, 1979-1984*

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Total Exports	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	31.1	26.0	23.5	19.6	19.5	11.5
Mining Quarry	22.3	28.9	23.2	22.8	25.7	29.3
Manufacturing	46.6	45.1	53.3	57.6	54.9	59.1
Food, Beverages						
& Tobacco	6.6	8.7	8.8	7.8	6.6	6.4
Textiles	4.7	4.3	5.6	5.1	2.8	7.1
Wood & Wood						
Products	4.4	3.5	2.9	2.1	1.6	2.9
Paper & Paper						
Products	1.3	1.3	1.8	1.3	1.1	1.2
Chemicals	8.4	9.0	9.6	11.9	21.4	26.1
Non-Metallic						
Minerals	2.2	2.8	3.4	3.6	3.4	3.6
Basic Metal	1.8	1.3	1.1	1.0	0.4	0.4
Metal Manufac-						
turing	16.9	13.5	19.8	23.2	16.9	11.2
Other Manufac-						
turing	0.4	0.8	0.3	1.6	0.6	0.2

* Source: United Nations- International Trade Statistics, 1984, New York 1987

The share of mining has increased by 6 percentage points during 1979-84 indicating Jordan's strong dependence on phosphate and potash industries. Despite the fall in world prices of phosphate, the structure of Jordanian exports is unlikely to change the dominance of mineral exports. Jordan has good potential to compete in world markets for derivatives of phosphates and Dead Sea Brines. However, it would take time before the proposed industries are set up.

Chemicals significantly have increased their percentage share in exports from 8.4 in 1979 to 26.1 in 1984. The main exports from Jordan under chemicals are paints, varnishes and lacquers. Since the Middle East countries are likely to be self sufficient in the near future as regards paints, the exports are likely to be stagnant. However, there appears to be an urgent need for Jordan to go in for high technology paints for which there is reported to be greater demand in the Middle East markets. These markets are quite sizable with regard to Jordan's production capacities for drugs and medicines. Jordanian producers have been pursuing effective marketing policies and have taken promotional measures like appointment of medical representatives.

Textiles is another sector which has shown promising trends in export growth. Its share in exports have gone up from 4.7 percent in 1979 to 7.1 percent in 1984. While the exports are still confined to Iraq (87.6 percent), there have been some welcome exports to North America (4.8 percent) and Europe (2.4 percent).

Challenges And Issues In Development

Implementation of policy guidelines

The successive Five Year Plans have outlined goals and policy guidelines for development of the manufacturing sector. For example, the current Five Year Plan envisages, among others, the following:

- To increase employment opportunities, in the industrial and mining sector by about 12.6 thousand jobs,
- To coordinate among the existing industries, especially in respect of
 - a. marketing, training, research, maintenance and transportation,
 - b. interconnection and integration among the various industrial segments and activities to achieve balanced economic growth.

- To regulate the import of goods which are similar to domestic products and to protect domestic products through all possible means;
- To encourage the establishment of small, medium-scale and cottage industries suited to local conditions in the various regions;
- Conducting periodic investment studies to identify high priority industrial projects and recommend them to the private sector including small-medium scale and cottage industries.

The guidelines cover almost all salient aspects of industrial development but neither any identifiable activities have been suggested nor any institution made responsible for initiating measures to achieve the goals. For example, for achieving the objective of close integration between industries themselves or between industries and other economic sectors like agriculture, intensive exercises are required to be undertaken to identify specific areas and initiate measures to achieve such objective. About three years ago a Committee is reported to have been constituted to examine possible integration of activities between the agricultural and industrial sectors but it could not meet or make any suggestions. To achieve this objective, more intensive measures are required to be taken as well as an evaluation of such measures to test their effectiveness from time to time.

The industrial sector at present lacks a sense of direction as there is no well defined industrial policy or even a long term perspective of the shape of things to come. A major constraint in the emergence of a clear cut policy has been the lack of applied economic research studies on salient aspects of industrial development to enable decision makers to evolve suitable policy parameters. It is an area of vital importance and it is imperative that the Ministry of Industry and Trade and the Ministry of Planning are fully equipped to undertake such tasks.

Close coordination among various promotional agencies, is another important area which needs rationalization. The Ministry of Industry and Trade, Chamber of Industries, Industrial Development Bank, Royal Scientific Society, the Cities and Villages Bank, the Department of Statistics, Industrial Estates Corporation, Free Trade Corporation and Universities are agencies which have to work in closest cooperation to achieve the desired results. But, there is, at present, no organizational structure to ensure such a coordination in implementation of the programme of industrial development.

Capacity utilization

Latest information on capacity utilization is available only for four sub-sectors covered under the Industrial Survey, 1984. These sub-sectors were food, textiles, chemicals and building materials. According to the Survey, the average capacity utilization for the four selected sub-sectors was 57.4 percent. With a capacity utilization rate of 62.8 percent, the building materials industry ranked first, followed by textile industry 57 percent, food industry 55.2 percent, and chemical industries 54.6 percent. However, the average rate of capacity utilization in each sub-sector cannot be generalized as some products recorded near optimum levels of capacity utilization while the sub-sector as a whole registered capacity utilization rate far below the group average. For example, diammonium phosphate, phosphoric acid, paste detergent and ball pens utilized 97 percent of the installed capacity, while the chemical industry as a whole suffered from under utilization of capacity to the tune of 45 percent. According to the study, the industries that severely suffered from under-utilisation of capacity were rubber products 35 percent, wall pastes 34.7 percent, mattresses 34.2 percent, school uniforms 31 percent, oils and fats 30 percent, cement blocks 30 percent, polystyrene boxes 27.1 percent, wool mix blankets 26 percent, wool carpets 23.5 percent, aluminium fluoride 23 percent, acrylic carpets 17.3 percent, toilet soap 15.4 percent and glass sheets 10 percent.

According to a study of 452 industrial units conducted by the Royal Scientific Society with 1986 as base year, only 11 units had capacity utilization of 90 percent and above, while 51 percent units had capacity utilization of 50 percent or more. The study has also revealed that 74 percent of the units were working one shift, 14 percent two shifts, and 11 percent three shifts. Fall in demand for products and non-availability of skilled labour were stated to be the two main factors contributing towards under utilization of capacity.

Employment and SMIs

The Five Year Plan lays stress on the need to promote small and medium scale manufacturing enterprises in the country. The share of total industrial investment allocation to the small and medium scale sector over the period 1978-90 stands at JD 88 million or 22 percent of the total investment, significantly higher than in the previous plans.

The role of SMIs in creating gainful employment opportunities specially in economically backward areas and preventing migration from rural to urban areas is well recognized. This makes small and medium industries an effective tool for absorbing the growing labour force. In the Jordanian context, this aspect is of special importance for achieving the goal of providing employment opportunities for 11000 persons during the current plan. This assumes importance in view of the fact that according to the Industrial Census, 1984 the value of fixed assets at factor cost per work place was JD 26,000 for establishments employing 5 or more workers and JD 670 for establishments employing less than 5 workers. Certainly, high capital intensive industries cannot contribute towards achieving the goal of employment generation, small and medium scale industries could only provide the answer. However, the small scale sector would have to be given special attention to achieve the objective of employment creation since the progress of small industries sector employing 1-4 workers has been rather stagnant in the recent past. During the twelve year period 1974-86 only 785 additional units have come up at an average of 65 units per annum. Even if each of these units provided employment to 4 persons, the total employment would be 250 persons per annum or 1,250 in an entire plan period.

The small industries employing less than 5 persons, although account for 26 percent of employment, contribute less than 3 percent towards the total manufacturing production and generate 2 percent to the sector's value added. The small units are concentrated in non-electrical machinery, furniture and wood products. The largest single branch is the non-electrical machinery where small enterprises produce a significant proportion of sectoral output. They are mainly engaged in the production of simple metal products and employ labour intensive technology- the share of machinery sector in the gross output of small scale manufacturing is significantly higher than its share of value added. Most establishments within the sector are involved in repair and maintenance work which can enhance Jordan's capacity to play an important role in providing maintenance services even to other West Asian neighbors particularly in the construction industry.

The small scale industries have so far not exhibited high export propensities. They are domestic demand oriented and have strong linkages with industries such as non-metallic minerals and textiles with high import content.

The significance of the small scale sector lies in the fact that it constitutes the largest pool of enterprenuerial ability within the economy. A conscious effort has to be made to develop the en-

terprenerial skill and enable him to graduate to the medium sector rather than to become semi skilled labour or migrate to the Gulf.

Regional dispersal

The current Five Year Plan stresses the need to "encourage establishment of small, medium scale and cottage industries suited to local conditions in the various regions". To facilitate industrial dispersal several measures have been taken which include development of industrial estates in Aqaba and northern provinces. The Regional Development Division of the Ministry of Planning has special fund earmarked for regional development and has undertaken studies to develop suitable industries in the Governorates. In addition, the Cities and Villages Development Bank, which is operating the Regional Development Fund, is encouraging the municipalities to construct mini-industrial estates, in the vicinities of cities to enable small enterprises to shift to healthier locations from the congested sites inside those cities. Moreover, various incentives and facilities are available under Encouragement of Investment Law to set up enterprises in industrially backward zones away from the Amman-Zarqa belt.

The following table shows the distribution of manufacturing units, employment and value added by Governorates as per the Census of Industries, 1984.

<u>Governorate</u>	<u>Units</u>		<u>Employment</u>		<u>value added</u>	
	<u>Large a</u>	<u>Small b</u>	<u>Large a</u>	<u>Small b</u>	<u>Large a</u>	<u>Small b</u>
Amman	73.78	68.85	71.04	70.60	63.70	70.57
Irbid	15.05	21.38	6.07	20.13	3.04	20.71
Balqa	8.30	3.70	6.09	3.65	13.70	3.59
Karak	1.78	2.65	11.29	2.46	17.53	2.30
Ma'an	6.05	3.15	5.48	3.13	2.03	3.03

Source: Department of Statistics, Industrial Census 1984, Amman 1986

a/ Employing 5 persons or more.

b/ Employing 1-4 persons.

Inspite of these efforts, the industries still tend to concentrate in the Amman-Zarqa belt. A recent study has revealed that among the units with investment less than JD 100,000, 84 percent were located in Amman, 7 percent in Zarqa and 6 percent

in Irbid. Of the total, 343 or 76 percent units were in Amman with an investment of about 59 percent.

Science and technology inputs

The successive Five Year Plans have been stressing the need for transfer and application of advanced technology. The Royal Scientific Society in its recent study on Science and Technology requirements of selected industrial units with base year 1986, has examined aspects like availability of skilled labour, quality control and testing, maintenance of machinery, etc. The study covered 452 industrial establishments employing 10 or more workers. Certain interesting findings of the study are summarized below:

- After 1983, no industrial unit has come up with investment exceeding JD 1 million.
- The units provided employment to 35,177 persons. Only 5,505 or 16 percent of the workers had education higher than secondary level. In establishments with investment of JD 1 million and above, 61 percent workers had education above secondary level. Of these, 44 percent had background of engineering or technology trades and 24 percent of social sciences.
- Of 452 establishments, 38 or 8 percent had in-house R&D facilities. These establishments involved 60 percent of total investment and 61 percent of total labour.
- Quality control and testing for raw materials were being conducted by 222 or 49 percent units and for finished products by 250 or 55 percent units.
- 17 percent of the units were using computers for administrative and managerial purposes while 12 percent were using it for production purposes.
- The units were conscious of the need and value of in-depth studies of their problems. Accordingly 45 percent establishments wanted studies about marketing of their products outside Jordan, 34 percent wanted such studies for marketing within Jordan. Further 37 percent desired studies for reducing their cost of production and 17 percent for improving quality of their products.

Private sector stimulation

Stimulation of private enterprise has been an important in gradient of Jordan's economic policy. Jordan has adhered to flexible and indicative planning model where investments earmarked for the private sector are non-binding and various economic policy instruments are used to promote such investments.

The policy also ensures active participation of the private sector in planning and decision making with minimal Government intervention in the productive sector. However, inspite of these efforts, private investment is not forthcoming to the desired extent.

It is the long term prospects which impress the private investor more than the short term existence of favorable political conditions. In the final analysis success would depend on a package of both macro economic policy as well as active guidance and assistance at the field levels. The macro-economic package may include policies relating to tariff rate system, fiscal and monetary policies, investment policy, rationalization of the Government's regulatory measures, etc.

The plan has envisaged private sector investment in the mining and manufacturing sector of the order of JD 340 million of which JD 88 million is meant for small and medium scale industries. This, however, is an area where information is greatly lacking as to-date no system has been evolved for keeping track of the progress of the proposed units which have applied for registration. At the time of registration, the prospective entrepreneurs have to provide information about the line of production, proposed investment, employment, etc. However, no record of the activities of the proposed unit is available till it goes into production and is covered under the annual survey of industries.

In the current plan, certain projects have been earmarked for implementation by the private sector. These include pharmaceuticals and veterinary drugs, foods, ready made garments, electrical appliances, metal furniture and heating appliances, solar heaters, medical appliances, plastics, textiles, paints etc. The list of industries shows great potential but the activity has not been followed up. These projects are meant mainly for the medium and small scale entrepreneurs, who certainly do not have enough resources and experience to select a suitable line of production and get a feasibility report prepared. They rather need guidance and assistance at the pre-investment and investment stages which, by and large, is not readily available.

2. STRATEGY FOR INDUSTRIAL SECTOR PLANNING AND IMPLEMENTATION

To evolve a suitable strategy, it is pertinent to assess the interplay of factors contributing to or restraining the growth of industries in Jordan.

Jordan enjoys locational advantage as it happens to be situated at the very doorsteps of two of the world's most prosperous markets namely Middle East and Europe. The broad thrust of Jordanian industrial policies is liberal and outward looking. The Government has actively encouraged the growth of private investment and has sought to promote foreign participation through joint ventures. Within the overall pro-private sector orientation and policies, the Government played a significant supportive role through its participation with the private sector in implementation of large economic projects, provision of incentives to attract private capital and securing active private sector participation in the planning process.

The Government has traditionally adhered to a regime of free trade confining its activities to import and distribution of a limited number of basic commodities. Both trade and capital are ensured free movement with trading activities in the hands of the private sector. Government intervention in the productive sectors is thus minimal and the pricing of the final product is left to the market forces except for a few necessities.

The Government has placed a great deal of emphasis on regional economic integration and cooperation. Arab investors are accorded treatment similar to national private investors. Jordan is a member of Arab Common Market and the recently constituted Arab Cooperation Council. Regional cooperation remains a vitally important determinant of effective performance of the Jordanian manufacturing sector in view of the small domestic market and high level of regional export orientation.

In spite of these favorable factors, Jordan is suffering from a number of constraints hampering the smooth growth of industries. Prominent among them are narrowness of the domestic market and consequent inability to absorb Jordanian products; inadequacy of measures and procedures governing promotion of export markets, lack of close inter linkages between industries and other sectors of economy as well as between industries themselves, weakness of domestic expertise in preparation of feasibility studies, lack of trained labour, high cost of domestic inputs and very high dependence on imported raw materials.

In addition, the Jordanian economy is suffering strains in the recent past. The Government has already taken certain quick and drastic measures to overcome the current economic problems which included a complete ban on import of certain commodities, enhancement in custom duties on a number of consumer and non-essential goods and floating of the Jordanian Dinar.

The manner in which current economic strains are being managed would have profound impact on the future of the private sector as well as the pace of industrialization as certainty, stability and security and are the three key cornerstones for motivation of the private sector.

New Strategy

In the context of the current but continuing strains on economy, it has become an economic compulsion for Jordan to adopt a forward looking, bold and comprehensive programme for intensive development of industries with high degree of export orientation. The new approach is deemed to be a decisive move towards identification of key areas of comparative advantage and potential for development, re-orientation of policies and strategies, strengthening institutional mechanism, technological capabilities, and entrepreneurship required to develop and utilize effectively the natural resources and material endowment of the country, exploring and expanding markets and strengthening the links between industry and other sectors of economy.

The successful implementation of such a comprehensive programme of development would extend beyond the parameters of a five year plan. It is suggested that 1990s may be treated as "DECADE FOR INTENSIVE DEVELOPMENT OF INDUSTRIES". The objective of such a programme for intensive development of industries is to lay the foundation of a self-reliant and self-sustained economy in the long-term. It is a means of focusing greater attention and evoking commitment at the national level for accelerating the pace of industrialization.

The next Five Year Plan should thus have the essential features of a perspective plan as well as rolling plan for industrial development. For successful formulation and implementation of such a plan, intensive efforts would be required by way of preparatory action. A two pronged approach may be adopted:

1. Formulation of an integrated plan for industries sector and sub-sectors with clearly defined strategy mutually consistent with development potential of key industrial sectors and sub-sectors. This would involve.
 - a- a factual assessment of the performance of key sub-sectors in order to determine their present status, identify constraints and potential for development and, taking a futuristic view of growth, give a clear sense of direction by preparing pragmatic programmes of action to increase competitive efficiency, export worthiness, ensure necessary linkages and technological and other inputs and identify promising lines of investment,
 - b- an in-depth review of policy parameters specially tariff, trade, incentives and credit policies with a view to removing bottlenecks and ensuring smooth growth;
 - c- preparing action programmes for employment promotion to achieve the goals set out in the plan;
 - d- stimulation of private enterprise to fully participate in development efforts.

2. Clearly defined and structured institutional arrangements for industrial sector and sub-sector planning including:
 - a- strengthening planning and implementation capabilities at the Ministry of Industry and Trade;
 - b- clearly defined role of Chamber of Industry and private sector organizations;
 - c- development of adequate linkages with other sectors of economy, viz. agriculture, technology, energy, infrastructure and manpower development;
 - d- development of data base and monitoring system.

The components of the suggested strategy are discussed in the following paras:

Formulation of an Integrated Plan

The Chapters on Industry and Mining in the successive Five Year Plan documents have outlined the main characteristics, constraints and goals in industrial development. The goals, are broadly described as increasing competitive efficiency, promoting exports, identification of new and high value added products, stimulation of private enterprise, close inter-sectoral and inter-industry coordination, rationalization of policies to suit the changing environment, etc.

It is essential to squarely face the constraints and provide a solid foundation for industrial development. This exercise would necessarily have to be a two way process: firstly determining at the macro level the role industrial sector is envisaged to play in the economy of Jordan by way of contribution to GDP, balance of trade by way of exports and efficient import substitution, employment promotion, determining a desirable rate of growth and, secondly a factual assessment of conditions obtaining in the field, determining the potential and preparing action programmes to achieve the goals by ensuring provision of all essential inputs.

Some of the rapidly industrializing countries in South and East Asia have achieved growth rates varying between 20-35 percent. Jordan, during 1976-80 had achieved an average annual growth rate of 27.3 percent. During recession and adverse circumstances, the actual growth during 1981-85 was 4.9 percent. The current plan envisages a growth rate for manufacturing sector as 6.9 percent per annum during 1986-90. To enable the industries sector to play a meaningful role, Jordan should aim at a rate of growth commensurate with its aspirations for intensive development of industries in the medium term.

While detailed exercises have been undertaken for selected large scale industrial enterprises like phosphate, potash and allied products, exploitation of Dead Sea resources and engineering complexes, other sector of industries have been left entirely on the initiative of the private sector. In view of the pattern of growth of industries in Jordan, there is an imperative need for preparing an integrated and well coordinated programme of action for expeditious development of key industrial sectors. To provide a solid basis for industrial planning, in-depth studies are suggested to prepare sub-sector plans. Design of study and methodology of sub-sector planning is given in Chapter 3 of this report. It is desirable that plans are prepared for all major sub-sectors in order to determine their scope and prepare action programmes for development. The work would have to be taken-up in a phased manner. In the first phase, four sub-sectors namely textile, food, chemical, engineering and construction sectors may be taken up. These sub-sectors were covered under 1987 Industrial Survey conducted with the assistance of UNIDO/AIDO. Other sectors like leather, paper and paper products, printing and publishing, electrical and electronics, furniture and wood works, and service sectors could be taken-up in a subsequent phase.

The sub-sector plans would comprise action programmes for fuller utilization or expansion of capacity, diversification of production activities, increasing competitive efficiency and exports;

identification of new areas of investment, standardization and quality control, additional incentives or adjustments in tariff structure, technical and technological inputs, etc. The action plan would also identify agencies which would undertake specific activities.

The sub-sector plans would provide the much needed data base and other technical information essential for preparing pragmatic programmes for development at the macro level. These would make available a portfolio of viable projects for the guidance of the private sector as well as to be utilized for sub-contracting purposes or negotiating joint ventures.

An essential task in preparing an integrated plan would be determination of priorities from amongst the projects and action programmes that emerge from the findings of the sub-sector and policy related studies. Accordingly a phased programme of development would have to be prepared. The next Five Year Plan period would be crucial for successful implementation of the first phase and preparatory action for the second one. It would be useful to introduce the concepts of rolling plan and well defined annual plan for effective implementation.

In-depth Review of policy Structure

Apart from sub-sector studies, a few policy oriented research studies are considered essential to enable the policy makers to rationalize incentives and facilities in line with the objective of accelerating the pace of industrial development. Suggestions for some of these studies are given as under:

Impact of tariffs as instrument of industrial growth

Tariff policy is a powerful instrument for speedy growth of export oriented and efficient import substitution industries. This instrument has been successfully used in many rapidly industrializing countries.

Since the beginning of 1983, there has been a gradual application of protection in different forms. Import bans and prohibitions were applied to about 40 commodities to encourage local manufacture, custom duties were imposed on about 50 commodities which were formerly being imported with duty exemption by the public sector institutions and tariff duty reduced on 18 products to facilitate imports of raw materials or intermediates by the industrial units. A World Bank Study has concluded that "judging

purely on average level of tariffs, the level of protection [in Jordan] is not high. The average level of tariff is not different from many other countries at similar level of development. An average tariff rate of 26 percent is comparable to Morocco, Argentina and Mexico- countries which have recently undergone trade liberalization programmes- and is almost 30 percent lower than Egypt and Turkey, Jordan's neighbors".

The objective of study should be to evaluate the impact and effectiveness of the custom duties and other protective measures on the performance of particular groups of industries and suggest suitable measures for rationalization of tariff structure.

Streamlining of interest rate and tax structure to make investment in industries more attractive

The Five Year Plans have laid great emphasis on private sector initiative in investment in industrial ventures. Efforts are also being made to persuade Jordanian expatriates working abroad to invest in industries. An in-depth study of making investment in industries more profitable than certain non-productive sectors would reveal ways and means for attracting investment.

Study of pattern of industrial development and imports of manufacturing products in ACC and other neighboring countries

The Directorate of Economic Operations of the Ministry of Industry and Trade is handicapped on account of lack of information on developments in ACC and other neighboring countries while negotiating trade pacts. To assist the Directorate, a detailed study needs to be undertaken of the pattern of industrial development as well as imports of various manufactured products in these countries. Such information would be useful not only for export promotion but also for existing and prospective entrepreneurs for planning their production programmes.

Financial structure of small and medium industries

A study of the financial structure of selected medium and small scale industries would reveal the current sources of finance, felt needs and adequacy of financial assistance being rendered by financial institutions. Such a study would be of great use in identifying specific measures for improving credit flow specially venture capital, export finance, soft loans for modernization, technical development, quality control, etc.

Adequacy of incentives for industrial dispersal

In spite of various incentives being offered under the Encouragement of Investment Law, the fact remains that industries are not being attracted to the industrially backward pockets of the country. An evaluation study of the impact of incentives on dispersal of industries would reveal the adequacy of such incentives and the need for further measures to achieve the objectives.

The above studies could either be undertaken directly by the Ministry of Industry and Trade or entrusted to specialized institutions. Once the base line studies are undertaken, the information could periodically be updated through concurrent evaluation or supplementary studies. In any case, the concerned Directorates in the Ministry should be very closely associated with the studies.

Development of Small and Medium Industries

The development of small and medium scale industries have assumed all the more importance in Jordanian economy in the context of the urgent need for providing gainful employment opportunities and dispersal of industries all over the country. It is desirable that attention may be focused on expeditious development of this sector of industry. Apart from policy and institutional support, measures would have to be taken to ensure provision of all essential inputs for its smooth growth.

Policy Support-

In recognition of the role small and medium industries are envisaged to play in the economy of Jordan, the SMI should be treated as priority sector for development and its role clearly defined. Due recognition may be given to this role in Five Year Plans and allocation of resources.

In order to make investment in SMI sector comparatively more attractive, a new section for SMI may be incorporated in the Encouragement of Investment Law. The growth of SMIs outside Amman-Zarqa belt may be treated as 'economical projects'. In addition, minimum ceiling of fixed assets may either be reduced to JD 1000 or done away with. The Law allows extension of the period for exemption of tax on net profits beyond stipulated period if the project is owned by a public limited company. Such allowance may also be made in case of privately owned small or medium enterprises provided 50 percent of their production is exported or results in saving of foreign exchange through import substitution.

Since the sector needs concentrated attention and forms an important core in the industrial sector, it is desirable that both small and medium industries are defined.

Industrial Accommodation-

Industrial estates are an ideal tool for expeditious development of SMIs provided they are planned as an integral part of a comprehensive development programme and as focal points for healthier industrial growth. The Jordan Industrial Estate Corporation has set up a very well planned estate at Sahab which provides essential infrastructural facilities. Apart from expansion of Sahab into second phase, the Corporation plans to develop fully serviced industrial estates at Irbid, Salt and Aqaba. However, the completion of these estates is delayed during the current plan due to constraints of resources. In addition, certain municipal corporations have taken initiative in providing built-in sheds to enable existing units to move from congested areas to new and healthy locations. The municipalities of Zarqa and Karak have already constructed such estates, while these are under construction by Ramtha, Ajloun, Jerash, Salt and Ruashed municipalities. It is desirable that the activities of municipalities in this regard are encouraged to the fullest and the Cities and Villages Development Bank gives priority to such activities.

In view of the constraints of resources, it is also desirable that the private sector participation is secured for the industrial estate programme. This could be done on allocating land, at suitable locations on long term lease or outright sale basis to a group of entrepreneurs or their cooperatives and provision of long term loans. The lay out plan of the industrial estates, designs for different types of sheds, infrastructural facilities may be worked out by the Industrial Estate Corporation. The activity could be undertaken by the Industrial Estates Corporation in close collaboration with the Industrial Development Bank and the Cities and Villages Development Bank.

Industrial Extension Services

The Ministry of Industry has taken a very welcome step in setting up a 'One Stop Window' for providing assistance to the entrepreneurs. The Directorate has already prepared pamphlets for guidance of investors giving information about available incentives and facilities, legal protection, industrial promotion laws, establishments like industrial estates, free trade zones, etc. These activities however lack publicity as the number of entrepreneurs visiting the window for seeking guidance is not significant at present. Secondly the Directorate suffers from

constraint of staff. Its activities are currently more or less confined to assisting the entrepreneurs in getting clearance from the respective Departments. For this purpose, in each concerned Department a liaison officer has been appointed.

In view of the enormous and urgent task of accelerating the pace of industrial development, the activities of the Directorate require substantial expansion specially in the field of providing extensive information services and initiating an active programme of entrepreneurial development. The two activities are discussed as under:

Information Services

In close collaboration with the Information and Studies Division, the Development Directorate, record may be kept of all essential information required by the existing or prospective entrepreneurs. The information available with the Directorate should be as under:

Development Information-

This comprises diverse items as availability and present pattern of utilization of available resources, a list of all existing industries and products being manufactured so as to caution the entrepreneur in advance about duplication or internal competition, list of all facilities and incentives for setting up and successful running of an enterprise, scope of activities of all concerned Government, private, or technical institution which could provide assistance to the prospective entrepreneurs.

Regulatory Information-

This comprises procedures and formalities to be fulfilled for setting up a unit, approvals to be obtained from various authorities, registration with the Ministry of Industry and Trade, Chamber of Industries, etc. modalities for securing incentives and facilities, import of capital goods and raw materials or exports, financial assistance, etc. alongwith forms of application for various agencies, etc.

Technical Information-

The Directorate may keep in close touch with the technical institutions in order to refer the prospective entrepreneurs to the concerned institutions for obtaining technical guidance and assistance. In addition, it may keep a list of industries which have prospects for development in various areas. Such lists, prepared by various agencies, may be made available alongwith their basic information about the project. After completion of sub-sector surveys, the Directorate would be in a much better

position to give detailed information and guidance to prospective entrepreneurs with regard to selection of suitable lines of investment.

Entrepreneurial development

Entrepreneurial skills are a crucial element of any industrial promotion programme. The development of entrepreneurship involves various steps namely identification of prospective entrepreneurs, selection of lines of investment which would suit the specific entrepreneurs, motivation of entrepreneurs for establishment of industry and provision of necessary assistance at pre investment, investment and post investment stages.

A look at the number of persons who had applied to the Ministry of Industry and Trade for licenses or registrations is quite revealing as it denotes the number of persons desirous of setting up new industries.

<u>Period</u>	<u>No. of licenses</u>	<u>Employment</u>	<u>Investment</u> <u>JD000s</u>
1986	118	2,300	18,717
1987	158	3,086	23,483
Jan - Aug., 1988	102	2,354	13,683
	<u>No. Of Registration</u>		
Aug - Dec., 1988	1001	NA	85,785
Jan - June, 1989* (Provisional)	268	NA	21,900

There is quite a big jump in the number of applications soon after the licensing system was abolished. All the prospective entrepreneurs, who have applied for registration, need intensive follow up activities to ensure that they take adequate steps for setting up their industrial units. Discussions with the local branches of the Chamber of Industry and Commerce in the Governorates have revealed the same trends. Each of the local chamber was found to have a list of industries and persons who are desirous of starting them. The skills of technical personnel returning from abroad could also profitably be utilized for setting up new enterprises. Another sources of prospective entrepreneurs could be the young persons coming out of technical universities and vocational training centers.

It is perhaps true of all the developing countries that a significant number of persons are willing to assume risk taking roles but few are aware of the steps in developing an investment

proposal and even a smaller number can cope with the procedural formalities and management skills essential for making it a success.

The Industrial Development Bank is performing an extremely important job in contacting all the persons who have applied for licenses or registrations in order to ascertain their requirements. Annually a seminar of Jordanians' working abroad is being held to explain facilities and incentives available for setting up industries. These activities are very significant but should form part of an integrated and comprehensive plan of action and active follow-up.

The initiative for this purpose should come from the Ministry of Industry and Trade, which should provide guidance to all agencies and ensure proper follow-up through organization of 'escort services' for the prospective entrepreneurs. These services could concentrate on catering to the felt needs and requirements of the prospective entrepreneurs. The main objective is to motivate prospective and potential entrepreneurs by providing them all possible assistance and guidance in close collaboration with the Industrial Development Bank, Chamber of Industries and other agencies. The following steps could be considered in this regard:

- About 150 new registrations are being issued by the Ministry of Industry and Trade per month. It would be useful to organize one day workshop each month, with the assistance of Industrial Development Bank and Chamber of Industries in which facilities and incentives available for entrepreneurs, role of various organizations, procedures and formalities in setting up an enterprise may be explained;
- Entrepreneurs who have obtained registrations since August 1988, may be contacted to ascertain their interest and status of their preparedness and necessary guidance given to them,
- Many of the prospective entrepreneurs require guidance and assistance in selection of machinery, processes, raw materials, technical knowhow or economic information about markets, industrial accommodation, etc. Such services may be arranged through Consultancy Wing of the Industrial Development Bank, RSS, Universities, etc.
- The Consultancy wing of Industrial Development may regularly assist the new entrepreneurs in preparing bankable proposals in order to obtain requisite financial assistance,
- All these services may be rendered on payment on the part of prospective entrepreneurs on no-profit no-loss basis.

Technical and technological upgradation

Apart from prospective entrepreneurs who have to be assisted in selection of their line of production, machinery and equipment, and preparation of feasibility report, the existing small and medium entrepreneurs need regular guidance and assistance in solving their day to day technical, quality control, modernization problems.

There is an urgent need to strengthen the technical extension services of the Ministry of Industry and Trade. An important activity of the Ministry should be to coordinate the activities of the various agencies engaged in providing technical guidance to the entrepreneurs. Prominent among them are the consultancy wing of the Industrial Development Bank, Royal Scientific Society, technical departments in the Universities. In addition, there has been a welcome development that certain specialists have also established private consultancy firms. It would be useful if these private consultants are given due recognition, a record kept of their fields of specialization and whenever requests are received from the entrepreneurs, a list of all such agencies and consultants be supplied to them.

The proposed sub-sectoral studies would reveal the technological and modernization requirements of particular groups of industries. As a follow up of sub-sectoral studies, a bold programme of modernization would have to be taken up in an intensive manner to cleanse the industrial units of their operational constraints and make them more competitive. Details of the proposed modernization programme are given in Chapter 3 of this report.

In order to achieve the plan objective of providing gainful employment opportunities, the small industries and service sector would have to be substantially strengthened and their problems and constraints given due importance in sub-sector studies and planning. This sector urgently requires technical assistance and guidance with regard to diversification of activities, as many units face marketing problems due to recession in construction activity and financial assistance for modernization of machinery and equipment. A majority of the light engineering service industrial units have machines which are obsolete and sometimes even more than 20 years old. This has consequently resulted in low productivity.

A variety of products involving simple technology which could be manufactured by small light engineering units like iron and steel nails, paper trays, racks, steel cabinets, article of iron and

steel for domestic use, etc. are being imported at present in substantial quantities. An attempt may be made to identify such products and encourage their local production in the small industries sector to diversify their production activities. It is desirable that the policy of safeguarding the interests of indigenous industry during the infant stage, both through tariff support and incentives should be continued for a stipulated period of time for each industry. After a reasonable period, the industry is envisaged to stand on its own feet and face competition.

Market research and development

Activities relating to market development are being looked after by the Directorates of Economic Cooperation and Export Development, Trade and the Jordan Commercial Centers Corporation. The sub-sector studies would pinpoint weaknesses and identify action programmes to strengthen domestic and export marketing of Jordanian products. Both the Directorates of the Ministry would have to be suitably strengthened in the light of findings of the studies.

A significant development in respect of market development has been the establishment of Jordan Commercial Centers Corporation (JCCC) to provide a wide range of services to the exporters. The ITC project 'Export Development and Diversification (JOR/87/001) aims at improving the organization and efficiency of the foreign trade representation mechanism, assist in formulating an export development strategy in identifying potential export industries and investment opportunities, assist selected export enterprises in formulation of their export marketing strategies, assist in product and market development through establishing service facilities with interested buyers in Arab region, Western Europe, Asia and other development countries.

With the assistance of UNIDO Regional Project DP/RAB/84/008, Sub-Contracting Exchanges (SCX) are being set up in seven countries namely Algeria, Egypt, Iraq, Jordan, Morocco, Syria and Tunisia in order to promote cooperation between complementary industrial units particularly in engineering, electrical and metal-working industries sector with a view to encouraging industrial integration at both regional and national levels and contribute to integrated and harmonious industrial development of the region. Setting up of SCXs would go a long way in solving the problem of low capacity utilization of industrial units in Jordan apart from saving precious foreign exchange.

Role Of Voluntary Agencies

An analysis of the private sector development in some countries, where such development has been highly successful e.g. Japan, South Korea, Singapore, Taiwan, shows that the Governments had actively guided private sector development and provided direct support to enhance its competitiveness. The Governments' main responsibility was to lay down appropriate policies and legislative framework for the latter to perform efficiently in production and distribution which should remain the preserve of the private sector.

In an active pro-private sector environment in Jordan, representative bodies of the entrepreneurs like the Chamber of Industries and the Central Level and local Chambers at the Governorate levels are deemed to play a significant role in the movement for development of industries. Indeed, the Chamber of Industries should assume responsibility of guiding and assisting the entrepreneurs at all levels of their activities right from entrepreneurship development and selection of a suitable line of investment to marketing of the final products, conducting concurrent studies, making suggestions to the Government on policy and planning issues, trade relations, developing consultancy services for solving technical technological and marketing problems, etc. The local chambers would have distinct role to play in organizing extension services at Governorate levels and specially industrially backward regions of the country.

In the context of the imperative need for the accelerated development of small and medium scale industries to provide gainful employment opportunities, the above mentioned extension services have to be provided on an extensive scale. The Chamber of Industry is in a position to provide such extension services as it enjoys the confidence of the entrepreneurs. But the Chamber would have to be properly strengthened and equipped to perform these activities effectively.

Another important direction in which the activities of the Chamber of Industry should concentrate is export promotion, with the assistance of UNCTAD, the Chamber recently organised a workshop on General System of Preferences and Export Promotion which has elicited very encouraging response among the entrepreneurs. In order to substantially increase its activities in this regard, the Chamber should have a separate and fully equipped Export Promotion Division for providing necessary guidance and assistance to the exporters as well as identifying and stimulating export worthy units.

There is also need for active cooperation between various private and voluntary agencies. e.g. between the Chambers of Industry and Commerce specially with regard to the small and medium scale industries as most of the SMI entrepreneurs do not possess the requisite resources for marketing or export of their products on one hand and procurement of raw materials and intermediates, parts and spares on the other. The activities of the Chamber should gradually be oriented towards solving the problems of small and service sector industrial units.

Further, the Union of Voluntary Agencies is making efforts for improving the lot of artisans in the rural areas, but the work is being done rather in isolation without any active cooperation from other private sector agencies. The Chamber of Industries may cooperate with the Union in these efforts.

It would be useful to organize a workshop for discussing and defining the precise role of the Chamber of Industry and ensuring that it is properly equipped to perform the desired activities. Efforts should be made to ensure complementarity between the activities of the Ministry of Industry, the Chamber and other concerned agencies and avoid duplication of efforts.

Institutional Arrangements for Industrial Planning and Implementation

In recognition of the need for sound management as crucial requirements in development administration, it is essential that the organizational structure of the agencies concerned with industrial planning and development is reoriented in a manner to permit effective performance and coordination of activities to allow the system to function smoothly.

Jordan has already developed an institutional structure for plan formulation. The Higher Council of Planning (HCP) is the supreme body for planning. Its membership comprises cabinet ministers and members of the private sector. The Council determines the national priorities and issues guidelines to the Ministry of Planning for formulation of the Five Year Plan. The Council has a working Committee which is located in the Ministry of Planning and looks after the actual formulation of the plan.

The Ministry of Planning issues guidelines to the Ministries and Corporations for sectoral or project plans; Governorates for regional plans, and appoints special committees for planning purposes. The Special Committee for Industry and Trade comprises Secretary General of the Ministry of Industry and Trade as chairman and representatives of the Ministry of Planning, Corporations, Chambers of Industries, etc. as members. The special committees are responsible for drafting the plan proposals.

The proposals drawn up by the Ministries and Corporations, are examined by the Special Committees and consolidated draft proposals are drawn up and furnished to the Ministry of Planning which, in turn, examines the same in the context of the national priorities and guidelines. If required, the proposals are referred back to the Special Committees alongwith comments for pruning, redesigning, giving further justification or details. After such clarifications, the sectoral plan proposals are drafted.

The draft plan proposals, prepared by the Ministry of Planning are considered by the Working Committee and the Higher Council of Planning. Later the draft consolidated plan is considered by the General Committee presided over by His Royal Highness the Crown Prince. The General Committee comprises approximately 700 persons representing all interests in the public and private sectors. The finalized plan is introduced in an international conference.

Ministry of Planning

With the emerging importance of planning in the economy of Jordan, the planning processes would have to undergo a radical change. It is increasingly being recognized that planning cannot be confined to public sector alone particularly in a situation where the Government is looking to the private sector for investment in productive activity and specially in high priority area. This aspect has substantially enhanced the role of planning in the national economy.

The Productive Projects Division in the Ministry of Planning deals with Energy and Mineral Resources, Industry and Agriculture Sectors. The plan outlay of these four sectors represents 31 per cent of the total plan outlay. The Division is headed by a Director and has a staff of 3 officers for looking after the industries sector.

The main function of the Productive Projects Division in the Ministry of Planning is the development of medium term macro economic framework and sectoral plans supported by a comprehensive portfolio of programmes and projects. In addition, the Division examines the feasibility of public sector financial projects and undertakes a review of sectoral policies.

For preparing a comprehensive development programme for the industries sector specially in the context of perspective beyond the five year plan parameter and ensuring active private sector participation, much more attention would have to be given to the industries sector on the part of the Productive Projects Divi-

sion. The desirable activities of the Division could be summarized as under:

- Preparing a perspective macro economic framework and development alternatives alongwith rolling and annual plans;
- For project development, determination of criteria and economic parameters that are used in evaluation and develop evaluation methodology with a view to upgrading standards of planning and project formulation.

- Organization of high level dialogues for drawing up strategies for sectoral development. This would involve evaluation and review of sectoral policies and programmes, study of current national issues, and developing an industrial policy.

- Preparing the sector programmes and strategies in close liaison with the line Ministries ensuring inter-sectoral consistencies. Since industries, agriculture, energy, minerals and the corporations happen to be looked after by the same Division, it should not be difficult to ensure necessary coordination in activities.

- Providing training and orientation to the planning divisions or cells in the line Ministries through workshops, seminar or regular training courses in planning techniques.

In the context of the envisaged activities, the PP Division in the Ministry of Planning would have to be suitably strengthened.

Planning activities in the Ministry of Industry and Trade

There is at present no specific Division or cell in the Ministry of Industry and Trade, which is responsible for planning and monitoring industrial development programmes. Various Directorates in the Ministry are rather overwhelmingly burdened with regulatory work and also suffer from inadequate staff to deal with their present responsibilities. The Ministry's activities are rather peripheral to the main task of planning. Planning is largely conceived of as project preparation. This has often led to the neglect of many other important areas like broad sectoral and sub-sectoral strategies formulation, development of appropriate planning methodologies, programme review, etc. In some cases, policy areas have been identified but the Ministry is handicapped in decision making due to lack of data and adequate capability of economic analysis.

With a view to making the process of planning, implementation and monitoring of the development programme more effective for rapid

growth in harmony with the prevailing needs and priorities, it is essential to establish a separate Planning and Coordination Directorate in the Ministry of Industry and Trade. The Directorate would be mainly responsible for comprehensive planning, identification of development and policy issues, preparation of sectoral plans, monitoring of performance, reviews of progress, conducting concurrent evaluation and economic analysis studies.

Industrial Development And Coordination Committee

Development coordination is essential- and difficult- within the various departments, agencies, corporations and the Ministry of Industry and Trade on one hand and the Ministries of Planning, Agriculture, Mineral Resources, private sector on the other.

Although an effective institutional network has been set up for formulation of Five Year Plan, there is at present no institutional arrangements for coordinating the work of various agencies concerned with industrial development. The result is that sometimes the activities are thinly dispersed and duplicated rather than forming part of a coordinated and integrated effort mutually consistent with each other. The following examples will illustrate this point:

- i- With regard to identification of investment opportunities for promotion in the industries sector, a number of agencies are working independently. The Regional Development Division of the Ministry of Planning had sponsored two studies to identify small and medium industries suitable for development in the regions, the Royal Scientific Society has identified 20 industries in the first instance and is working on further scope for development, the Industrial Development Bank has a separate Division for identification of industrial opportunities, the Ministry of Social Welfare has sponsored studies for development of handicrafts and is working on schemes for development of rural artisans, the Cities and Villages Bank has sponsored studies on identification of income generating activities and has schemes for granting small loans on soft terms to artisans, and the General Union of Voluntary Agencies is making efforts for upliftment of rural artisans and other small industrial activities in the villages. Unfortunately the agencies do not have effective coordination with each other and are often unaware of the efforts being made by others.

- ii- A number of surveys and studies are being conducted independently by various agencies on different aspects of industries. Surveys and studies are not an end in themselves, they should lead to some action programmes. The study on Technical and Technological Requirements of Industrial Units in Jordan conducted by the Royal Scientific Society should lead to provision of essential technical inputs, tailor made training programme and a comprehensive modernization programme.
- iii- Technical departments of various Universities, technical institutions are eager to provide technical and technological guidance to the industrial units, but there is no complementarity between these agencies and no consolidated programme for optimum utilization of capabilities of each institution.
- iv- There is lack of coordination among various data collection and processing agencies and the computer network at the National Information Center at the Ministry of Planning, the Department of Statistics, the Directorate of Information and Studies at the Ministry of Industry and Trade and the Chamber of Industry.

The Ministry of Industry and Trade is the main body responsible for all activities relating to industrial development. As such, it should take a lead in coordinating the activities of all concerned agencies. It is suggested that the Ministry may constitute an Industrial Development and Coordination Committee for this purpose. Indeed the Special Committee for Planning, constituted at the time of preparation of Five Year Plan may be broad-based to include representatives of all concerned agencies and given a permanent status. Such an institutional arrangement is considered essential for coordinating the development activities of all concerned agencies and specially so if the suggestion for Industrial Development Decade is accepted and implemented.

Strengthening Of Data Base And Monitoring

It is a well recognized that effective and efficient development management is difficult to achieve without an organized flow of relevant information; in other words, supported by a monitoring system. While potential seems to exist for speedy development of industrial production and exports, past performance indicates that this is a colossal task which would require all-out efforts on the part of the development agencies and the private sector.

The Ministry of Industry and Trade has taken a significant and timely step in setting up an Information and Studies Division to strengthen the data base and catering the information requirement of the Ministry. The Division has already installed a computer and is developing software for various Directorates in the Ministry. Under the UNIDO Project, a Data Base Specialist visited the Ministry during August- September, 1989 to appraise the current information processing capacities and capabilities and make suggestions for strengthening the same. The appraisal has revealed that certain essential requirements are still to be met to integrate the current software development into an industrial planning information system. Suggestions have been made to strengthen a base of trained personnel to meet increasing computerization needs through appointment of certain key personnel and organizing training on operations involving computer software development and personal computer use. To develop a streamlined system from the very initial stages, the specialist has suggested measures to relieve bottleneck of centralized data entry, increase effectiveness and efficiency of Directorate operations, give priority to creating and enforcing standards for data classification in all entities, and developing a network to enable the Ministry to share information with outside entities. These measures would no doubt go a long way in strengthening the data base for meeting the planning and monitoring requirements.

Monitoring

The Ministry of Planning has already evolved a monitoring system for all the projects included in the Plan. While detailed information is being obtained for all projects having an outlay of JD 2 million and above, in respect of other projects, a track is kept of the progress.

For a comprehensive programme of industrial development, there is need for a more detailed monitoring system in respect of physical achievements as well as effectiveness of policies both at macro and sub-sectoral levels to ensure that the performance remains 'on course' and the envisaged growth is achieved. It would require breaking up of the goals to specific activities or projects in the industries sector to facilitate monitoring.

The main goals and objectives relating to operation, performance and impact can be clearly defined and quantified and their related indicators selected for monitoring. However, it is sometimes not possible to observe and measure the impact of certain activities directly and, in such cases, indirect or proxy indicators may have to be used. These should therefore, be only partial indicators and its use would require great caution.

Performance indicators- Performance indicators for smooth growth of the industries sector can be prescribed both for sector as a whole as well as performance of sub-sector. These indicators are illustrated as follows:

Performance indicators for sector sub-sectors

- A. Index of industrial production
Value of gross output
Factor productivity indicators
 Capital output
 Labour output
Cost of imported inputs
Capacity utilization
Export volume indicators
Export value indicators
Investment
Employment
Growth of newly registered units till they reach production stage
- B. Utilization of incentives and facilities
Exchange rate fluctuations
Credit- long and medium term credit, pre-shipment credit and interest rates

It is important to underline an important distinction between two separate but interlinked monitoring indicators at A and B above. The indicators at A are meant for recording operations and growth; the other activity relates to measurement of policy impact. The functioning of these two activities is quite different.

Monitoring operations of performance mainly involves continuous measurement and recording of activities and outcomes, monitoring of policy impact is concerned with the effects and impact of policy measures on its beneficiaries or activities and usefulness of policy measures.

Micro- level performance indicators

While the overall performance of the units in the sector/ sub-sector would be reflected in the performance indicators, it is also essential that a close watch is kept on healthy growth of individual units. Banks are in the best position for early detection of any shortcomings or sickness through warning signals that become evident from time to time. Sickness in a sizable number of units could be prevented if warning signals are taken note of. These signals could be illustrated as under:

- failure to make timely payment of instalments of principal and interest,
- continuous irregularities in cash credit, overdraft statements and other control statements,
- down-ward trend in credit summations,
- rising level of inventories which may include large proportion of slow or non-moving items,
- larger and longer outstandings in bill accounts,
- failure to pay statutory liabilities,
- utilization of funds for purposes other than running the unit.

Incipient sickness can be detected at an early stage if mutual confidence is developed between the borrower and the bank so that a borrower would not hesitate in disclosing to the bank even minor difficulties he may be facing in running the unit. The Branch manager should be primarily responsible for picking up signals of incipient sickness. He should arrange to provide such financial assistance as possible including a reasonable extra-accommodation, rescheduling of loan instalments, extension of moratorium period, non-compounding of interest, etc.

In case a unit really falls sick, a system may be evolved for determining a revival package after conducting a viability study. A suitable definition of sick units could be evolved. The revival package may comprise start up expenses, contingency loan assistance, rescheduling of loans and interest dues and contribution towards consultancy services.

3. SUB-SECTOR STUDIES AND PLANNING

Need For Sub-Sector Plans

The first serious attempt for an Industrial Sub-Sector Survey in Jordan was made by the Ministry of Industry and Trade in close collaboration with UNIDO/ Arab Industrial Development Organization (AIDO) under project SI/JOR/86/805. The main objectives of the Survey were:

- a. a factual independent assessment of the performance of four key industrial sub-sectors namely food, textile, chemical and building material industries in order to determine their present status, pace and pattern of growth, main constraints and strategy within the framework of country's overall industrial strategy, and
- b. consolidation, processing and storage of industrial information and data emerging from the industrial survey, using a computer system.

An extensive study of the four sub-sectors was undertaken. The study comprised analysis of the trends in growth and production, capacity utilization, value added, import content, exports, investment, employment, capital and labor productivity as well as an assessment of basic issues and constraints, and recommendations for directions of sub-sector growth.

The industrial survey should have been followed up by action programmes for development of the sub-sectors based on the findings and recommendations of the survey. However, the same could not be done.

In the context of the current economic situation, intensive development of industries has become imperative. The following facts are pertinent in this regard:

- The favorable climate that Jordanian manufactures experienced in seventies and early eighties no longer prevails and a new approach for industrial development both at macro and micro levels is called for;
- Certain constraints which have defied solutions so far like lack of inter-sectoral and inter-industry coordination, modernization of existing units, identification of new and high value added product lines for promotion, and increasing competitive efficiency can only be tackled through integrated sub-sector planning.

- There is an urgent need to promote export oriented and efficient import substitution industries due to constraints of foreign exchange,
- The economic recession beginning 1983 had a profound impact on the rate of industrial growth and has also resulted in under utilization of capacity in a number of industries. Most of the industries are facing difficulties in competing with imports and maintaining market shares in exports. These problems can mainly be tackled at gross-root level.
- The pattern of growth has resulted in a number of structural weaknesses in the industries sector. A special characteristic is the narrow range of products and markets. In the domestic market, a large number of small and medium scale industries catered the requirements of construction sector, which has slowed down in the recent years adversely affecting the establishments which have few linkages with other sectors. A well defined diversification programme could be worked out through in-depth analysis.

Objectives Of the Study

Keeping in view the above characteristics of the growth of industries in Jordan, there is imperative need for preparing integrated and well coordinated programmes of action for expeditious development of the key sub-sectors. The study for preparing such sub-sector plans has been designed with the following basic objectives:

- a factual assessment of the performance of the sub-sectors in order to determine their present status, identify constraints and potential for development,
- taking a futuristic view of growth, prepare pragmatic programmes of action to increase competitive efficiency, export worthiness, and ensure necessary linkages,
- identify promising lines of investment and suggest bankable investment proposals,
- provide a clear sense of direction at the sub-sector and sector levels and suggest suitable measures to achieve the goals.

Scope of Study

In order to achieve the objectives, a comprehensive study would have to be undertaken to prepare the sub-sector plan. Taking data available from the census being conducted by the Department of Statistics and information available with the Ministry of Industry and Trade, Chamber of Industries, Industrial Development Bank and the Royal Scientific Society as base, a qualitative study would have to be undertaken to identify specific constraints and measures for speedy development. For this purpose specially structured questionnaires and schedules would have to be canvassed both through on the spot visits of industrial units, interviews and group discussions.

The following aspects need investigation and detailed study:

Trends in growth

(Study of the trends should relate to the period 1984 to date and earlier period whenever relevant),

- . Number of establishments- by size of employment and investment in machinery and equipment,
- . Value of production (gross output), share of sub-sector in total manufacturing, ratio of component in gross output namely gross output, intermediate consumption, and value added, intermediate consumption by kind of industry, value added by kind of industry, suggestions for increasing the component of value added;
- . Installed capacity and capacity utilization, analysis of reasons for under utilization of capacity and suggestion for measures for higher capacity utilization;
- . Employment- by activities, sex, nationality and by managerial, skilled, semi skilled, unskilled labor, skilled technicians and managers, labor productivity, examination of problems relating to skilled labour and technical personnel, need for on the job or other training;

Investment- fixed and working, investment by sources of finance, value of fixed assets at factor cost and depreciation, purchase of fixed assets by types of capital goods, adequacy or otherwise of fixed and working capital, capital productivity,

- . Raw materials and Intermediates- main raw materials and intermediates and their sources of procurement i.e. local and imported, structure of imports by commodities and countries, main imports by value and quantity, agencies through which procured, examination of measures for easy availability of raw materials and intermediates i.e. bonded warehouses, etc.

Marketing and exports

Domestic Demand- analysis of demand originating from

- institutional demand viz. hospitals, educational institutions, construction companies, etc.;
- parts, components, ancillaries required by large scale establishments,
- domestic consumer demand, characteristics of domestic market.

Nature of above demand, quality, value, present sources of supply from domestic production and imports, likely increase in demand in near future, possibility for import substitutions, scope for expansion of capacity of existing units and for new units to be set up.

Exports- trends in volume and value, countries to which exported, characteristics of export markets, nature of competition; analysis of constraints with regard to export i.e. cost competition in foreign markets, lack of information about foreign buyers and markets, export finance, adequacy of incentives for export, position of bilateral agreement, exports to countries outside agreements; measures to boost exports.

Entrepreneurial qualities and managerial efficiency-

Analysis of entrepreneurial and managerial skills, measures to be taken to upgrade the same, specific type of training programme required or other measures.

Technical and technological efficiency -

Nature and type of technical and technological problems being faced by the sub-sector relating to:

- a. standardization, quality control and testing both in-house and in laboratories,
- b. machinery and equipment,
- c. processes,
- d. lack of technical and skilled personnel;

What steps have been taken so far to upgrade technology and with what result, what measures are required to be taken. Is there

need for a modernization programme to increase competitive efficiency- what should be the nature and scope of the modernization programme, are the units willing to pay for such a programme? Is the necessary expertise available within the country?

These aspects may be examined in close collaboration with Consultancy Wing of the Industrial Development Bank and RSS so as to benefit from their studies and experience. The study should be more of the nature of a diagnostic study to identify specific modernization needs of the individual units, prescribe remedies and should lead to specific action programmes.

Linkages and coordination

Analysis of the present status of linkages and coordination, the sub-sector has developed with other sectors of the economy like agriculture, horticulture, etc. inter-linkages between industry itself, inter-linkages with trade and commerce, what more coordination is required and measures to strengthen such linkages and coordination?

Under UNIDO project DP/RAB/86/001- Regional Arab Programme for the Development of Sub-contracting, a chain of sub-contracting exchanges (SCX) are proposed to be set up in the Arab countries including Jordan. The SCX in Jordan, as in other countries, would have to keep a record of spare capacities, details of machinery and equipment available with the units willing to take up manufacture of ancillary items. On the other hand, an up-to-date record and information on all identified items, which can be farmed out to the small and medium scale units would have to be obtained and kept at the SCX. UNIDO has prepared a performa for obtaining the requisite information which may be taken into consideration while designing detailed questionnaires for the study. The World Bank Study on "Policies and Programmes for Small and Medium Scale Industries in Jordan" January, 1988, has estimated that the potential market for parts and components of large scale natural resource based industries and trucking companies which could be manufactured by small and medium scale industries is between US \$400 million to 600 million. With the envisaged foreign exchange saving of such a magnitude, very serious efforts would have to be made to identify such parts and components. Such an identification would be possible only through a detailed study. The plan for development of ancillaries would cover a cross section of sub-sectors viz. engineering, chemicals, electrical etc. This would be an ideal way to boost industrial production of quality products thereby saving foreign exchange. Information

collected through the study would be of immense value for the proposed chain of sub-contracting exchanges.

Incentives structure

Analysis of the adequacy or otherwise of incentives and facilities currently being enjoyed by the sub-sector by way of tariff on inputs and import of finished products, facilities under the Encouragement of Investment Law, financial institutions, etc, the felt needs of the sub-sector and what precise steps are required to be taken to ensure speedy growth?

Other aspects

Other salient aspects, if any, relating to institutional support, infrastructure development, data or information requirements, simplification of procedures, etc. may be analyzed and solutions suggested.

Development Plan

Scope and potential for growth

On the basis of analysis of the above factors, a plan for development of the sub-sector would be prepared specifying the following:

- a. Existing Industrial Units- scope for fuller utilization or expansion of capacity, diversification of production activities, increasing the competitive efficiency, etc.
- b. New Industries- identification of new product lines which have scope for development - For each product line full justification for identification may be given along with project profiles. The profiles may give specifications of the product, its uses, target markets and their potential -both domestic and exports, capacity, main raw materials, requirements of land, main machinery and equipment, employment- technical, skilled and unskilled, value addition, estimated fixed investment, working capital requirements, and suitable location, etc. Such profiles or information sheets would facilitate investment decisions on the part of prospective entrepreneurs as well as promotional agencies.

Action programmes

On the basis of the findings, action programmes may be specified with regard to testing facilities, standardization and quality control, industrial accommodation, technological, management and

training inputs, additional incentives, adjustments in tariff structure, facilities for procurement of machinery and raw material, trade and other cooperation agreements, joint ventures, etc. Similarly, the precise roles of Governmental and semi-government, technical and financial institutions, chambers of industries and commerce, commercial center etc. may be specified.

Methodology of study

Coordination

Closest coordination among all the concerned agencies is extremely important to develop a meaningful plan of development for the sub-sectors. For this purpose, the Ministry of Industry may constitute a working group to ensure coordination among all the agencies, and organize, supervise and guide the study. The main agencies concerned are the Ministry of Industry and Trade, Ministry of Planning, Department of Statistics, Royal Scientific Society, University or other specialized institutions, Industrial Development Bank, Chamber of Industry, Jordan Commercial Center Corporation, etc.

Personnel

A nucleus cell may be created for each sub-sector. This would comprise an expert fully conversant with various aspects of the sub-sector who would coordinate the work and be responsible for conducting the study. To assist the expert, at least one economist/statistician and one technical person may be appointed. This nucleus cell may be actively assisted by the personnel in various Directorates of the Ministry of Industry and Trade.

Time frame

It is estimated that at least 4 months would be required to complete the field work and prepare each sub-sectoral plan. The result of 1988 census are likely to be available by January-February, 1990. The work for preparation of the sub-sector planning could be started immediately thereafter.

Financial support

The previous sub-sector studies were conducted by the Ministry of Industry and Trade with assistance from the UNIDO and AIDO. UNIDO contribution was US \$83,000 while AIDO contributed US \$75,000 directly to the Government towards expenditure on the project in accordance with the agreement signed between the Government and

AIDO. For the suggested sub-sector planning study both UNIDO and AIDO may be requested for active participation.

Selection of sub-sectors

It is desirable that plans are prepared for all sub-sectors to determine their scope and prepare action programmes for their development. The work would have to be taken-up in a phased manner. The 1987 Industrial Survey of Jordan had covered four sub-sectors namely textile industry, food industry, chemical and engineering and building materials industries.

Since all the spade work has already been done in the earlier study, these four sub-sectors may be taken up for detailed sub-sector planning in the first phase. This phase would cover almost 50 percent of industrial units and 80 percent of value added. Other sectors like leather, paper and paper products, printing and publishing, electrical, electronic, furniture and wood industries, etc. could be taken up in subsequent phases:

The coverage of the sub-sectors are suggested as under:

Textile industry-

The Textile industry has recently shown encouraging trends. Exports of 351 establishments registered with the Chamber of Industries amounted to JD 20.52 million in 1988 against JD 15.16 million in 1987 showing a growth of 35.3 percent. During January-June, 1989, exports amounted to JD 18.83 million compared to JD 12.10 million in the corresponding period of the previous year. The exports were confined to Iraq 87.6%, Other Arab Countries 4.4%, North America 4.8% and Europe 2.4%.

There is keen interest on the part of the Industrial Development Bank and the Chamber of Industry to develop textiles and specifically the ready-made garment sector to exploit the potential in European and American markets more so because Jordan has no quota restrictions in these markets. In addition, the traditional Arab market also has very good potential. The Industrial Development Bank has already organized two workshops to discuss various problems the industry is facing and find ways and means to promote the industry.

The study may cover all aspects of the industry namely spinning, weaving, finishing, dyeing, ready-made garments, etc.

Chemical industry-

Chemical industries sub-group comprise intermediate products such as alkyd resins, industrial gasses, inorganic chemicals as well as finished products like paints, varnishes, lacquers, wet batteries, etc. Chemical industries have shown encouraging progress. During the period 1975-1982, real value added grew @ 30 percent p.a. which was 10 percentage points faster than the overall small

and medium industries growth. The sub-sector exported about 23 percent of its output in 1982 which increased to 36% in 1984. The exports of 65 establishments registered with the Chamber of Industries increased from JD 17.95 million in 1987 to JD 18.85 million in 1988. The exports during first six months of 1989 show a growth of 30 percent over the corresponding period in 1988. The plastic sub-sector shows similar trends of growth but the actual exports were of a lower order.

The sub-sector plan would specially have to take care of problems of technology upgradation, diversification of production and training of technical personnel to increase competitive efficiency.

Pharmaceutical industry

Pharmaceuticals is one of the fastest growing industrial sub-sectors in Jordan. With 1979=100, the index production for the sub-sector had increased 223.8 in 1983 and 345 in 1988. The sub-sector has developed very effective marketing and distribution system and has made significant contribution to exports. With fast changing technology and competition with multinationals in the neighbouring markets, the sub-sector has to constantly strive to increase its competitive efficiency. A separate sub-sector review is according recommended for pharmaceuticals.

Agro-industries-

The Industrial Survey, 1987 covered food processing, beverages, cigarettes and tobacco. Rightfully the sub-sector plan should also cover agriculture inputs like agricultural implements, machine and tools, plastic sheets, rubber pipes, etc. Because of its heavy dependence on domestic market and domestic resources, the sector has maintained its growth even in times of recession. Roughly only 10 percent of its total production is exported at present.

The successive Plans have stressed the need for closest cooperation between industry and agriculture sectors and this aspect would have to be looked into and close coordination ensured in the sub-sector plan. Other pertinent problems which need immediate attention are technology upgradation, low capacity utilization, exploring possibility of common purchase and sales programme as 56% of the units are under tiny category employing less than 5 workers.

Engineering and building materials sector-

The Industrial Survey, 1987 covered building materials sub-sector i.e. Cement, pottery earthenware, glass sheets and glass products, tiles, cement blocks and concrete poles. The coverage of the sub-sector may, for the proposed study include:

- a. non-metallic mineral products,
- b. basic metal industries,
- c. non-electrical machinery,
- d. electrical machinery, and
- e. transport equipment.

This sector is by far the largest of the four sub-sectors. The sector accounts for 38 percent of the value added but only 25 percent of the number of firms and employment.

The sector covers a wide variety of goods like wires, domestic appliances, pre fabricated products, electrical equipment, locks, refrigerators, aluminum profiles, bricks and tiles, sheet glass, cement and rock wool. Except for the last four products, the sector heavily depends on imported raw materials, like wire, formed steel, aluminum sheets and billets, zinc, brass, etc.

The sector is dependent on domestic market as exports of engineering goods, are only 12 percent of the gross output. Percentage of value added varies from 26 percent in engineering and 52 percent in building materials industry.

The felt needs of the sector are diversification of production activities, improvements in design and quality production and increasing competitive efficiency to take up production of a variety of ancillary items, both within the country as well as for other countries in the region which have linkages of sub-contracting exchanges.

Follow-up of sub-sector plans

The plans would pinpoint action programmes to be taken up for development of the sub-sector. To achieve the objectives of increasing the competitive efficiency and export worthiness, the suggestions made in the plan would have to be actively followed-up.

It would be pertinent to have a very clear conception of the futuristic role of the sub-sectors. The forces of competition and urgent need for export promotion have made it an economic compulsion for the sub-sectors to modernize and adjust themselves to changing environment. Apart from suitable action at macro level like policy and institutional support, active follow-up action would have to be initiated at least in three directions viz. escort services for existing and new units, monitoring of progress, and modernization of sub-sectors. The suggested procedures for escort services and monitoring have already been discussed in the previous Chapter.

Modernization of sub-sectors

The programme of modernization envisages upgradation of out dated technology through identification of felt needs and guiding them to get optimum inputs and outputs. The main objectives of modernization are:

- . improvement in production technology
- . product design and development
- . testing and quality control
- . selection of proper machinery and equipment
- . selection of proper raw materials
- . upgradation of skills of personnel, and
- . application of management technology.

In order to ensure success, modernization programme requires an integrated approach encompassing transfer of technology, financial support, market development, boosting export efforts, training, etc. Countries like South Korea and Singapore, which have emerged from the developing stage, have institutions for development and transfer of technology and their methodology is one of integrated approach. India has also evolved integrated modernization packages.

The modernization programme could well be linked up with the science and technology activities of the technical institutions, universities, the consultancy wing of Industrial Development Bank, Royal Scientific Society, etc.

An essential feature of the modernization programme is the willingness and active participation of units themselves. The units opting for the modernization programme should be registered by the respective technical institutions and assisted to implement the recommendations made by the experts. The units registered for modernization should, however, contribute towards the cost of techno-managerial assistance and training, preparation of status reports and modernization programme. It would be useful to have a special scheme for advancing liberal long term finance for modernization purposes as recommended in the diagnostic study i.e. for purchase of new machinery, equipment and process, etc. The actual component of the modernization package could only be decided after the programme is prepared.

4. STRENGTHENING OF THE MINISTRY OF INDUSTRY AND TRADE

In a private sector oriented industrial development environment, the role and activities of the Ministry of Industry and Trade are to be precisely determined. In such an environment, it is envisaged that the Governmental agencies would confine their activities to policy development, macro level planning, ensuring quality production and business ethics while the private sector agencies would take up activities relating to consultancy services, identification and preparation of viable bankable projects, technology upgradation, market development, etc. Like in all developing countries, the private sector agencies in Jordan are in various stages of development and are not yet in a position to perform their desired role. Hence, the Ministry of Industry and Trade would have to assume the role of a catalyst for providing all essential services and, at the same time, encourage and assist the development of private sector agencies to take up their desired roles.

Present Structure of the Ministry

The Ministry of Industry and Trade comprises eleven directorates namely Administration and Finance, Companies, Economic Cooperation and Export Promotion, Encouragement of Investment and Studies, Industries, Insurance, Registration, Standards and Quality Control and Trade. The Ministry has recently taken significant and timely step in setting up two new Directorates namely "Investment Promotion- One Window Service" and "Information and Studies". All these Directorates have significant roles to play in industrial development. The main envisaged activities of the Directorates which are more directly concerned with industrial planning and extension services are briefly as follows:

Directorate of Industries- Follow-up of the stages of execution of industrial projects and provide recommendations relating to import of machinery, equipment and raw materials; direct interested people in establishing such industries towards sources of information and statistical data; follow-up on the activities of industrial companies manufacturing 'credited' products for Government purchase; execute Government policy concerning supplies required by Government Ministries and Departments and local establishments concerned, follow-up on industrial coordination programme and policy on regional distribution of industries, supervise the activities of the Chambers of Industry, etc.

Encouragement of Investment Law and Studies- Undertake preliminary studies for industrial projects to identify those industries

having economic feasibility and to decide on priority of their execution; undertake economic, technical and financial studies relating to local factories and assess the extent of assistance required to overcome problems, study cost of local products that enjoy exemptions, protection or privileges taking into consideration consumer welfare; encourage investment, both local and foreign, through all necessary means, participate in preparing studies and recommendations relating to cooperation with Arab and international organizations to profit from their assistance and services.

Economic Cooperation and Export Production- Formulate projects, agreements, protocols of economic and trade nature, undertake studies for their improvement; undertake necessary studies for imported commodities, and analyze them for possible substitutes; undertake studies to promote marketing of Jordanian products, and participate in fairs and exhibitions; supervise economic attaches; undertake research and prepare recommendations specific to Arab Economic Council, etc.

Trade- Supervise implementation of Import and Export Laws and guidelines; issue import and export permits; supervise trade chambers, execute agreements and protocols on trade, between Jordan and Arab and foreign countries, and implementation of decisions reached in the regional Arab Agreements.

Standardization and Quality Controls- Application of Law of Standards and Specifications, setting standards and specifications for local and imported commodities and products in accordance with Arab and international specifications; conduct research and technical tests both for local and imported products and issue certificates for quality products; monitor the application of metric system and standards, weights and measures; ensure that the display labels on products and packages give authentic information.

Investment Services- (Investment Window)- Collection and dissemination of all necessary information and data pertaining to investment, publication of pamphlets, brochures and other material relating to incentives, facilities, procedures, and formalities, incentives and assistance available from various sources for the guidance of entrepreneurs both in Jordan and outside; receive investors, guide and assist them on all phases of investment, follow-up in fulfilling the procedures and formalities with concerned agencies and departments for clearances and issue necessary approvals in close collaboration with the concerned authorities.

Information and Studies- Creation of a data base through collection, maintenance and dissemination of information and statistics on industries and other aspects pertaining to the objectives and activities of the Ministry of Industry and Trade; data storage in the computer, coordination with other information centers of similar nature both inside and outside the country; undertake studies, surveys and analysis of information that will assist in achieving the objectives in areas of investment, export promotion, establishment of industries, etc.

New Orientation

A review of the working of the Directorates reveals considerable gaps between the activities originally envisaged and those actually being performed. Such gaps are more prominent in respect of promotional activities and various types of studies envisaged to be undertaken. This could mainly be attributed to preoccupation with regulatory and procedural matters, lack of adequate and trained staff, non-availability of adequate information about industrial activities.

The Ministry of Industry and Trade, would require adequate strengthening and assistance to perform certain key activities to give the desired push to industrial development. These activities could be summarized as follows:

- Sectoral and sub-sectoral reviews and preparation of pragmatic plans and programmes of action in the context of a rolling plan and annual plans,
- Economic analysis and policy development,
- Technical and technological upgradation,
- Training for upgradation of skills,
- Market research and development,
- Entrepreneurial development and stimulation of private enterprise
- Strengthening of data base and monitoring.

These activities would involve creation of a new Directorate of Planning and coordination as well as strengthening the existing Directorates to undertake envisaged activities. It may be clarified that the proposals relate primarily to strengthening the planning and implementation capabilities of the Ministry of Industry and Trade although with rapid growth of industrialization, the entire range of activities of the Ministry would have to be substantially strengthened.

Directorate of Planning and Coordination

The Ministry of Industry and Trade has no separate unit for planning and coordination at present. Four directorates are concerned with planning activities namely Industry, Encouragement of Investment, Economic Cooperation and Export Promotion and Information and Studies but their activities appear to be peripheral to the main task of planning. With a view to making the process more effective for rapid economic and social progress in harmony with the prevailing needs and priorities and to provide much needed support to the Ministry of Planning, it is essential that a separate Planning and Coordination Directorate is set up in the Ministry of Industry and Trade. Such a unit should primarily be concerned with preparation of sectoral and sub-sectoral plans, identification and formulation of development projects and, in close collaboration with other Directorates, developing self-reliance for identification of policy issues for decision making and monitoring of progress. Another salient area of activity would be working as secretariat for the proposed Industrial Development and Coordination Committee. The main activities of the proposed Directorate are discussed in the following paras:

Preparation of the planning framework

Strengthening of data base- Up-to-date and reliable statistics provides the indispensable base for any programme for development. In close collaboration with the Directorate of Information and Studies, the Directorate should organize and assemble all essential information on existing activities, local output, current demand, imports, export potential and felt input requirements of each sub-sector. Additional and essential qualitative and quantitative information in respect of each sub-sector would be collected through sub-sector planning studies. On the basis of requisite information, projections would be prepared for each sub-sector for the given period in consultation with the Ministry of Planning with regard to the rate of growth, elasticity of demand, etc.

Performance reviews and monitoring- The planning units would undertake periodical performance reviews and evaluation of programmes and projects in operation in light of the objectives as well as goals outlined in the plan namely exports, value added, employment creation, etc. to provide the necessary feedback to enable the Ministry to re-examine the assumptions on which on-going programmes are based and make appropriate revisions and modifications. This would, in turn, require a sound reporting system and determination of regularity and frequency of reporting.

Identification and development of policy issues- A continuous review of the policy framework, within which the plans and programmes have to be prepared and implemented, is essential to identify bottlenecks in order to take suitable remedial measures. The planning unit, in collaboration with the Directorate of Encouragement of Investment and Studies, would identify salient aspects and arrange the studies to be conducted.

Preparation of sectoral plans

In the context of dynamic role envisaged for the private sector, the Ministry has to take immediate steps to formulate action programmes for development of the private sector supported by adequate promotional measures and to identify areas of priority within the industrial sector in order to encourage viable export oriented industries. The proposed sub-sector studies and plans and policy related studies would identify action programmes relating to rehabilitation, balancing and modernization needs of the existing units and developing new activity for establishing manufacturing capabilities, examining management practices and low capacity utilization and taking measures to improve performance. In other words, the Planning Unit would initiate and supervise action programmes prepared to translate into action, the long-term strategy being devised for the speedy growth of the industries sector through rolling and annual plans for effective implementation.

Linkages and coordination-

The successive development plans have stressed the need for close coordination between industries and other sectors and amongst industries themselves. Suggestions for an Industrial Development and Coordination Committee have already been given in an earlier chapter. The Planning Unit may act as secretariat for the Committee. It would thus have to actively coordinate and establish close linkages with other Directorates within the Ministry, other concerned Ministries, Corporations, non-Governmental organizations, technical institutes, banks and the private sector. An important activity of the Planning Unit would be organization of workshops to discuss issues relating to policy development and implementation problems, etc.

Structure of planning unit-

There should be a clear identification of the work responsibility of the planning units, and there should be at all times a manifest use of the personnel of the planning unit for the activities as envisaged for it. This has become all the more necessary in view of the fact that often such units tend to engage in

day to day administrative work rather than the actual job for which they are set-up.

It is suggested that the Directorate may be headed by a senior Director and comprise three sections namely:

- a- Planning and implementation,
- b- Progress reviews,
- c- Coordination.

The actual strength of the Directorate could be determined after a final decision is taken regarding the activities of the new directorate.

Technical development

The problem of increasing competitive efficiency of the industrial units has assumed added significance in the context of export promotion. Even the leading industrial establishments in Jordan have made requests to the Ministry of Industry and Trade for technical assistance in production management, maintenance management, problems relating to specific industries like paints and coatings, steel pipes, white cement production, corrosion/erosion of equipment, etc. Through the efforts of UNIDO project, the services of short-term consultants are being procured for these jobs. According to the study conducted by RSS, 54 percent of the industrial units expressed their desire of improving the quality of their products and reducing their cost of production. Further, during discussions held at the Chamber of Industries, Chairmen of all the 13 industrial sub-sectors were unanimous about the urgency for providing technical assistance to the individual units to improve their productivity.

There is need for coordinating the activities of all the concerned technical agencies in order to provide a package of technical consultancy services as well as implementing the modernization programme emerging from sub-sector planning studies.

The Directorate of Industries in the Ministry is in the best position to render such technical and technological services since it already has four sections dealing with engineering and construction; chemical and plastic; food and packaging; and, textile and footwear group of industries. To provide the essential technical services, the Directorate may be renamed as Directorate of Technical Development. The Directorate has already technical staff specializing in the four broad group of industries but is constrained due to meager staff compared to the volume of work it handles. To take up new responsibilities of technical and technological services, it would have to be adequately strengthened.

With the technical expertise available with the Directorate, it may also assume the responsibility of setting up and operation of sub-contracting exchange.

The Directorate is currently looking after the activities of the Chamber of Industry. It may as well take the responsibility of looking after and coordinating technical activities of all Governmental, semi-Governmental and private agencies concerned with technical development like the consultancy wing of the Industrial Development Bank, RSS, Technical Departments of the Universities, etc. Wherever, the expertise is not available locally, international agencies could be requested for assistance.

The UN family of agencies as well as other aid-giving agencies like USAID, etc. are offering a variety of facilities for technical, technological, economic, marketing, training, private sector development, etc. There is need for optimum utilization of all such facilities. It would be useful if the work is coordinated by the Directorate of Industries. In other words, the Directorate should be the nodal agency of the Government in respect of all aid flows pertaining to industrial development.

Standardization and quality control

The successive Five Year Plans have emphasized the need for strengthening standardization and quality control efforts in the country. The Directorate of Standardization and Quality Control is issuing about 70 standards per annum. The need for intensifying quality control measures could be judged by the fact that out of 452 industrial units covered under a study conducted by RSS, 222 or 49 percent were having their raw materials and 250 or 55 percent were having their finished products tested for quality control.

The objectives of UNIDO project JOR/87/009 accordingly include upgrading standardization and quality control activities through analysis of the present situation with regard to quality of locally manufactured products, identifying problems hampering improvement and recommending measures to correct the situation, drawing up a work programme for strengthening the Directorate with particular emphasis on development of quality control at the industrial enterprise level, training of specialists in modern concept of quality control methods through workshops and seminars and strengthening of testing laboratories.

As part of the project activities, one Specialist in quality control of food products has already visited Jordan and is again

likely to be fielded for a second phase of his mission. As per his recommendations, some essential quality control equipment is being procured by UNIDO and two seminars on food and chemical industries are likely to be organized before the end of this year.

It is essential that as envisaged in the project's activities, detailed study of the overall situation with regard to quality of industrial products followed by formulation of the work programme for upgrading quality of selected industrial products, strengthening of standardization and meterological activities, organization of seminars and workshops on modern concepts of quality control methods, selection and installation of equipment for testing laboratories, may be carried out at an early date. This would greatly facilitate the efforts towards intensive development and smooth growth of industries.

Economic analysis and policy development

The Directorates in the Ministry of Industry and Trade, the Productive Projects Division in the Ministry of Planning and the Chamber of Industry are conscious of the urgent need for undertaking policy related studies. But there is a serious gap with regard to capabilities for undertaking applied economic research studies for suitable policy measures and determining priorities.

Suggestions for several studies have been made in a preceding chapter which are considered essential to rationalise the policy structure. These relate to impact of tariff as instrument of industrial growth, streamlining of interest rate and tax structure to make investment in industries sector more attractive, financial structure of small and medium industries, adequacy of incentives for industrial dispersal, study of pattern of industrial development and imports of manufactured products in ACC and other neighboring countries, etc.

The Directorate of Encouragement of Investment and Studies is mainly concerned with policy development and is in a better position to pinpoint policy areas which are required to be strengthened and undertake in-depth studies for identifying development alternatives. Such studies are more of a qualitative analytical nature and are different from statistical surveys. It is suggested that the activities relating to policy related studies may be entrusted to the Directorate of Encouragement of Investment. The Directorate may be strengthened by way of additional staff and training in techniques of economic research and analysis. The Directorate should also coordinate its activities with agencies already engaged in such activities namely the

Economic Research Wing of the Royal Scientific Society, the Industrial Development Bank, etc.

Industrial finance is another aspect which requires in-depth studies for making investment in industrial pursuits more attractive. The Directorate may, from time to time, analyse the problems and liaise with existing and prospective entrepreneurs as well as with Industrial Development Bank and other financial institutions to ensure smooth flow of credits for industrial activities.

The work relating to tariff policy, impact of custom duties, quantum of protection to be accorded to local industries involves economic analysis and research. Activities relating to requests for protection, study of manufacturing value added, cost value analysis, etc. which are currently being undertaken by the Directorate of Industries may be transferred to the Directorate of Encouragement of Investment and Studies.

The basic idea of the above suggestions is that the Directorate of Encouragement and Studies may ultimately function as Economic Adviser to the Ministry i.e all activities involving economic analysis and advice on economic issues may be entrusted to it.

Information and studies

An analysis of the activities of the Directorate has already been carried out by the Data Base Specialist who has given suggestions for appointment of certain key personnel, training, of staff and procurement of additional software and hardware. To streamline the system, it is suggested that the recommendations of the Data Base specialist may be considered for implementation by the Ministry on a priority basis.

The newly set-up Directorate of Information and Studies has a section for conducting "directly or indirectly studies, surveys and analysis of information and data that will assist in achieving the Ministry's objective specially in areas of investment, export promotion, organization of industry etc". It is suggested that the Directorate of Information may confine its activities to collection of all essential statistics and its computerization while the work relating to studies may be entrusted to the Directorate of Encouragement of Investment.

Investment promotion and entrepreneurial development

The need for providing essential services to the prospective entrepreneurs, and steps for a bold and comprehensive programme for entrepreneurial development have already been discussed in an earlier Chapter. The newly set-up Directorate of Investment Promotion Window, being the first contact point of a prospective entrepreneur, would have to be substantially strengthened. Apart from provision of development, regulatory and technical information additional activities of the Directorate may include programmes of identification and development of entrepreneurship and provision of extensive escort services at pre-investment, investment and post-investment stages.

In respect of entrepreneurial development, the activities are more significant because at present there is no promotional agency undertaking this important activity. This would comprise identification and follow-up of promising entrepreneurs from among the persons who have applied for registration, expatriates returning from abroad, students coming out of technical educational institutions, etc. Short training courses, workshops and seminars at the Governorate levels, close association with the Chamber of Industry are considered essential for stimulation of entrepreneurial skills.

The Directorate at present comprises one Director, two economists and two supporting personnel. This staff is very meager in the context of envisaged activities.

The Ministry of Industry and Trade has at present, three sub-offices in Irbid, Zarqa and Kerak that are engaged in regulatory activities. These sub-offices may also initiate activities relating to entrepreneurial development and escort services at the regional levels. At least one official may be posted in each of the three sub-offices for undertaking these activities.

Training

For a comprehensive programme of industrial development, building-up both the physical and human infrastructure can only constitute a sound basis for future economic development. Training of personnel to upgrade their functional capabilities is required not only for the personnel of the Ministry of Industry but also the personnel concerned with industrial development at the Ministry of Planning, Industrial Development Bank, Royal Scientific Society and the private sector establishments.

In the context of strengthening planning and implementation activities, a specially structured programme should be given priority. The course coverage may include techniques of industrial planning, policy analysis, industrial sector /sub-sector surveys and analysis, monitoring techniques, etc. This training may be organized preferably before the sub-sector planning studies are undertaken.

Training programmes may also be devised for upgrading capabilities in evaluation of projects and feasibility studies especially for large projects prior to implementation as specified out in the Plan Document. In addition, training in production management, maintenance management, marketing, enhancement of labour productivity are felt needs of the industrial establishments. Other areas of priority are programmes for upgrading the technical capabilities and services of the Ministry of Industry and other concerned promotional agencies.

UNIDO Project JOR/87/009 Industrial Services and Training has an important component of training in various aspects of industrial development. Visits of Data Base Specialist and Food Technology Specialist have led to identification of certain priority areas of training, organization of seminars and workshops and acquisition of certain essential software and hardware for computers and equipment for testing laboratories. A Training Specialist, is likely to visit Jordan shortly to assess the training requirements and suggest suitable programmes for training. It is envisaged that, the Specialist would take into account these factors for drawing-up the training programme, in close collaboration with The Jordan Institute of Management, The Royal Scientific Society, The Institute of Public Administration, etc.

It is suggested that the programme of Training may be coordinated by the Directorate of Industries.

Summing Up

The proposals strengthening the Ministry of Industry and Trade are summarised below. These proposals primarily concern strengthening the planning activities of the Ministry:

Planning and Coordination

A new Directorate may be set up for:

- a- Preparing the planning framework i.e. information system, performance reviews and monitoring, development of policy issues;
- b- Preparing sectoral and sub-sectoral plans and programmes of action;

- c- Coordination- both in planning and implementation and working as secretariat for the proposed Industrial Development and Coordination Committee;
- d- Working as nodal agency for UNDP, AIDO, USAID and other agencies providing assistance for industrial development.

Economic Analysis and Policy Research

The Directorate of Encouragement of Investment and Studies may be strengthened to undertake additional activities relating to:

- a- policy related studies and economic analysis of current issues;
- b- coordinatation studies and surveys relating to industrial development being undertaken by various agencies;
- c- industrial finance;
- d- tariff policy, and
- e- advise the Ministry on all economic issues.

Technical development

The Directorate of Industries may be renamed as Directorate of Technical Development and assigned with the work relating to:

- a- transfer of technology and modernization;
- b- setting up and operation of sub-contracting exchange,
- c- coordination of activities of all technical agencies;
- d- organization and coordination of training activities relating to both Government and private sector establishments;
- e- advise the Ministry on all technical matters.

Standardisation and quality control

Detailed analysis of present situation with regard to quality of local products and identifying problems hampering improvement followed by formulation of action plans for strengthening the Directorate for development of quality control laboratory facilities, etc, as provided in the activities of the UNIDO project may be completed earlier and activities strengthened accordingly.

Information and studies

The Data Base Specialist has already given detailed suggestions for appointment of additional key personnel, training, procurement of additional software and hardware which may be considered for implementation.

Investment Promotion

The Directorate of Investment Promotion (One Window Service) may be strengthened to:

- a- intensify existing activities to provide comprehensive range of escort services including organization of workshops, short training for new entrepreneurs;

- b- take-up entrepreneurial development activities;
- c- initiate activities at branch offices of the Ministry in Irbid, Kerak and Zarqa.

Market research and development

Both the Directorates of Economic Cooperation and Export Development and Trade need strengthening by way of additional staff and training to intensify their activities.

5. REQUIREMENTS OF ASSISTANCE

Suggestions for intensive development of industries given in the previous chapters would involve considerable expansion of the activities of the Ministry of Industry and Trade and other agencies closely concerned with the development of industries. It is imperative that the Ministry should take appropriate steps to strengthen its capabilities for planning and implementation, appointment of certain key personnel, their training and orientation to fulfill the desired tasks.

In the immediate future, the Ministry would be requiring assistance specially for preparatory activities leading to successful formulation and implementation of a comprehensive and integrated plan for industrial development. The requirements of assistance have to be considered in the context of a the objectives, outputs and activities of the project, b suggestions made in this report as well as the report of Data Base Specialist, and c requests received from the private sector enterprises agencies. Suggestions for project assistance are given in the following paras with reference to each Output of the project and the activities envisaged thereunder:

Output 1

The Output envisages upgrading skills for industrial planning and implementation, sub-sector planning, industrial policy formulation and establishment of a computerised integrated industrial data and information system to support industrial planning, development and monitoring.

The services of Industrial Planner and Data Base Specialist have already been made available to the project while a Training Specialist is scheduled to visit Jordan in January, 1990. The focus of the activities should now be on formulation of sectoral and sub-sectoral plans, policy reviews, strengthening of data base, etc.

Sub-sectoral planning

Detailed methodology for sub-sectoral studies and planning has been outlined in chapter 3 of this report. To cover the entire gamut of industries in Jordan, 9 industrial sub-sectors have been identified. This exercise may be undertaken in two phases covering 5 and 4 sub-sectors in each phase. It is estimated that the services of one specialist in each field would be required for at least 4 months each.

Earlier sub-sector studies were undertaken by the Government with the assistance of UNIDO and Arab Industrial Development Organisation (AIDO). It is suggested that the same pattern may be adopted and UNIDO assistance may be confined to provision of the services of consultants in each field. The total requirements of consultancies would thus be 36 man months (9 consultants for 4 months each).

Industrial policy reviews

With a view to reorienting industrial policies to the task of accelerating industrial development, five policy review studies have been suggested relating to tariff policy, interest rates and tax structure, financial structure of SMIs, incentives for industrial dispersal and study of pattern of industrial development and import of manufactured products in ACC and other neighbouring countries.

For conducting these sophisticated studies and preparing a framework of new policy measures, assistance by way of specialists in the respective fields would be required by the Ministry. With active assistance of the Ministry the studies could be completed in a period of 2-3 months each.

Sub-contracting exchange

Under UNIDO Regional Project DP/RAB/86/007, sub-contracting exchanges are proposed to be set up in seven countries of the region. The work relating to development of computer software for various purposes has already started in the Ministry of Industry and Trade. The services of a specialist in sub-contracting exchange would be required for designing, setting up and making the sub-contracting exchange operational. The services may be provided by way of split mission, one month at the time of initiation of sub-sector studies and two months after the first phase of studies is completed.

Stimulation of private enterprise

The Government of Jordan is keen on development of private enterprise. Out of a total outlay of JD 393 million for investment in the industrial sector, almost JD 340 million are envisaged to be invested by the private sector. In addition, the Government has a declared policy for privatisation of undertakings in which the Government has substantial capital investment.

To motivate the private sector to actively participate in accelerating industrial growth, assistance is required to identify the complexities of the tasks, clarify policy options and suggest actions to be initiated by the Government and the private sector agencies with regard to encouragement of the private sector to invest in the joint sector and other industries intended for privatisation, entrepreneurship development and measures for strengthening the Chamber of Industries to intensify its activities for providing guidance and assistance to the private entrepreneurs. The services of a consultant would be required for a period of three months.

Modernisation of industrial units

A comprehensive programme of for modernisation of selected industrial units has been suggested in the report as a follow up of sub-sector planning exercise. The services of a consultant would be required for a period of two months to work out modalities of the programme and contents of the package of assistance for the units. Such consultancy services would be required after the first phase of sub-sector planning is completed.

Monitoring

As outlined in the report, there is need to devise a system of monitoring of both physical progress as well as impact of policy measures. In addition, at the micro level, a system has to be devised, with the assistance of financial institution, to prevent sickness at the incipient stage and rehabilitation of units in case they fall sick. The services of a consultant would be required for a period of one month for this purpose.

Training

The project document envisages training of 12 professional staff in industrial planning, implementation and sub-sector reviews, 4 national officials, in issues of national policy group training in industrial planning and implementation.

All these activities are considered essential for strengthening the capabilities in formulating and implementing development plans. Emphasis should also be laid on study tours to study policies and programmes in fast industrialising countries. In such study tours, private entrepreneurs should invariably be included.

Unfortunately, the training activities could not be initiated during 1989. The training specialist is now scheduled to arrive during January, 1990 to assist the Government in assessing the training requirements and suggesting modalities in of the training programmes.

The Data Base Specialist, in her report, has suggested the following training programmes which are considered essential to develop a sound data base:

- Initial Training Course in d.base products and ORACLE
- Follow Up In-House Training Data Base support, maintenance
- Basic computer use
- Word Processing
- Spread Sheet
- Introduction to d.base products
- MIS training - one month each in Jordan and USA
- Masters Programme - Computer Science and Engineering 2 years in USA.

National consultant

The Data Base Specialist has suggested appointment of a Systems Manager to support, maintain and upgrade the system and to 'mature' with the system after the present consultants complete their assignment. The Systems Manager would train end-users directly on the use of the system as well as develop the system trainers in the Directorate of Information and Studies, who would train end users in other Directorates.

The services of the Systems Manager are required rather urgently. It is suggested that the project may provide the services of a National consultant for a period of one year on the understanding that the incumbent would be later absorbed in the Government.

Equipment

The Data Base Specialist has suggested additional hardware and software for the Directorate of Information and Studies of the Ministry which is to be procured in two phases. During the first phase, the suggested equipment would cost around US\$ 42,000. It is understood that the Ministry is already making a request for supply of the requisite hardware against the budget provision of the project for supply of equipment.

Output 2

The output envisages evolving systems of procedures and practices for appraising and formulating projects, trained national personnel in the methodology and appraisal of pre-investment studies and application of COMFAR software.

In response to these objectives, the services of one consultant have already been made available by the project to the Ministry of Planning for appraisal of the foundry project while another consultant is scheduled to visit shortly for appraisal of the project through application of COMFAR.

According to a Government decree issued in August 1988, the system of licencing for setting up and expanding industrial projects has been abolished. For purposes of documentation, the investors are required to register their investments with the Ministry of Industry and Trade. However, the activities relating to this Output are very relevant in the present context since there is need for developing capabilities for formulating and appraising projects both in the Government, the Chamber of Industry, the Royal Scientific Society, and the Industrial Development Bank.

It is suggested that services of a consultant may be provided for a period of two man months for assessing the current modalities, suggesting a system for appraisal and formulation of projects and appraisal of pre-investment studies. The consultant may also consider the desirability of in-services training courses as a regular programme for officers of the concerned agencies at the training institutes like the Jordan Institute of Management or the Royal Scientific Society. In addition, provision of COMFAR software and training is also required to be organised early.

OUTPUT 3

The output envisages analysis of the present situation with regard to quality of locally manufactured industrial products, existing quality assurance and quality control programmes, identifying problems and recommending measures to correct the situation, drawing up work programmes and training of 50 specialists in modern concepts of quality control through workshops and seminars.

The project has already provided the services of a Consultant in Food Products Quality Control whose report has been found useful. As a follow up measure, equipment for food testing laboratories worth about US\$70.000 is being supplied by the project and a

seminar on Food Products Quality Control is scheduled for December 1989.

Two recent developments have relevance to this aspect of project activities. Firstly, the Royal Scientific Society has carried out a detailed survey on 'Scientific and Technological Potential in Jordan' with base year 1986. The report of the survey is in nine volumes in Arabic of which volume VI deals with industries. A copy of Summary of the report in English has been supplied to UNIDO. The report provides useful information about quality control activities both in respect of raw materials and finished products at the enterprise level, problems being faced by units, facilities of testing not available in the country due to which units have to send their products for testing outside the country, etc.

Secondly, the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) have prepared a report for a project on the Promotion of the National System of Metrology, Standardisation, Testing and Quality (MSTQ System) in the Hashemite Kingdom of Jordan after field work during May-September 1989. The main objective of the project is to strengthen the Jordanian economy by a modern MSTQ System.

The project aims to a create and increase awareness of the importance of the MSTQ System in public and private institutions by training and motivation; b improve product quality with priority given to export products in view of difficult economic situation; and c to ease the start of EC standardisation project by improving the system of preparation, publication and management of Jordan standards. During its next phase namely longrange planning and decision making, the project aims to a create a modern and independent MSTQ system relevant to industrialised countries, b increase efficiency in the use of limited resources by improving coordination and cooperation, and c create a product oriented inspection and testing system.

The report envisages continuous assistance for 4-6 years. The total cost is estimated at DM 3 million which comprises delegation of consultants, study tour of high ranking Jordanian Officers and contingencies such as training of Jordanian technicians, investment in new equipment, etc. The report is under consideration of the Government and a final view has yet to be taken on the report.

In order to avoid duplication of activities it is suggested that the scope of project assistance under this Output may be dis-

cussed with the Government in the next TPR meeting the activities redesigned.

Output 4

The Output envisages establishing an integrated system of technology transfer, adaptation and development, establishing a nationwide computerised technological information system compatible with UNIDO based INTIB information system.

A recent development has been the setting up of a National Science and Technological Information Centre at the Royal Scientific Society. The Centre has already established linkages with other such technical centres in Europe and other places. Currently, the UN Inter Agency Science and Technology Mission is visiting Jordan to familiarise itself with various projects and programmes of Jordan in science and technology and to enhance coordination. In addition, certain bilateral agreements also envisage supply of some essential equipment.

However, all the four activities listed under the Output in the Project Document namely assessment of policies and strategies in the field of science and technology, industrial legislation, development of indigenous technologies and technical information system are very much relevant in the present context. Indeed it is desirable that services of a consultant for at least a period of 4 months is made available to undertake these activities and make suggestions for policy development, strengthening of institutional support to facilitate technology transfer, import of technology and development of indigenous technology.

Output 5

The Output envisages improved organisation structure and staffing as well as increased efficiency and productivity of assisted enterprises.

The project activities have been quite significant with regard to assistance to be provided to selected enterprises which are important in the industrial economy of Jordan. Specific areas to increase productivity and efficiency have been identified and project assistance is scheduled to be provided to aluminium, white cement, steel pipes, silicate, agricultural grade potassium, potash and chemicals manufacturing units. A consultant has already visited Jordan to assist ceramics unit in modernisation of its plant, improve quality of products and take up manufacture of additional products, parts and components which are being imported at present.

Discussions at the Chamber of Industry have revealed that the requirements of technical and managerial assistance of the medium and small scale units are quite substantial. By and large, the common problems relate to production planning, production management, production processes, inventory control, quality improvement, trained technicians, high cost of production, costing, pricing, packaging, etc. all of which combine to adversely effect capacity utilisation and competitive strength of the industrial units. Almost all the chairmen of the 13 industrial sub-groups at the Chamber as well as individual entrepreneurs insisted on technical assistance from UNIDO as the same is not available indigenously. It was explained to the entrepreneurs that it would not be possible to arrange such technical assistance for each individual unit. However, if a request is received from the Chamber of Industries for particular groups, the same could be considered provided the expertise is not available indigenously.

The problems relating to production management and maintenance management were common to all groups and it was suggested that the Chamber of Industries may work out modalities of training of entrepreneurs through workshops or seminars. The Chamber of Industry is contacting its sub-groups and working out details. Request from the Chamber of Industry for provision of consultancy in industrial management, maintenance management and production management may be considered favourably.

With regard to technical problems of medium and small scale units, which are numerous and extensive, the only solution appears to be sub-sector planning followed by a modernisation programme, strengthening of technical assistance services at the Chamber of Industry and the Ministry of Industry and Trade as suggested in earlier sections of this report.

Future tasks

The above suggestions represent the immediate requirements of assistance. Apart from the Ministry of Industry and Trade, the capabilities of the private sector organisation namely the Chamber of Industry and the technical and financial institutions like the RSS and the IDB also need strengthening. The exact nature and scope of assistance in the above field may be discussed in the forthcoming Tripartite Review Meeting.

In order to prepare a comprehensive programme for intensive development of industries and its effective implementation, it is absolutely essential that the proposed Directorate of Planning and Coordination is created in the Ministry of Industry. In

case, it is not possible to do so in near future due to administrative reasons, at least a senior Director in the Ministry should be made full time incharge for sub-sector studies and planning and the involvement of respective directorates fully ensured.

Another important aspect is the strengthening of the administrative support personnel in the project. For the present, the project has one administration assistant and a typist. It may not be possible for them to cope with requirements of several consultants at the same time for preparation of sub-sectoral plans of action. It is recommended that the responsibilities of the currently acting administration assistant be upgraded in a way as to include the programme aspect of the project also, and to appoint one more typist when the need arises.

Assistance of UNIDO and other agencies would be required for implementation of the programme of 'Decade for Intensive Development of industries'. Sub-sector plans and policy related studies would lead to specific programmes of development. Precise areas of assistance could be determined after these exercises are completed.

ANNEX. I

LIST OF PERSONS MET

Ministry of Industry and Trade

- His Excellency the Minister Mr. Ziyad Ennab.
- Secretary General- Mohammed Saqqaf
- National Project Coordinator and Director of Industries- Dr. Mohammed Bani Hani
- Director, of Companies- Mr. Mansoor Abu Hamour
- Director, Economic Cooperation and Export Promotion- Mr. Asem Al Hindawi
- Director, Encouragement of Investment and Studies- Dr. Samir S. Emeish
- Director, Insurance- Mr. Issam Khader
- Director, Information and Studies- Mr. Mohammed Kashou
- Director, Investment Promotion- Dr. Izzat Al-Uzayzi
- Director, Standard and Quality Control- Mr. Hassan Saudi
- Director, Registration- Mr. Mohammed Kharisat

Ministry of Planning

- Director, Productive Projects Department- Mr. Mustafa A. Zahran
- Director, Regional Development- Dr. Abdulilah Abu Ayyash

Ministry of Social Welfare

- Research and Planning Department
 - . Ms. Amal Sabbagh
 - . Mr. Omar Hussain

Department of Statistics

- Director General- Dr. Abdulhadi Alawin

Royal Scientific Society

- Consultant- Dr. F. A. Daghestani
- Director, Economic Research Centre- Dr. Ahmed Gassem El-Ahmad
- E. R. Centre- I/C Training Mr. Ali Z. Ghezawi
- E. R. Centre- Mr. Al Sharif Abdulla
- Textile Department- Mr. Hassan Abdo Hayyak

Higher Council of Science and Technology

- Director, Mr. Arafat Al Tamimi

Industrial Estate Corporation

- Managing Director- Mr. Faiz Zheimat

Industrial Development Bank

- Head-Research and Project Identification Division- Mr. Mazen Al-Shaker

Cities and Villages Development Bank

- General Manager- Mr. Saleh Al Hourani
- Regional Development Fund Division- Ms. Shaza Malhis

Amman Chamber of Industry

- Adviser- Dr. Ali Dajani
- Secretary Foreign Department- Ms. Nadia N. Haddad

Chairman of Industrial Sub-Sectors

- Chemicals- Mr. Bassam El-Kharouf
- Plastics & Rubber- Mr. Mohmoud El-Ghool
- Engineering- Mr. Jamal Sadeddin
- Engineering- Mr. Emad Al Shamma
- Leather Products- Mr. Issa Musalam
- Supply Industries- Mr. Thabet i. Elwir
- Building Materials- Mr. Fawaz Shalan
- Printing Press & Stationary- Mr. Ahmad R. Ghraim
- Textiles and Clothing- Eid Niwai Izz
- Packaging- Mr. Wadi S. Karadisheh

Federation of Jordanian Chambers of Commerce

- Chairman- Mr. Mohammed M. Asfour

General Union of Voluntary Societies

- Director, General- Mr. Mohammed Ali Wardan

University of Jordan

- Department of Chemistry- Dr. Saleh Uddin Sayed
- Department of Agriculture- Dr. Ayed Shaker Amr

Jordan Commercial Centres Corporation

- Senior Trade Promotion Adviser- Mr. Alex Koupparis

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