

4 Detailed Plan for Establishment of the Center

4.1 Set-up Plan

4.1.1 Major Services to be Provided

The outline of services to be provided by the Center is given in Table 4-1. The level of services varies among the departments depending on the situation of the industry covered by each department, rather than there being uniform provision of services. The services that will be provided by each department at each stage of the center's development are as follows. Tables 4-2 through 4-5 show the details for each department.

(1) First stage

The services in the Garment Technology Department will be focused on rationalizing and modernizing the existing industry. The existing industry's expectations regarding these services are extremely high. To achieve these goals, a Cutting Center that provides support for the preparatory processes in sewing work will be established, as will a Technical Guidance Unit that provides guidance for improving production efficiency.

In the packaging industries, awareness of the need to improve quality is still less than complete, so it will be necessary for the Packaging Technology Department to work on this. A technical guidance system that can grasp the situation in the existing industry and the situation with regard to potential investors, and that can identify problems, will be established, building up the guidance capability within the department (the department will not have its own testing and research machinery and equipment).

In the Non-metallic Minerals Research Department, effort will be focused on ceramic raw material development. For development of ceramic raw materials, the main function is to evaluate the potential raw materials available locally in view of their use, and disseminate the information thus obtained, among the potential investors.

A Planning Coordination Department will be established to deal with requests from industrial sectors that do not fall under the purview of the departments mentioned above. The department will provide the service of transferring the customer requests by introducing the appropriate outside organizations to handle the matter.

(2) Second stage

In the second phase, each department will expand their level of its services assuming that the services provided in the first phase have brought about certain effects for their development. Therefore, the transition timing to the second phase will vary among the departments depending on the progress of development.

In the garment industry, companies are continuing to improve their production efficiency, and are expected to strengthen their ability to move in the future from the existing production system, in which manufacturers are dependent on buyers for raw materials and designs, to a system in which production is based on a manufacturer's own designs. In line with this progress, the department is to establish a training center. The Production Control Technical Guidance Unit, which was established in the first stage, was able, it is believed, to achieve certain results in the garment industry; and in the future, as a unit geared not just to the garment industry but to all other industries as well, it will be transferred to the Planning & Coordination Department.

In the Packaging Technology Department, the strategic focus will be shifted from improvement of quality consciousness in the industry to trouble shooting through guidance.

In the Non-metallic Mineral R&D Department, the activity of ceramic raw materials development will be strengthened.

The Planning and Coordination Department will strengthen their activity in public relations and library services, assuming the development of activities of the Center, accumulation of experiences by the Center, and increase in needs of customers. Also, assuming that the target of the guidance provided for production control and quality control will be expanded to include all industries, the Production Control Technical Guidance Unit, which was established in the first stage as part of the Garment Technology Department, will be transferred to the Planning Coordination Department. A unit in charge of market surveys and economic surveys will also be established in this department.

(3) Third stage

The development plan for the third phase should be reviewed after confirming the effects of implementation of the second phase and industrial development at that time.

In the garment industry, as companies increasingly use their own designs and arrange by themselves for their raw materials, customers will increasingly demand certification of product quality based on product testing. To deal with this, a Testing Center will be established in the Garment Industry Technology Department. In the Packaging Technology Department, it will be necessary to deal with the increasing transport of precision equipment, etc. That is, in addition to guidance and testing for consumer packaging technology, which has been the focal point until now, guidance and testing for

transport packaging will be demanded in the future. A Transport Packaging Unit that can deal with this will be established.

With the progress in development of gypsum resources, it will be necessary to add, in the Non-metallic Minerals Resources Department, a research system oriented to the industrial use of gypsum.

4.1.2 Organization and Staffing

The overall organization chart of the Center is given in Figure 4-1 (for organization chart by department and by phase of establishment, see Figures 3-3 through 3-6). Table 4-6 shows the manpower assignment by department. In charge of the entire center will be a Managing Director. The Garment Technology Department and the Planning Coordination Department will be headed by Directors: persons with planning and administrative abilities. The technical departments will each be led by a Chief Researcher: an administrator with technical knowledge and experience.

Researchers and Advisors, while not responsible for managing departments, will be positions that require technical knowledge and experience. Trainee Researchers will be employed to train, from among the Omani, the personnel who will be necessary to operate the center in the future.

(1) Phase 1

In addition to the Managing Director, who will supervise the center, the administrative staff will be constituted as follows. The Planning Coordination Department, which will mainly conduct coordinating activities and industrial and market research activities, will have a Director. The Garment Technology Department, whose organization will be large, will have a Director, and the Packaging Technology Department, which is expected to grow in the future, will have a Chief Researcher. The Administration Unit will not have its own manager; rather, it will be under the direct supervision of the Managing Director, who will also serve as the Chief Researcher of the Non-Metallic Minerals Research Department.

In addition to the two full-time Chief Researchers mentioned above, the technical staff will require an Advisor for the Garment Technology Department's Technical Guidance Unit, and a Researcher for the Non-Metallic Minerals Research Department's Ceramic Raw Materials Research Unit. In future, the Garment Technology Department's Technical Guidance Unit, the Packaging Technology Department, and the Non-metallic Minerals Research Department's Ceramic Raw Materials Research Unit will all have great need of continuous personnel training; accordingly, a Trainee Researcher will be assigned to each,

and successors for the technical staff will be trained as well.

(2) Phase 2

In the second phase, a Training Center will be established in the Garment Technology Department. The Garment Technology Department's Technical Guidance Unit will be transferred to the Planning Coordination Department, creating a three-unit system that will also include a Planning Coordination Unit and an Economic Survey Unit.

The administrative staff will be the same as in the first stage. For the technical staff, a Researcher will be needed in the Planning Coordination Department's Economic Survey Unit.

(3) Phase 3

In the third phase, a Testing Unit will be established in the Garment Technology Department, and a Transport Packaging Unit will be established in the Packaging Technology Department, while the existing staff will be organized to Consumer Packaging Unit.

There will be no changes in the administrative staff, but a researcher will be added to each of the above departments. Also, for research to develop gypsum use, a researcher will be added to the Gypsum Development Unit of the Non-metallic Minerals Research Department. Moreover, for each additional researcher, an additional trainee researcher will be correspondingly assigned.

4.1.3 Facilities and Spaces

Table 4-7 and Figure 4-2 summarize the space that will be necessary in each development phase (the details for each department are shown in Figures 3-8 through 3-14. The equipment plan is given in Tables 3-4 through 3-15). Facilities and spaces are outlined as follows:

(1) First stage

The Garment Technology Department will be composed of office space, which will be equipped with the computers necessary to provide technical guidance for production control, and a Cutting Center.

The Packaging Technology Department will not have testing machines or equipment; it will only have office space. Testing equipment will be installed in the Non-Metallic Minerals Research Department for purposes of researching and developing ceramic materials.

The Planning & Coordination Department will have spaces not only for offices but also for library. In addition, space for the Administration Unit will be required.

(2) Second stage

A Training Center will be established in the Garment Technology Department. The Packaging Technology Department will have equipment for testing the performance of packaging materials. The food tests will be entrusted to DGSM. Machines and equipment will not be added at this stage in the Non-metallic Minerals Research and Development Department, the Planning Coordination Department, or the Administration Unit.

(3) Third stage

The Garment Technology Department will have testing equipment required for end-use testing garments. The Packaging Technology Department will have the testing equipment for transportation packaging.

Equipment for testing and researching gypsum use will be added in the Non-metallic Minerals Research and Development Department, but no machinery or equipment will be added in the Planning Coordination Department or the Administration Unit.

4.1.4 Required Capital for Set-up

Table 4-8 shows the funds necessary for establishment and expansion of the Center. The required funds for establishment in Phase 1 amount to RO. 700,000 (or equivalent to US\$ 1,820,000), and it will be around RO. 520,000 (or US\$ 1,360,000) excluding building costs.

4.2 Management Plan

4.2.1 Revenue

The expected revenue from the services provided includes: 1) fees from contract processing at the Cutting Center of Garment Technology Department, 2) fees from contract testing at Garment Technology Department and Packaging Technology Department, 3) fees from technical guidance, and 4) membership fee and revenue from sales of publications.

The revenue is estimated in Table 4-9 by type of services provided, and assumed fee rates.

The Cutting Center provides services which directly benefit customers, and thus, the fee rates are set at the level where the Cutting Center are able to be operated on a

commercial basis. The relationship between the change in fee rates and expected IRR (internal rate of return) is shown in Figure 4-3. If the fee rates are set at 70% of the prevailing cost level, the IRR will be 0.9% (the IRR will be improved to 6.3% if excluding the building construction costs). The fee rate is assumed at this level (RO. 0.040/pcs). The fee rate for testing is assumed at the same level with that prevailing in Japan. The fee rates for technical guidance is calculated on the basis of direct labor costs required.

4.2.2 Costs/Expenses and Balance

Table 4-10 estimates the costs and expenses. Table 4-11 shows the estimated balance between revenue and costs/expenses. The balance shows the deficit of RO. 168,000 in the first year of operation (excluding depreciation), and the deficit will be decreased to RO. 108,000 in the third year. The amount of deficit is equivalent to 65% and 40% of direct labor costs respectively. The deficit will increase to RO. 203,000 and RO. 187,000, if the revenue and costs/expenses of the Cutting Center are excluded.

4.2.3 System to Improve the Services

It is necessary to continually work, from the following viewpoint, to improve services. This will involve the following.

- 1) Contribution to industrial development
- 2) Establishment of own R&D plan
- 3) Updating the operation style (change of addition of data sources, addition or renewal of equipment, invitation of human resources, etc.)
- 4) Adjustments in keeping with change of the needs of industry
- 5) Decision making on the appropriateness of transferring to the next stage planned, and review of plan in the next stage
- 6) Planning of future expansion besides those in the current plan (see 3.5 in Chapter 3)

The following organizations are recommended to be utilized for the aim of operation improvement:

- 1) Steering Committee (see 3.4 (1), Chapter 3)
- 2) Director/chief Researcher Meeting (see 3.4 (3), Chapter 3)
- 3) Membership System (see 3.4 (4), Chapter 3)

4.3 Implementation Process

Figure 4-4 shows the set-up and preparation process up to commencement of Phase 1

operation.

It is estimated to take 12 months from official approval of the plan to commencement of operation.

In this implementation plan, the Center is assumed to use buildings already available. The most critical time is the time required for recruitment of adequate staff, but the above plan does not take it into account. If the implementation assumes the technical cooperation from abroad, the time required for procedure is also necessary to be included in advance. The training period for the staff of the Cutting Center is another time factor to be considered in formulating the implementing plan.



Table 4-1 Outline of Technical Services Provided by the Center

A. Technology Transfer (Technical Guidance)	
(1) Collection and provision of technical and market information	1) Collection of technical and market information 2) Provision of opportunity for exchange of information
(2) Testing service	
(3) Technical consultancy and guidance service	1) Technical consultancy service 2) Technical guidance service 3) Assistance for product sample development
(4) Provision of facilities and equipment	1) As common service facilities 2) For testing and development work
B. Research and Development	
	1) Organizing joint research and development 2) Implementation of joint research and development 3) Undertaking of own research and development
C. Human Resource Development	

Table 4-2(1) Detail of Services Provided (Garment Technology Department)

Services Provided, and Unit in Charge	Contents
Phase 1:	
(1) Cutting Center	
1) Contract processing of sewing preparation process	<ul style="list-style-type: none"> a) Pattern making Making master patterns on contracts with manufacturers b) Pattern grading Making graded patterns on contracts with manufacturers c) Marker making Making marker sheets on contracts with manufacturers d) Cutting Cutting material cloth of manufacturers to cut parts on contracts with manufacturer
2) Technical guidance	Technical transfer to manufacturers of know-how about CAD/CAM operation which will be accumulated at the Center through operation of Cutting Center.
(2) Technical Guidance Unit	
1) Guidance on production control technology	<ul style="list-style-type: none"> a) Making manuals for production control and quality management Making manuals for field technical guidance on production control and quality management applicable to the operation condition of the garment industry in Oman b) Training of field engineers Giving training to supervisory staff of garment manufacturing factories about production control and quality management based on the above manual through seminars and field instructions c) On-the-spot technical guidance Analyzing field problems and giving instructions on trouble shooting on the spot at the factory, at the request from manufacturers about production control and quality management
2) Collection and provision of technical information	<ul style="list-style-type: none"> a) Collection of sewing machinery information Collecting sewing machinery information, classifying it by use section, performance grade, and cost grade and updating it from time to time. Main information sources include; international sewing machinery exhibitions, manufacturers, academes and business associations. b) Analysis of effect of sewing machinery introduction Analyzing the effect of introducing high performance machinery, particularly in view of productivity improvement, labor saving, quality improvement and economic effect, and providing the industry with the data on those which are expected to be highly effective. c) Provision of information Providing regularly the technical information mentioned above to domestic garment manufacturers.
3) Technical consultation	Technical consultation concerning projects of new factory construction and expansion.

Table 4-2(2) Detail of Services Provided (Garment Technology Department)

Services Provided, and Unit in Charge	Contents
Phase 2:	
In addition to the Items (1) in Phase 1 (Item (2) of Phase 1 is transferred to planning and coordinating division):	
(3) Training Center	
1. Designing & patterning technology unit	
1) Training of dress designing technique	
a) Technique of dress design	Training for nurturing dress designers. Dress designing technique include sketch drawing technique, and coloring technique, as well as selection method of fiber materials and mapping of those.
b) CG design technique	Training of IRC staff about CG designing technique using computer, and extension of it to designers of manufacturers, as development step for application for those who have completed training of basic techniques of dress designing technique.
c) Development method of merchandising and planning	Training of IRC staff about product development, market projection method necessary for production and sales planning, and theory and implementation method of product planning development. Extension of the training to staff of manufacturers.
2) Training of pattern making technology	
a) Basic course of pattern making technique	Training on selection of raw materials, and designing. After that, training on deciding size specifications and pattern making. The course includes training of flat design drawing techniques of light clothes for adult men and women and children. Preparation and issue of curriculum textbook on drawing technique.
b) CAD pattern making technique	Training of operational technique of CAD system for making master patterns, grading, and marker making.
c) Technical course of pattern making technique	Training on pattern making technique for heavy clothes and ladies' wear as the senior course of a) above. Training of development method for basic sloper, silhouette sloper, and design sloper based on three-dimensional cutting method, and further, training of technique to make patterns from them.
3) Technical consultation on designing and patterning technique	
	Consulting service concerning designing and patterning

Table 4-2(3) Detail of Services Provided (Garment Technology Department)

Services Provided, and Unit in Charge	Contents
2. Product development technology unit	
1) Technical guidance of new product development technology	
a) Technique of making patterns for new products	Training of pattern making procedures based on developed designs.
b) Analysis of garment manufacturing method of new products	Training on method of selecting materials, its use, and analyzing the sewing procedures, for parts and accessories for garment manufacturing (drawing it as a process analysis chart).
c) Makeup of new products	Training of the technique of makeup of products by using various garment manufacturing apparatus, based on the process analysis chart. At the same time, training of the method to estimate the required processing time for each process. Further, training of technique to make material processing and sewing easier.
d) Appraisal of new products	Training of evaluation method of grades, quality, profitability of processing of made-up products. Training of the method of improvement and settlement, using the methods of a) through c), in case of trouble.
2) Technical consultation	Consultation service to trouble shooting about product development which occur in daily operation at manufacturers.
3. Garment manufacturing apparatus repairing technology unit	
1) Training of techniques on development of jigs and improvement of garment manufacturing apparatus	
a) Development of jigs for garment manufacturing	Teach types and functions of jigs used for garment manufacturing (such as winding units or feeders), and make training on techniques to make jigs to meet the requirement of special sewing specifications.
b) Improvement of garment manufacturing apparatus	Teaching the knowledge of every kind of M/H apparatus except the main body of garment manufacturing machinery including sewing machines, and the technical know-how of how it interferes with the body equipment. Training of technique to improve performance of garment manufacturing machines through selective introduction of M/H apparatus.
2) Training of garment manufacturing machinery maintenance	
a) Maintenance technique of general-purpose sewing machine	Training on the techniques of overhaul of lock-stitch and over-lock sewing machine and adjustment technique of stitch performance
b) Maintenance technique of special sewing machine	Training of the technique of overhaul and adjustment technique of stitch performance of circle sewing machines such as working buttonholes, every bar tacking sewing and sewing on buttons.
c) Management technique of preventive maintenance	Training on control and management technique such as facility maintenance records and maintenance implementation cycles to implement preventive maintenance of facilities in the factory.
3) Technical consultation	Consultation service to solve problems on machine maintenance which occur in daily production operations.

Table 4-2(4) Detail of Services Provided (Garment Technology Department)

Services Provided, and Unit in Charge	Contents
Phase 3:	
In addition to Items in Phase 2	
(4) Testing Center for End-use Performance of Garments	
1) Test of end-use performance of garments	<ul style="list-style-type: none"> a) General end-use performance tests <ul style="list-style-type: none"> 1. Color fastness <ul style="list-style-type: none"> 1-1 Color fastness to crocking : AATCC crock-meter method 1-2 Color fastness to perspiration 1-3 Color fastness to light : Carbon-arc lamp 1-4 Color fastness to laundering, home and commercial : accelerated 1-5 Color fastness to water 2. Physical Properties <ul style="list-style-type: none"> 2-1 Dimensional change in automatic home laundering of woven or knit fabrics 2-2 Dimensional change in automatic home laundering of garments 2-3 Tear strength of woven fabrics 2-4 Tensile strength of woven fabrics 2-5 Burst strength of knit fabrics b) Special test for consumption performance <ul style="list-style-type: none"> 1. Wrinkle Recovery <ul style="list-style-type: none"> Wrinkle recovery of fabrics: Recovery angle method 2. Abrasion Resistance <ul style="list-style-type: none"> Abrasion resistance of fabrics : Accelerator method 3. Wash and wear properties <ul style="list-style-type: none"> 3-1 Appearance of fabrics in wash and wash items after home laundering 3-2 Smoothness of seams in fabrics after repeated home laundering 3-3 Retention of creases in fabrics after repeated home laundering 4. Water repellence <ul style="list-style-type: none"> Water repellence : Spray test 5. Color Fastness <ul style="list-style-type: none"> Color fastness to dry cleaning : Hot pressing etc. c) Trouble shooting <ul style="list-style-type: none"> 1. Identification of fiber <ul style="list-style-type: none"> 1-1 Staining by Boken, staining Agents 1-2 Testing method for quantitative analysis of fiber mixtures 2. Identification of yarn counts <ul style="list-style-type: none"> Tex system to designate linear density of fiber 3. Identification of twist number <ul style="list-style-type: none"> Testing method using unwisting machine
2) Relevant Services	<ul style="list-style-type: none"> a) Collection and Analysis of overseas quality standard concerning end-use performance of garments b) Improvement of testing capability for promotion of mutual recognition of testing results with overseas testing organizations c) Dissemination of standards, laws and regulations related to end-use performance quality of garments

Table 4-3(1) Detail of Services Provided (Packaging Technology Department)

Services Provided, and Unit in Charge	Contents
Phase 1:	
(1) Collection and provision of information	
1) Collection and analysis of information	<p>Collection and analysis of information concerning food packaging technology.</p>
	<p>a) Technical information about packaging technology, packaging materials and packaging machinery.</p>
	<p>1. Information about highly productive packaging technology.</p>
	<p>2. Technical information about raw materials and quality of packaging material.</p>
	<p>3. Information about function and characteristics of packaging materials.</p>
	<p>4. Technical evaluation results of various packaging materials, packaging types, and packaging technology.</p>
	<p>5. Information about highly productive packaging machinery and packaging system.</p>
	<p>b) Information about trouble shooting in packaging.</p>
	<p>1. Information about trouble shooting of packaging materials on maintaining quality of products</p>
	<p>2. Information about trouble shooting in packaging work (manual work and machine work)</p>
	<p>3. Information about trouble shooting in defective packaging</p>
2) Provision of information	<p>Provision of information through seminars, public relations magazines, and consultation desks</p>
(2) Technical consultation and guidance	
1) Dissemination activities of knowledge on improvement of packaging quality (including seminars)	
2) Technical consultation and guidance	
a) Technical consultation on request	
b) Scheduled visits for technical guidance at the request from manufacturers	
(3) Contract testing	
- Food tests	<p>Acceptance of test mentioned below concerning raw materials, semi-processed articles and products, entrusted to DGSM, and evaluation of the testing results</p>
	<p>a) Chemical analysis (water content, protein, lipid, fibers, amino acid, salt, etc.)</p>
	<p>b) Physical tests (stickiness, color, specific gravity, etc.)</p>
	<p>c) Microorganism tests (living bacteria, colon, bacillus, etc.)</p>

Table 4-3(2) Detail of Services Provided (Packaging Technology Department)

Services Provided, and Unit in Charge	Contents
Phase 2:	
(1) Consumer packaging technology unit	
1) Research and development	Self or consigned research about technical matters in consumer packaging
	a) Concerning material quality
	(Used raw materials, transition of composition materials, ranges and stability of quality characteristics)
	b) Concerning processed quality
	(Printing, processing including laminating, insect contamination, foreign material adhesion, and microorganisms)
2) Collection and provision of information	Same as Phase 1(1)
3) Dissemination of knowledge and technique useful for improvement of consumer packaging technology	(seminars, research meetings, etc.)
4) Technical consultation and guidance	
	a) Technical consultation on request
	b) Scheduled visits for technical guidance at the request of manufacturers
5) Contract testing	Contract testing of performance of packaging materials, evaluation and technical guidance based on the testing results
	a) Performance for maintaining quality of product contained (barrier characteristic, mechanical strength characteristic, counter-content characteristic)
	b) Performance in using packing machinery (heat sealing strength, electrification, and slip characteristic)
	c) Performance during the processes of processing, storage, distribution and consumption (laminated layer peel strength, and others)

Table 4-3(3) Detail of Services Provided (Packaging Technology Department)

Services Provided, and Unit In Charge	Contents
Phase 3:	
In addition to Items in (1) in Phase 2	
(2) Transportation packaging technology unit	
1) Research and development	<p>Self-initiated or contract research on technical matters of transportation packaging.</p> <p>a) For the matters related to packaging design</p> <ol style="list-style-type: none"> 1. Study on transportation environment of the packaged products 2. Research to meet the requirement in view of improvement in the area of physical distribution 3. Research to meet the requirement for cost optimization <p>b) For the matters related to packaging materials supply</p> <ol style="list-style-type: none"> 1. Stabilizing quality of packaging materials supplied 2. Research to meet the required performance of packaging in marketing 3. Research to meet the performance of packaging in diversification of distribution and consumption patterns <p>c) For the matters related to packaging works</p> <ol style="list-style-type: none"> 1. Appropriate packaging work technique 2. Mechanization of packaging processes <p>d) To meet the requirement from environmental consideration</p>
2) Collection and provision of information	Same as Phase 1(1)
3) Dissemination of knowledge and technique useful for improvement of transportation packaging (seminars, research meetings, etc.)	Same as Phase 1(1)
4) Technical consultation and guidance	<p>a) Consultation on request about technical problems</p> <p>b) Scheduled visits for technical guidance at the request of manufacturers</p>
5) Contract testing	Contract testing related to transportation packaging, evaluation and technical guidance based on the test result

Table 4-4 Detail of Services Provided (Non-metal Mineral Research Department)

Services Provided, and Unit in Charge	Contents
Phase 1:	
(1) Ceramics Research Unit	
1) Development research of ceramic raw materials	a) Analysis and evaluation of locally produced clay as raw materials of ceramics production b) Identification of prospective clay deposits based on information provided by MPM c) Analysis and evaluation of Kaolin resource and research on its use d) Identification of other raw materials for ceramics such as feldspar and pottery stone based on information provided by MPM
2) Technical consultation and guidance	a) Provision of product ideas for existing pottery manufacturers b) Technical guidance on manufacturing of pottery
3) Contract tests	a) Contract tests on ceramic raw materials including X-ray analysis, chemical analysis, and mineral composition analysis, entrusting to MPM laboratory with final evaluation by the Center based on the analysis report. b) Contract tests of ceramics including firing coloration, thermal expansion and refractoriness, etc., and evaluation and technical guidance based on the tests.
Phase 2:	
(1) Ceramics Research Unit (Same as Phase 1)	
Phase 3:	
In addition to Items in Phase 2,	
(2) Gypsum development unit	
1) Research on use and development of gypsum	Research on specifications from the viewpoint of use of gypsum a) Tests of general chemical and physical specifications, entrusting to MPM laboratory, b) Firing tests and evaluation c) Publication of the result through public relations magazines, etc.
2) Technical guidance on manufacturing of gypsum and lime stone products (Focusing on civil engineering and building materials)	

Table 4-5 Detail of Services Provided (Research Planning Coordination Department)

Services Provided, and Unit in Charge	Contents
Phase 1:	
(1) Establishing annual plan of activities of the Center	
1) Establishing the integrated plan compiling annual activity plans by department	
2) Budget planning	
3) Compiling the performance of activities of each department	
(2) Technical consultation	Receiving inquiries and requests for technical consultation for the technological fields which are not covered by the other departments of the Center, and coordination for entrusting these technical instruction to external organizations
(3) Preparation for establishing a information room	Preparation for establishing a information center which will accumulate all the information provided by other departments for easy reference
(4) Public relations	Periodical publication of public relations magazines
(5) Secretariat for operation of membership system	Promotion activities for the membership system, distribution of public relations magazines, and activity guidebook of the center to the members.
Phase 2 & 3:	
In addition to activities of Phase 1	
(6) Establishment and management of a library and a information center	
(7) Access and reference service to on-line information services	

Table 4-6 Summary of Manpower Plan

	Phase 1					Phase 2					Phase 3							
	Management & Administration	Planning & Coordination Dept.	Garment Technology Dept.	Packaging Tech Dept.	Non-metal Minerals R&D Dept.	Total	Management & Administration	Planning & Coordination Dept.	Garment Technology Dept.	Packaging Tech Dept.	Non-metal Minerals R&D Dept.	Total	Management & Administration	Planning & Coordination Dept.	Garment Technology Dept.	Packaging Tech Dept.	Non-metal Minerals R&D Dept.	Total
Managing Director	1					1	1				1	1						1
Director		1	1			2		1			2		1		1			2
Chief Researcher				1		1			1		1				1			1
Researcher/ Advisor/ Supervisor			1		1	2		1	0	1	4			2	1		2	7
Assistant Researcher/ Officer		1				1					1			1				1
Trainee Researcher			1	1	1	3		2	1	1	4		2	3	2		2	9
Secretary	2					2	2				3		2	1				3
Administration Staff	2					2	2				2		2					2
Engineering Service						0	2				2		2					2
Instructor						0		5			5				5			5
Operator			10			10		16			16			16				16
Total	5	2	13	2	2	24	7	23	2	2	41	7	7	27	4	4	49	

Table4-7 Summary of Space Plan for Industrial Research Center

(Unit: m²)

Department	Phase 1	Phase 2	Phase 3	Remarks
(1) Operation space				
Garment Tech. Dept.				
Cutting Center	1,000	1,600	1,600	Case 2
Training Center		200	200	
Others	100	100	100	
Total operation space	1,100	1,900	1,900	
(2) Laboratories				
Garment Tech. Dept.				
End-use Testing Center			300	
Packaging Tech. Dept.				
Packaging materials test labo		75	75	
Transportation packaging labo			150	
Non-metal Minerals R&D Dept.				
Ceramic raw material research	50	50	50	
Gypsum research			75	
Total labo space	50	125	650	
(3) Offices and other spaces				
Offices	80	150	175	3.35m ² /staff
Library		55	55	8% of (2) in Phase 3
Workshop		20	20	3% of (2) in Phase 3
Others	70	190	485	35% of (2) & (3)
Total office and other spaces	150	415	735	
Total	1,300	2,440	3,285	

Table 4-8 Required Capital for Establishment and Expansion

	In Rial Omani			In US dollars		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
(1) Building construction costs						
1) Operation spaces (*1)	121,000	88,000	0	318,400	231,600	0
2) Laboratories (*2)	15,000	22,500	157,500	39,500	59,200	414,500
3) Offices & other spaces (*3)	40,000	53,000	64,000	105,300	139,500	168,400
Total	176,000	163,500	221,500	463,200	430,300	582,900
(2) Labo facilities & equipment						
1) Garment Technology Deprt.						
a) Cutting Center						
- Automated cutting spreading M/C	301,000	296,000	0	792,100	778,900	0
- CAD system	65,000	0	0	171,100	0	0
b) Technical Guidance Unit						
- PC production management system	14,000	0	0	36,800	0	0
- PC filing system	10,500	0	0	27,600	0	0
c) Training Center						
- Fashion design system	0	32,500	0	0	85,500	0
- M/C for sample development	0	31,000	0	0	81,600	0
- M/C for mechanization	0	58,500	0	0	153,900	0
d) Garment end-use testing center	0	0	337,000	0	0	886,800
2) Food & Packaging Technology Dept.						
a) Packaging materials test labo	0	187,000	0	0	492,100	0
b) Transportation packaging labo	0	0	626,500	0	0	1,648,700
3) Non-metal Mineral Research Dept.						
a) Gypsum development research labo	0	0	15,000	0	0	39,500
b) Ceramic raw material research labo	82,000	0	0	215,800	0	0
Total	472,500	605,000	978,500	1,243,400	1,592,000	2,575,000
(3) Office equipment, etc. (*4)						
Total	44,000	69,000	14,000	115,800	181,600	36,800
Total	692,500	837,500	1,214,000	1,822,400	2,203,900	3,194,700

- Notes:
- 1) RO.110/m²
 - 2) RO.300/m²
 - 3) RO.200/m²
 - 4) RO.550/m² for offices & library

Table 4-9 Projected Revenue from IRC's Services

		Phase 1					Phase 2	Phase 3
		1	2	3	4	5		
Garment Tech Dept.								
Contract service for sewing preparation								
Cut parts	'000 Pcs.	2,808.0	3,369.6	3,744.0	3,744.0	3,744.0	7,488	7,488
	Revenue	112,300	134,800	149,800	149,800	149,800	299,500	299,500
Graded pattern	No. of item	374	374	374	374	374	374	374
	Revenue	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Marker sheet	No. of marker	3,432	3,432	3,432	3,432	3,432	0	0
	Revenue	6,500	6,500	6,500	6,500	6,500	0	0
sub-total		121,600	144,100	159,100	159,100	159,100	302,300	302,300
Technical guidance	Man-hour utilization	0.50	0.75	0.75	0.25	0.25	0	0
	Revenue	6,800	10,100	10,100	3,400	3,400	0	0
Contract research	No. of contract	0	1	2	2	4	0	0
	Revenue	0	1,200	2,400	2,400	4,800	0	0
Contract testing	No. of tests	0	0	0	0	0	0	18
	Revenue	0	0	0	0	0	0	1,800
Total Revenue		128,400	155,400	171,600	164,900	167,300	302,300	304,100
Food & Packaging Tech Dept.								
Technical guidance	Man-hour utilization	0.25	0.5	0.5	0.5	0.5	1	1.5
	Revenue	3,400	6,800	6,800	6,800	6,800	13,500	20,300
Contract research	No. of contract	0	2	2	4	4	8	12
	Revenue	0	2,400	2,400	4,800	4,800	9,600	14,400
Contract testing	No. of contract	0	2	4	6	8	16	24
	Revenue	0	200	400	600	800	1,600	2,400
Total revenue		3,400	9,400	9,600	12,200	12,400	24,700	37,100
Non-metal mineral R&D Dept.								
Contract research	No. of contract	0	2	2	4	4	4	4
	Revenue	0	2,400	2,400	4,800	4,800	4,800	4,800
Contract testing	No. of tests	0	4	8	8	8	8	12
	Revenue	0	400	800	800	800	800	1,200
Total revenue		0	2,800	3,200	5,600	5,600	5,600	6,000
Research Planning & Coordination Dept.								
Technical guidance	Man-hour utilization							
	Revenue	0	0	0	0	0	0	0
Supporting membership fee	No. of member	40	80	160	186	186	186	186
	Revenue	2,400	4,800	9,600	11,200	11,200	11,200	11,200
	Revenue	2,400	4,800	9,600	11,200	11,200	11,200	11,200
Total Revenue		134,200	172,400	194,000	193,900	196,500	343,800	358,400

Table 4-10 Financial Projection for the IRC (Costs & Expenses)

Year of operation:	Phase 1					Phase 2	Phase 3
	1	2	3	4	5		
Direct labor cost							
Managing Director	37,500	37,500	37,500	37,500	37,500	37,500	37,500
Director	60,000	60,000	60,000	60,000	60,000	60,000	60,000
Chief Researcher	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Researcher/ Advisor	45,000	45,000	45,000	45,000	45,000	112,500	180,000
Asst. Researcher	15,000	15,000	15,000	15,000	15,000	60,000	45,000
Trainee Researcher	27,000	27,000	27,000	27,000	27,000	45,000	99,000
Secretary	7,500	7,500	7,500	7,500	7,500	11,300	11,300
Adminl. Staff	9,000	9,000	9,000	9,000	9,000	9,000	9,000
Engineering Service	0	0	0	0	0	9,000	9,000
Instructor	0	0	0	0	0	22,500	22,500
Operator	30,000	30,000	30,000	30,000	30,000	48,000	48,000
Total	261,000	261,000	261,000	261,000	261,000	444,800	551,300
Maintenance costs							
Utility costs							
- Electricity	22,800	22,800	22,800	22,800	22,800	42,700	57,500
- Water	1,100	1,100	1,100	1,100	1,100	2,100	2,500
- Communication	2,600	2,600	2,600	2,600	2,600	5,100	5,900
Spareparts & chemicals	4,700	4,700	4,700	4,700	4,700	10,800	20,600
Office supplies	800	800	800	800	800	1,600	1,900
Travel expenses	2,300	2,300	2,300	2,300	2,300	4,400	5,100
Transportation expenses	700	700	700	700	700	1,400	1,600
Other costs	3,500	3,500	3,500	3,500	3,500	6,800	9,500
Other operational costs	38,500	38,500	38,500	38,500	38,500	74,900	104,600
Operation Costs Total	302,500	302,500	302,500	302,500	302,500	526,700	668,900
Building	25,000	21,400	18,400	15,800	13,500	17,100	23,200
Labo facilities & equipment	97,300	77,300	61,400	48,700	38,700	78,600	127,100
Office equipment, etc.	9,100	7,200	5,700	4,500	3,600	9,000	1,800
Depreciation	131,400	105,900	85,500	69,000	55,800	104,700	152,100
Total	433,900	408,400	388,000	371,500	358,300	631,400	821,000

Table 4-11 Financial Projection for IRC (Total)

Year of operation:	Phase 1					Phase 2	Phase 3
	1	2	3	4	5		
Technical guidance							
- Man-hour utilization (% of available m/h)							
- Revenue (RO.)	10,200	16,900	16,900	10,200	10,200	13,500	20,300
Contract research							
- No. of contract							
- Revenue (RO.)	0	6,000	7,200	12,000	14,400	14,400	19,200
Contract testing							
- No. of tests							
- Revenue (RO.)	0	600	1,200	1,400	1,600	2,400	5,400
Others							
- Revenue (RO.)	124,000	148,900	168,700	170,300	170,300	313,500	313,500
Revenue	134,200	172,400	194,000	193,900	196,500	343,800	358,400
Managing Director	37,500	37,500	37,500	37,500	37,500	37,500	37,500
Director/ Chief Researcher	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Researcher/ Advisor	45,000	45,000	45,000	45,000	45,000	112,500	180,000
Asst. Researcher	15,000	15,000	15,000	15,000	15,000	60,000	45,000
Trainee Researcher	27,000	27,000	27,000	27,000	27,000	45,000	99,000
Secretary	7,500	7,500	7,500	7,500	7,500	11,300	11,300
Admini. Staff	9,000	9,000	9,000	9,000	9,000	9,000	9,000
Engineering Service	0	0	0	0	0	9,000	9,000
Instructor	0	0	0	0	0	22,500	22,500
Operator	30,000	30,000	30,000	30,000	30,000	48,000	48,000
Direct labor costs	261,000	261,000	261,000	261,000	261,000	444,800	551,300
Maintenance costs	3,000	3,000	3,000	3,000	3,000	7,000	13,000
Utility costs							
- Electricity	22,800	22,800	22,800	22,800	22,800	42,700	57,500
- Water	1,100	1,100	1,100	1,100	1,100	2,100	2,500
- Communication	2,600	2,600	2,600	2,600	2,600	5,100	5,900
Spare parts & chemicals	4,700	4,700	4,700	4,700	4,700	10,800	20,600
Office supplies	800	800	800	800	800	1,600	1,900
Travel expenses	2,300	2,300	2,300	2,300	2,300	4,400	5,100
Transportation expenses	700	700	700	700	700	1,400	1,600
Other costs	3,500	3,500	3,500	3,500	3,500	6,800	9,500
Other operation costs	38,500	38,600	38,500	38,500	38,500	74,900	104,600
Total Costs & Expenses	302,500	302,500	302,500	302,500	302,500	526,700	668,900
Balance	-168,300	-130,100	-108,500	-108,600	-106,000	-182,900	-310,500
Building	25,000	21,400	18,400	15,800	13,500	17,100	23,200
Labo facilities & equipment	97,300	77,300	61,400	48,700	38,700	78,600	127,100
Office equipment, etc.	9,100	7,200	5,700	4,500	3,600	9,000	1,800
Depreciation total	131,400	105,900	85,500	69,000	55,800	104,700	152,100
Balance after depreciation	-299,700	-235,000	-194,000	-177,600	-161,800	-287,600	-462,600

Figure 4-1 Organization and Manpower Plan (Summary)

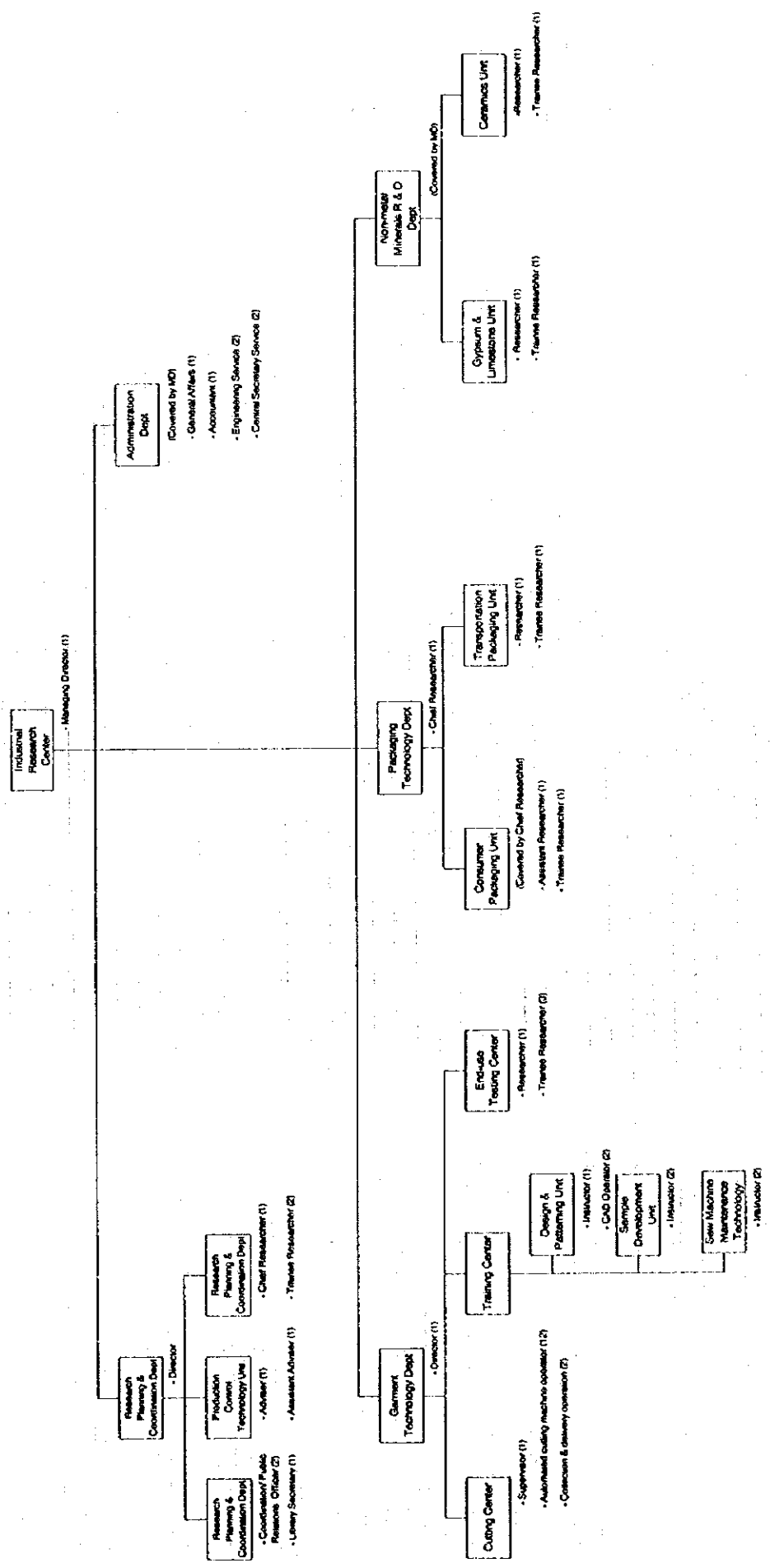
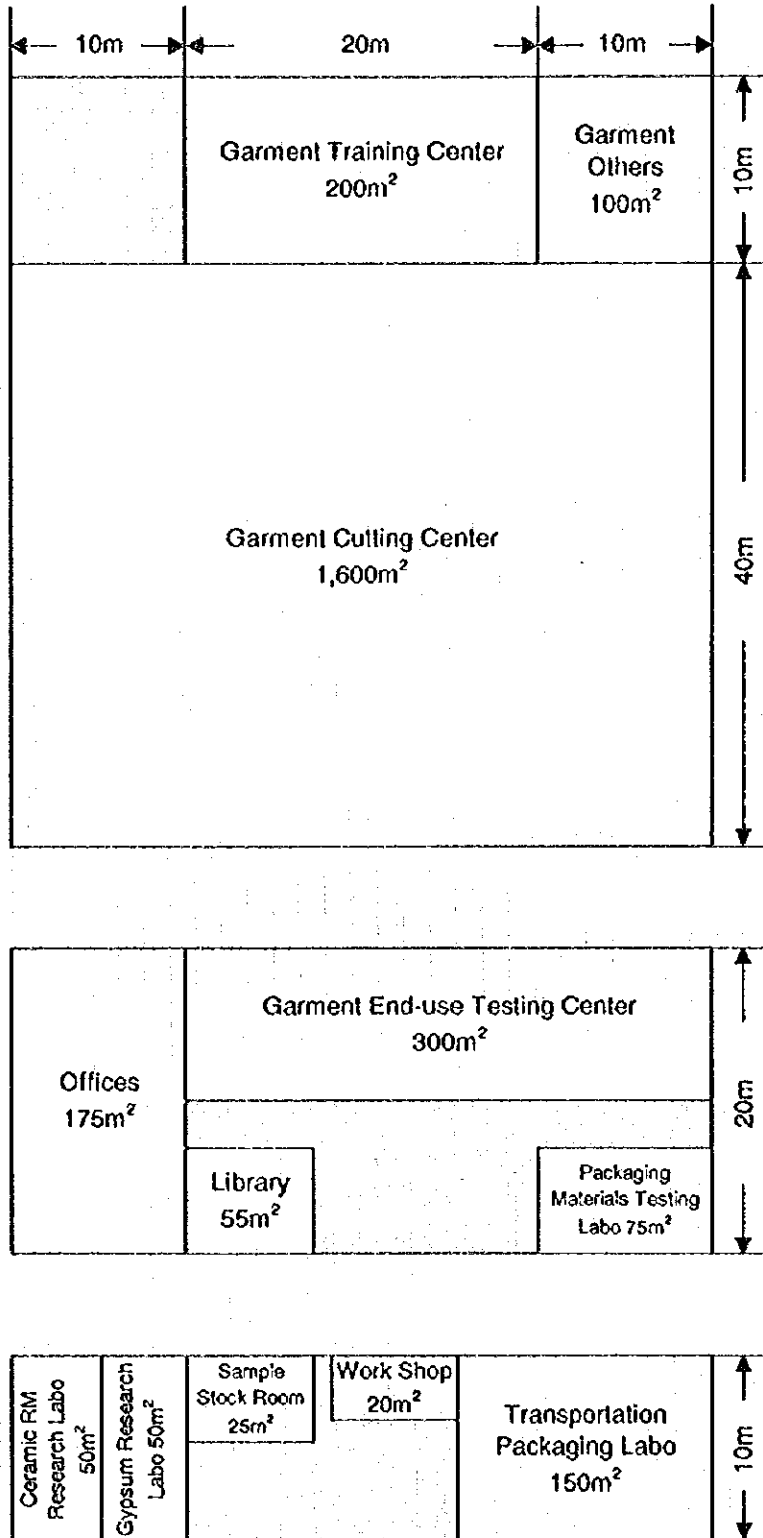


Figure 4-2 Space Plan for Industrial Research Center



Note : Other Spaces 485m²

Figure 4-3 Change In IRR of Cutting Center with Changes In Fee Rates

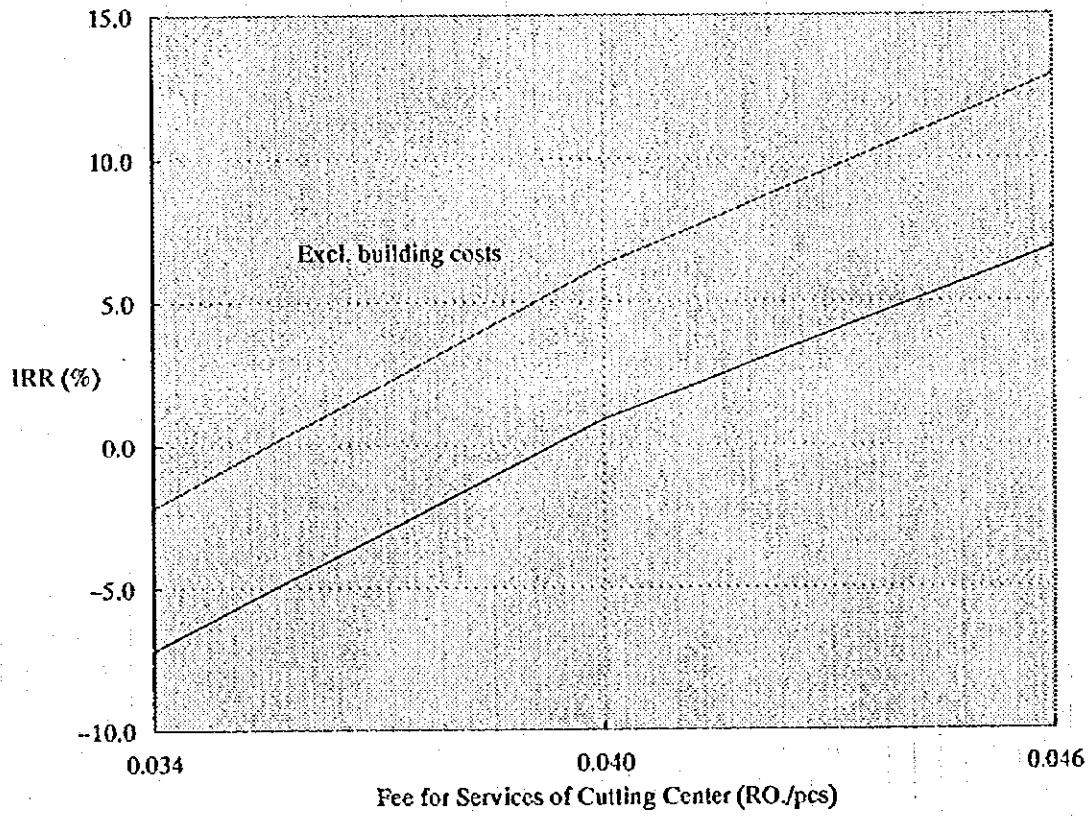
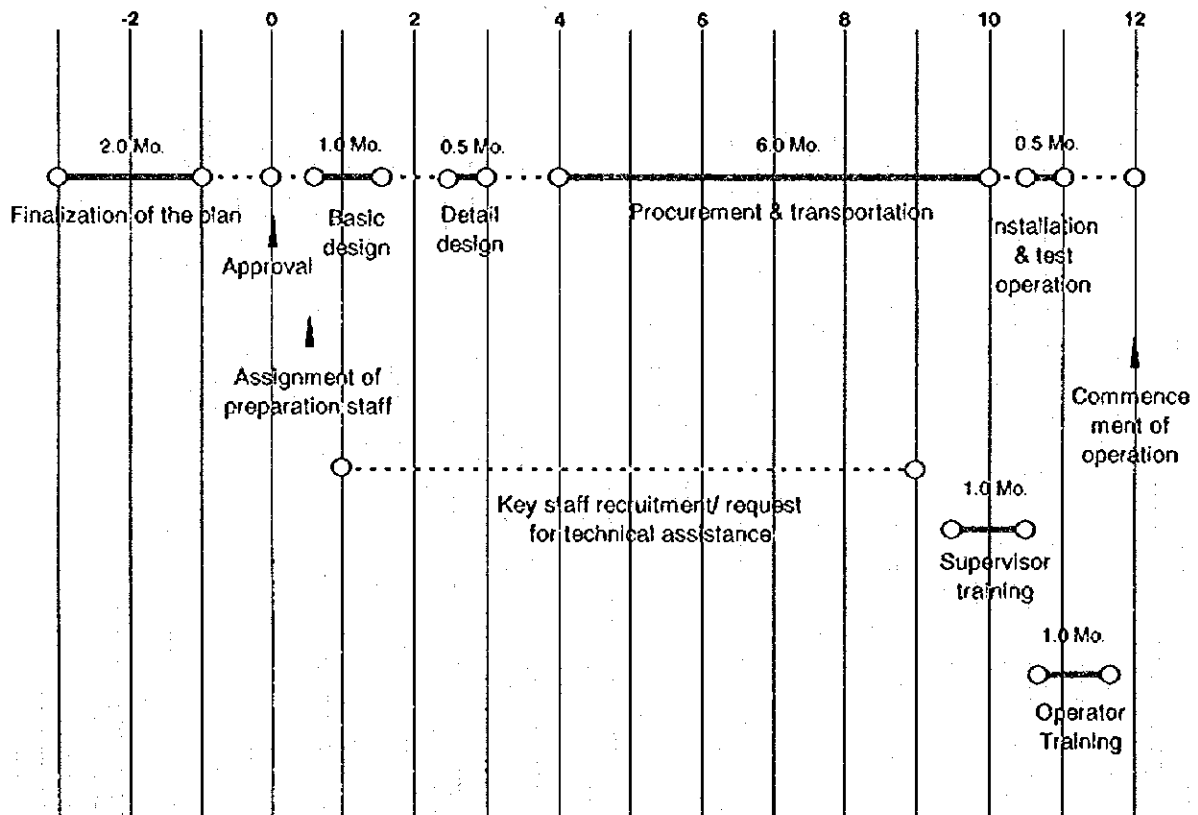


Figure 4-4 Implementation Process for Establishment of the Center



Annex 1 Overview of Economic Development and Industrial Development Plan In Oman

1 Economic Development Plan and Performance

1.1 The First to Fourth Economic Development Plan

Since 1975, the Sultanate of Oman has made their efforts for the economic development in line with the National Economic Development Plans.

The First Five-Year Development Plan was launched in 1975 when the nation experienced a momentum for growth during the oil boom. This plan was a preliminary step towards its entry into new phases of development, which directed primarily at (a) completing the infrastructure, (b) increasing the absorptive capacity of the economy, and (c) initiating policies of support and encouragement to the private sector with a view to increasing competition and completing the components of the free market economy.

The Second Five-Year Development Plan was started in 1981 under favorable economic conditions associated with continuing increase in oil revenues. Under such favorable economic conditions, the Plan called for (a) consolidation of the income of SGRF¹, (b) acceleration of economic development, (c) realization of a capital formation level reaching one quarter of GDP and, (d) stimulation of the private sector to increase its participation in economic and social activities through direct and indirect sets of policies. Specific projects were implemented focusing on the completion of a network of infrastructure and extending it to different areas of the country, giving priority to some regions that require special attention and concentrated effort, and paving the way for the development of natural water resources.

The Third Five-Year Development Plan was conceived under unfavorable circumstances such as significant reduction in oil prices, and directed at maintaining a suitable standard of economic activity in the country; continuing the provision of basic services by the government to the citizens like education, health and social assistance, while, on the other hand, conserving the economic and financial balance of the country. It called for taking specific policies and measures that will reduce government expenditure, amending priorities in the Plan for investment projects, while financing major part of the deficit or imbalance between government revenue and expenditure, through withdrawals

¹ The State General Reserve Fund (SGRF) was established in 1980, which reserved 15% of net oil revenue to complement any other government revenue surplus.

from SGRF amounting to RO.1,234 million by the end of 1989.

The Fourth Five-Year Plan started in 1991 with the following basic policy:

- 1) Achieve GDP growth of more than 5% per annum in real terms, on the average.
- 2) Pursue the policy of diversification of national income; reduce dependence on oil; link the oil production ceiling with technical capacity; work towards extending the expected life of oil reserves as much as possible; continue to exert efforts to change the structure of the Omani economy by placing emphasis on investment in other non-oil income producing sectors, particularly agriculture, fisheries, manufacturing and tourism, as well as the services sector in order to increase their contribution to GDP, and to widen the production base.
- 3) Ensure regional development by directing investments to the various regions, especially outside the region of Muscat.
- 4) Pay regard to developing human resources in order to raise the level of participation of national workers in the various economic and social activities. Achieve a balance between the targeted rates of economic growth and the needs of the work force on the one hand, and the output of the educational and training system on the other.
- 5) Support the capabilities of the various sectors and activities of the national economy (government and private) to provide work opportunities in all avenues wherein the national work force may be used, so that it will result in raising the level of participation of national labor force while realizing the aims of Omanization.
- 6) Achieve a balance between total public expenditure and the government revenues available, and place a maximum limit on the annual deficit permissible. At the same time work towards developing non-oil revenues so that its level of contribution to overall revenues is not less than 20% during the next two Five-Year Development Plans.
- 7) Emphasize the adoption of an economic system, based on free market economy which will ensure fair competition and raise efficiency; by correcting any distortions in the economic structure that will strike the balance between revenue and expenditure or the balance of current and commercial operations and; by promoting the role of private sector and encouraging its contribution to the various areas of economic activity.
- 8) Continue the necessary research, surveys and studies as the best means of developing natural water resources and optimizing their uses.
- 9) Determine the balance of State debt so that it does not exceed allowable limits, either in its total amount or the costs of servicing the debt itself.

1.2 Performance of Economic Development

1.2.1 Economic Growth

The Oman's economy has substantially expanded registering a steady growth over the last two decades since the First Five-Year Development Plan was launched (Table A1-1). Nominal GDP has grown at 9.9% per annum on the average for 19 years from 1975 through 1994. Accordingly, GDP per capita increased more than 2.6 times from RO.780 (or US\$2,258) in 1975 to RO.2,931 (or US\$7,623) in 1994. The real growth of GDP in 1987 constant price recorded 7.7% per annum in average for 16 years from 1978 to 1994.

1.2.2 Structural Change of GDP

In the 1970's, the Oman's economy depends heavily on oil. Since the First Five-Year Development Plan, the Government's long-term economic development policy placed emphasis on diversification of the economic structure, calling for new sources of national income apart from the revenues on oil, with a view of replacing the latter in the future through enhanced proportion of investments on income generating sources in the non-oil sectors, especially in the areas of industry, mining, agriculture and fisheries. Tables A1-2 and A1-3 show the growth trend and change in percentage share of GDP by sector. In 1975, the oil sector contributed by about 67.2% to the nominal GDP, but its contribution decreased to 36.6% by 1994.

The non-oil sectors broadly comprise the non-oil industrial sector and service sector. The non-oil industrial sector includes non-oil mining, agriculture, fisheries, manufacturing, public utilities (electricity and water), and building and construction. The service sector consists of the government services and the private services which in turn include wholesale, retail trade, restaurants, hotels, transport, storage and distribution, financing, insurance, real estate, business services, and community and personal services.

This resulted in an increase in the relative share of the non-oil industrial sector from 13.1% in 1975 to 14.6% in 1994, while the share of the service sector increased from 19.7% to 49.3% during that period.

In the middle of 1970's, the largest contributing sectors in the non-oil industry were the building and construction sector followed by agriculture and fisheries, accounting for 9.8% and 2.7% of the nominal GDP respectively. The growth of these sectors, however,

remained at 4.9% and 11.1% per annum in average respectively over the last 19 years from 1975 to 1994, declining their share in the 1994 GDP down to 4.0% and 3.3% respectively.

Substantial growth has been achieved by the manufacturing industry, and the electricity and water sector at an average annual rate of 28.4%, and 19.7% respectively in nominal terms in the period from 1975 to 1994, followed by the mining sector. For the last three years, the manufacturing industry sector as well as building and construction sector continued to grow steadily, while the growth of the mining, agriculture and fisheries, and electricity and water sectors stagnated.

The manufacturing, mining as well as fisheries industries are important sectors in accelerating diversification of the economy, particularly in the development of non-oil income generating industries, since agricultural production appears to hardly attain substantial growth in the future. Contributions of the manufacturing industry and mining, however, are still small despite substantial growth achieved in the last 19 years. Diversification of the economy through intensive development of these sectors would be essential for sustaining steady growth of the economy as intended in the Economic Development Plan.

1.2.3 Domestic Savings and Capital Formation

Relatively high ratio of the domestic savings was attained at about 46% of GDP during the First Five-Year Plan period, but the domestic saving ratio tended to decrease in the subsequent periods; about 43% of GDP during the Second Five-Year Plan period, 41% during the Third Five-Year Plan period, and 25 - 27% in the last four years of 1991 to 1994 (Tables A1-4 and A1-5).

The gross capital formation was also relatively high at about 27% of GDP during the First and Second Five-Year Plans period, but it declined to about 18% of GDP during the Third Five-Year Plan period and further dropped to about 17 - 18% in the last four years.

Majority of the capital formation was contributed by the public sector, accounting for an average of about 70% of the Gross Capital Formation (GCF) over 15 years (1976 - 1990) in the First to Third Five-Year Plans period, and 64% in the last four years. Large portion of the public capital formation was realized with public investment for the development of infrastructure, followed by investment for oil and gas development. The private capital formation, on the other hand, was largely realized with investment in oil

development and housing. The capital formation in the manufacturing industry was only 8.7% of the private sector capital formation and 1.6% of the public sector capital formation, thus accounting for only 4.1% of the total GCF during the period of 1976 - 1994 (Tables A1-6).

This trend indicates that investments by both public and private sectors have been dominantly appropriated for the development of infrastructure and housing, as well as oil and gas development, while investments in the manufacturing industry as well as the mining industry have remained in a comparatively small portion. It is obvious that the growth of non-oil industry requires the enhancement of investments into the manufacturing and non-oil mining sectors as indicated in the economic development policy.

1.2.4 External Trade and Balance of Payments

Oman recorded a visible trade surplus in the external trade every year (Table A1-7), although fluctuating from year to year depending on oil export earnings (Table A1-8).

The overwhelming majority of Oman's exports is based on oil. The dominance of the oil exports led to instability in the total exports, as it was affected by any turbulence in the international oil market. Although the non-oil exports have been gradually increasing in the last five years, oil exports still account for around 76% of the total exports in 1994.

The non-oil exports increased by 17.3 times in 1990 and 36.3 times in 1994 as compared to 1980 (Table A1-9). The imports continued to increase by 9.9% in average annually over the last four years (Table A1-10). About one-third of the current imports is comprised of food and consumer goods, and the remaining two-third is comprised of machinery and plant equipment, raw materials and intermediates for industrial uses, and transport equipment. It is likely that the imports will continue to increase along with increasing demands for food and consumer goods as well as capital goods. On the other hand, it appears difficult to increase oil export earnings because of a limited crude oil production and downward trends in international oil prices. Thus, the trade surplus will narrow unless non-oil exports increase to meet surging imports. In this context, the development of export-oriented manufacturing industry should be of more importance.

Offsetting the trade surplus is a sizable net outflow on services and private transfers which has left Oman with deficits except in 1990 (Table A1-11). Outward remittances by

the large number of expatriate workers in the country likewise contributed to this phenomenon.

1.2.5 Employment

Oman's population is comparatively small. According to the first census conducted in late 1993, the population is 1.48 million of Omani nationals out of a total population of 2.02 million which includes non-Omani residents. The growth rate of the resident national population is estimated as 3.5% per annum in average. If these trends continue, the population will double in the next 20 years. Out of the total Omani population about 50% are under 15 years of age, and about 20% are in the age of 15 to 30 years. This structure implies that the young generation of Omani working force will substantially increase in the next 10 years.

In the Fourth Five-Year Plan, paying regard to the importance of employment problem on Omani people, the Government adopted the policy that pursues the creation of employment opportunity for the national workers and the realization of Omanization. However, the ratio of Omani nationals in employment is still low. Table A1-12 shows the estimate of Omani and expatriate labor force from 1975 to 1994. The economic growth led to an increase in labor demand in Oman. The total number of labor force increased from 209,000 in 1975 to 670,000 in 1994. However, this was largely attributed by the demand for expatriate labor more than Omani labor. In 1994 the employed number of Omani labor increased to 240,000, as many as 1.8 times compared to 1975, but the percentage of Omani labor in total employed labor in turn declined to 35.8% in contrast to 64.6% recorded in 1975.

1.2.6 Public Finance

Table A1-13 shows the government revenue and expenditure. The main sources of revenues are oil and gas, which accounted for more than 83% of the total revenue every year up to 1992. Although the percentage of revenue from oil and gas in the government revenue decreased in the last two years, it still accounts for about 79% in 1994. The government expenditure exceeded over revenues annually since 1982, except in 1990. Deficits were financed through foreign grants and foreign loan borrowings, as well as withdrawals from the State General Reserve Fund (SGRF).

1.3 Vision for Oman's Economy 2020

Although the Fifth Five-Year Plan, which is to start in 1996, has been approved in principle, the contents of the Plan has not been published yet. On the other hand, the Government announced "Vision for Oman's Economy", which indicates the basic direction of long-term economic development towards the year 2020. This Vision targets to double the gross national income by 2020 while maintaining the monetary value of Oman Rial, so that Omani per capita income can be maintained at least at the 1994 level of RO. 2,093 (or US\$ 5,440) in real terms, and indicates the guideline for the macroeconomic policy for achieving this target, as follows:

- 1) Sustainable development based on a stable macroeconomic framework
- 2) Establishment of diversified, dynamic and globalized economic structure
- 3) Advancement of human resource development
- 4) Fostering of efficient and competitive private sector

It emphasizes the importance of the following principles in the development plans.

1) Reduction of dependence on oil

Since the source of government revenue is still heavily dependent on oil, despite relative decline in the contribution of oil sector to GDP:

- a) Reduce dependence on oil revenues by widening the economic infrastructure and diversifying sources of income.
- b) Develop mechanisms and instruments by which precautions may be taken against fluctuations in oil prices to cushion their shocks.

2) Conservation and efficient utilization of natural resources

More attention will be paid to the conservation of natural resources. In this context emphasis will be placed on the importance of developing potentialities, taking into consideration the preservation and efficient use of natural resources; the balance between area and population in a manner which is appropriate to the regional distribution; and the availability of natural resource with due regard to the realization of higher rates of self-sufficiency in basic products and the preservation of non-renewable resources.

3) Control on increasing current expenditure by the government

Emphasis will be placed on contemplating suitable means by which citizens can

incur part of the expenses on certain services, as government commits itself in providing basic services in gratis to the citizenry. Further, the level of public expenditure will be maintained within appropriate limits as long as increase in government revenues from various sources permits it, without necessarily resorting to large withdrawals of reserves, or dependence on excessive borrowing.

To achieve the foregoing development goal, the economic development policy calls for increased contribution to GDP of the non-oil income generating sectors, particularly agriculture, fisheries, manufacturing, tourism and service sectors through increased investment as well as through the expansion of industrial infrastructure, while extending the recoverable life of oil reserves, thereby pursuing the restructure of the economy. Industrial development will play an important role in the generation of national income from non-oil sources as it increases non-oil domestic production, thereby contributing towards the diversification of economic structure and widening of the economic base. This will occur since the manufacturing industry being the most vigorously growing sector, substantially surpasses that of agriculture and fisheries and services sectors in terms of national income generation.

At the same time, future economic development will focus on increased investment by the private sector, and greater participation of Omani nationals in the industrial sector. Thus, industrial development will have a vital importance towards this direction.

2. Master Plan for Industrial Development

The contents of development plan for the industrial sector in the present Five-Year Development Plan is not published yet. Nevertheless the Ministry of Commerce and Industry (MCI) is pursuing the promotion of industrial development on the basis of the basic programs recommended in the "Master Plan Study on Industrial Development" (called "Master Plan for Industrial Development") was completed in 1994. Outline of the industrial development programs indicated in the Master Plan, and the actions being taken by MCI are summarized below.

2.1 Macro-target, and Development Scenario and Basic Strategy for Industrial Development

2.1.1 Macro-target for Industrial Development

The long-term economic development policy targets to sustain the economic growth at an average of not less than 5% per annum in real terms. In order to achieve this goal, the economic growth should need to continue at more than 6% per annum in nominal terms. It is foreseen that the growth of sectoral value-added in the oil sector will slow down, as the international oil prices are unlikely to rise in conspicuous upward trends, although the Government has a policy for oil production that is to maintain the present level of around 700,000 BBLD in the future. When the development of currently found huge-scale gas fields is realized, the sectoral value-added will increase to some extent with increases in gas production. Even with increases in gas sector, nonetheless, the growth of the sectoral value-added in the oil sector will be hardly more than 4% per annum.

Under these situations, the growth of non-oil sectors should be of vital importance for achieving the economic growth target. Particularly, as the manufacturing industry has the most vigorously growing potential surpassing agriculture, fisheries and services sectors, the development of manufacturing industry should be intensively promoted, targeting to maintain the growth of this sector at more than 13% per annum in nominal terms. Hence it is taken as the macro-target for the industrial development.

The scale of the existing manufacturing industry, however, is far below the scale to achieve this growth target. Thus, in order to achieve this goal, while furthering the sustained growth and expansion of the existing industries, it should be important to accelerate new industrial investments by identifying investment opportunities in a wider scope of industries to promote and encourage industrial investments, particularly by the domestic private capitals as well as foreign capitals.

2.1.2 Industrial Development Scenario

The industrial development scenario drawn as the basis for the long-term industrial development, consists of the "Future Vision" for the industrial development, the "Mid- and Long-term Target" for the steps to be taken for realizing the Future Vision, and the "Immediate Task" to taken up at the immediate step towards the Mid- and Long-term Target.

(1) Future Vision

In view of Oman's conditions that the size of domestic markets is comparatively small and further that the natural resources available in the country are inadequate in a variety and reserves to cater for sustaining steady growth of the economy for long, it is vital to develop both resource and non-resource based industries. Sustainable growth of these industries should be based not only on domestic market but also on overseas markets. There are two possible ways of developing the industry based on overseas market. One is the promotion of export-oriented industries, and another is the promotion of foreign investment into Oman by encouraging the relocation into Oman of production base for exports by foreign industries. For developing the former type of industries, it may be prerequisite that there exists some extent of local demands, as many of the export-oriented industries can maintain stable operation if part of the products can be absorbed in the domestic market. Hence the promotion of the latter type of industries would be more appropriate for Oman where domestic demand is limited, but there are several geographical advantages attracting foreign industries. The possible approach would be the encouragement of multi-national companies to set up their regional operation centers, technical service centers and distribution centers in Oman for covering the Mid-eastern region and the establishment of export processing zone for locating various foreign industries for re-exports. This concept is to develop Oman as an "International Industrial and Trade Center in the Mid-East Region" in the future. Those centers located in Oman by multi-national companies and other foreign capital establishments located in the export processing zone will create domestic demand for industrial products and industrial services and also bring those demands for the overseas markets as well.

(2) Immediate Task

However, Oman lacks technological and managerial basis which is indispensable in exploring the full potential of its geographical advantages.

Further, Dubai in UAE is situated in an advanced position in terms of industrialization as well as economic development based on above-mentioned considerations, especially because its industrial infrastructure including the Free Zone have been developed. There are a number of foreign investments in the Free Zone, including regional centers located by multi-national companies, and production bases by foreign operators for their export or re-export business. Further, Dubai is the hub of ocean container lines whereas the Muscat port and other ports in the Gulf are feeder ports.

In recognition of this situation Oman will take a position supplementing Dubai's

function at the initial stage, and then grow to a sub-center in the region that can share with Dubai along with increasing regional demands for such industrial location. With this development step, Oman will establish its position as the regional center standing side by side with Dubai in the future.

Enumerated below are fundamental requirements needed for materializing the above development concept.

- 1) Strategic location
- 2) Strategic system for efficient distribution
- 3) Infrastructure for information technology
- 4) Skilled and professional human resources
- 5) Relevant services for supporting efficient performance of industry
- 6) Technological capabilities
- 7) Marketing capabilities
- 8) Well-established financing system
- 9) Effective taxation

These requirements may be fulfilled through the development of the following functional industries:

- 1) Distribution functions: ocean transport lines, ocean container lines, bulk transport system, general cargo ocean transport system, freight forwarders, bulk storage, cold storage, common warehouses, etc.
- 2) Precision engineering functions: manufacturing of machine tool and machinery components, metal working, etc.
- 3) International communication functions: computer networking, printing, packaging, advertising, warehousing and distribution, and legislation for the protection of intelligent property, etc.
- 4) General supporting functions: industrial design, automation, packaging, metal stamping, plastic processing, tool and die manufacturing, etc.
- 5) Research and testing functions: standards-related tests, applied research on manufacturing technologies, standard development, etc.

The existing functions in Oman are only a few among the foregoing functional industries. However, this situation is similar in neighboring countries in this region. Oman can establish these industries if appropriate actions are taken for the immediate task and continuous efforts to achieve the mid- and long-term target.

Given the present situation of the industry standing on limited fields and number of establishments, however, it would not be realistic for Oman to contemplate the establishment of those functional industries within a short period of time. Thus, as the immediate task for development, Oman will focus on upgrading and strengthening the existing industries for sustainable growth, as well as the promotion of industrial investment, particularly private investment to establish new industries that will cater to both the domestic and export markets.

For expanding the industry, the participation of foreign industries will be paid regard, particularly for ensuring market, as well as obtaining efficient management system and advanced technical know-how.

As another immediate task, Oman will launch on appropriate preparatory steps for developing functional industries which form the basic components for the deepening of industrial structure and the establishment of technological bases which require long-term development process.

(3) Mid- and Long-term Target

The immediate development step as discussed above will entail the creation of markets for industrial inputs including raw materials, intermediates, and supporting services required by the established industries. This will generate the demand that can support the development of upstream industries and supporting industries in economic scale in the future. Thus, along with this evolution, the future tasks will be directed to the development of upstream industries and supporting industries, while continuing the expansion of established industries.

Through the aforementioned development steps, Oman's manufacturing industries will be built up with competitiveness and efficiency towards diversification of industrial structure and deepening of the industrial base in the future. However, in Oman, as discussed earlier, the demand actually generated from such industry will not be sufficient for development of upstream industry and supporting industries due to limited scale of downstream industries. Unlike other countries, the development of upstream industries and supporting industries should also depend partly (often mostly) on the demand from abroad, including export to overseas markets. Thus, in Oman the deepening of industry will be pursued on a selective basis, focusing on the sub-sectors essential for realizing the future vision of industrial development.

2.1.3 Basic Strategy for Industrial Development

The basic strategy for pursuing the promotion of industrial development in line with the foregoing development scenario will pay regard to the four basic direction as enumerated below.

(1) Industrialization with close linkage to industrial capitals in foreign countries and based on overseas markets

Up to the present, Oman has been pursuing industrialization mainly for import substitution in the domestic market. The overwhelming majority of the existing industry stands on the domestic market, except the garment industry which is the only exceptional case that has been developed entirely for exports from the initial stage.

For the promotion of further industrial development, emphasis will be laid on the following:

- 1) Promotion of export industries based on promising resources available in Oman, and also those having comparative advantages derived from geographic advantages and other favorable business conditions existing in Oman
- 2) Promotion of industries which can serve for foreign industries as their production base or distribution base for re-exports or regional distribution

(2) Selective promotion of local supply industries led by the development of market and usage for selected products

Selective development will be promoted on the following fields of industries:

- 1) Industries which can be developed for local supply if intensive efforts are devoted to the development of local markets, particularly new industrial products (including final consumer goods and also industrial inputs such as packaging containers and components to be used by other industries) which are not penetrated yet in Oman, but have potential for increasing demand in future.
- 2) Existing industries using indigenous resources which have possibilities for product diversification for more efficient use of those resources with the development of market and usage
- 3) Industries for producing new products with market development which will lead to the utilization of resources not utilized yet

(3) Simultaneous promotion of large-scale resource-based export industries and small- and medium-scale light industries (particularly manpower saving with mechanization

and production of higher value-added products)

Intensive promotion will be devoted to develop large-scale resource-based export industries such as natural-gas based petrochemical and hydrocarbon industry (ammonia/urea, methanol, etc.) and large-scale mining of gypsum for exports. However, these projects, once developed, will hardly induce subsequent development of other projects because of their individually self-dependent nature and also of limited availability of resources used. Hence, sustainable growth of industry could not be achieved only with the development of large-scale resource-based export industries. Thus, efforts will be paid simultaneously for promoting the development of a wide variety of small- and medium-scale light industries based on the foregoing strategy (1). For this development, emphasis will be placed on the development of modern light industries, rather than labor-intensive light industries, including the rationalization and diversification of the existing industries to achieve manpower saving with mechanization and diversification towards higher value-added product lines, for the labor-intensive light industries have disadvantage in cost competitiveness due to particular situation in Oman where the industries should be dependent on expatriate labor forces.

(4) Undertaking of overall support by the Government for the promotion of industrial development

In promoting the industrial development in the foregoing strategy, the Government will promote the development of industries by the private sector, except large projects for which the Government will take the initiative, since the development of large projects are hard to be promoted by the private sector. For promoting the development of industries by the private sector, the Government will undertake overall support for assisting the development efforts by the private sector, particularly with investment promotion (particularly for foreign investment), enhancement of industrial finance system, human resource development, the establishment of technological basis, and the upgrading of industrial infrastructure, and also will take necessary steps for stimulating industrial development and building up a balanced industrial structure towards realization of the Future Vision.

2.2 Main Industries Given Priority for Immediate Promotion of Development

The main industries given priority for pursuing the promotion of industrial development based on the foregoing target, scenario and strategy are enumerated below.

- (1) Stimulating the growth of existing industries which will contribute to immediate growth of the industrial sector as well as forming the industrial base for strides. These industries include the following:
 - 1) Industries producing products which are directly encouraged by public investment and its indirect effect (such as cement, aggregates, and other construction materials)
 - 2) Industries which can increase the production with marketing efforts for exports (such as oil, cement and processed foods for exports to GCC markets)
 - 3) Enhancement of the existing export industries (garment industry and marble industry for exports)

- (2) Promotion of the development of large-scale chemical projects such as natural-gas based petrochemical and fertilizer projects in association with the development of new large-scale gas fields and the development of LNG/LPG projects for exports.

- (3) Promotion of the development of large-scale gypsum mining for exports.

- (4) Research and promotion for the development of the industries based on gypsum, kaolin and other non-metal minerals produced in Oman (such as gypsum board and plaster, ceramics and other building materials for domestic market and exports)

- (5) Promotion of the development of industries based on geographic advantages of Oman. These industries include the following:
 - 1) Manufacturing of high-value knitwear for exports using cotton or blended yarns imported from India and other neighboring countries.
 - 2) Producing snack foods and other processed foods for domestic market and exports by using agricultural products imported in bulk from neighboring countries.
 - 3) Undertaking of the re-packing of medicines and agricultural products imported for re-exports.
 - 4) Development of the relevant industries supporting the foregoing industries which can supply essential inputs, including high quality packaging containers and printing.

2.3 Government Measures for Supporting the Promotion of Industrial Development

In order to promote the industrial development as mentioned above, the Government will undertake the government supports for the following measures:

- 1) Ensuring export market
- 2) Promotion of foreign investment
- 3) Enhancement of finance system for industrial development
- 4) Human resource development
- 5) Establishment of technological basis
- 6) Improvement and expansion of infrastructure

Table A1-1 Gross Domestic Product (Purchasers' Value)

	1975	1980	1985	1990	1991	1992	1993	1994
[Current Price]								
• GDP (RO million)	722	2,063	3,454	4,051	3,905	4,348	4,294	4,346
• GDP per capita (RO)	780	1,876	2,644	2,719	2,603	2,823	2,901	2,931
(US\$)	2,258	5,431	7,655	7,072	6,770	7,342	7,545	7,623
[1978 Constant Price]								
• GDP (RO million)		1,047	1,850	2,461	2,687	2,823	3,006	3,085
[Average Annual Growth Rate]								
• GDP at Current Price	1975-80	1980-85	1985-90	1990-94				1975-94
	23.4%	10.9%	3.2%	1.8%				9.9%
• GDP at 1978 Constant Price		12.1%	5.9%	5.8%				7.7%*
[Annual Changes: 1990-94]								
• GDP at Current Price				-3.6%	+11.3%		-1.2%	+1.2%
• GDP at Constant Price				+9.2%	+5.1%		+6.5%	+2.6%

Source: Attachment A1-1 & A1-2

(Note:*) 1978-1994

Table A1-2 Relative Share (%) in GDP (Current Price)

	1975	1980	1985	1990	1991	1992	1993	1994
1 Oil & Gas	67.2	61.5	48.2	48.1	41.8	41.3	37.3	36.6
2 Non-oil Industry	13.1	9.8	13.3	11.6	13.6	13.3	14.4	14.1
2.1 Mining	-	*	0.2	0.3	0.3	0.3	0.3	0.2
2.2 Agriculture & Fisheries	2.7	2.5	2.7	3.2	3.6	3.3	3.3	3.3
2.3 Manufacturing	0.3	0.8	2.3	3.7	4.2	4.3	5.1	5.2
2.4 Electricity & Water	0.3	0.8	1.1	1.4	1.6	1.3	1.4	1.4
2.5 Construction	9.8	5.7	7.0	3.0	3.9	4.1	4.4	4.0
3 Services	19.7	28.7	38.5	40.3	44.6	45.5	48.3	49.3
3.1 Government Services	7.3	9.4	13.8	16.3	16.8	17.6	17.7	17.7
3.2 Private Services	12.4	19.3	24.7	24.9	27.8	27.9	30.6	31.6
Total	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.0

Note: * less than 0.1

Source: Attachment A1-1

Table A1-3 Growth of GDP by Sectors

	Average Annual Growth Rate (%)						Annual Changes (%)			
	1975-80	1980-85	1985-90	1975-94	1991	1992	1993	1994		
1 Oil & Gas	21.3 (-5.7)*1	5.5 (11.8)	3.5 (7.4)	6.5 (6.2)*2	-16.6 (2.9)	-0.5 (0.1)	-4.0 (-0.6)	-0.7 (0.5)		
2 Non-oil Industry	16.4 (17.6)*1	18.0 (22.2)	0.7 (0.6)	13.9 (9.1)*2	12.2 (13.8)	-0.3 (-0.6)	1.1 (0.6)	-0.3 (0.0)		
2.1 Mining	0.0 (0.0)*1	55.2 (61.5)	5.9 (-6.2)	16.2 (16.8)*2	-8.3 (37.5)	0.0 (0.0)	0.0 (0.0)	-0.1 (0.0)		
2.2 Agriculture & Fisheries	21.1 (25.7)*1	12.6 (11.1)	7.3 (3.1)	11.1 (7.5)*2	7.5 (7.2)	-0.3 (-0.3)	0.0 (-0.1)	0.0 (0.0)		
2.3 Manufacturing	51.6 (15.5)*1	38.7 (47.2)	13.1 (4.0)	28.4 (18.7)*2	10.5 (9.9)	0.1 (0.0)	0.8 (0.3)	0.1 (0.1)		
2.4 Electricity & Water	51.6 (24.3)*1	18.3 (23.1)	10.2 (26.7)	19.7 (20.0)*2	5.0 (1.9)	-0.3 (-0.7)	0.1 (0.6)	0.0 (0.3)		
2.5 Construction	10.7 (13.2)*1	15.4 (21.3)	-12.7 (-13.6)	4.9 (5.3)*2	25.2 (37.4)	0.2 (0.2)	0.3 (-0.1)	-0.4 (-0.7)		
3 Services	33.1 (15.4)*1	17.5 (15.3)	4.5 (1.0)	15.4 (8.4)*2	6.1 (10.4)	0.9 (0.1)	2.8 (-0.1)	1.0 (0.2)		
3.1 Government Services	29.8 (14.9)*1	19.6 (11.5)	6.6 (2.6)	15.2 (7.0)*2	1.5 (9.6)	0.8 (-0.4)	0.1 (-0.7)	0.0 (0.0)		
3.2 Private Services	34.9 (15.6)*1	16.4 (16.9)	3.3 (0.4)	15.5 (9.0)*2	9.1 (10.7)	0.1 (0.5)	2.7 (0.6)	0.9 (0.2)		
Total	23.5 (5.3)*1	10.8 (15.2)	1.2 (2.5)	10.0 (7.8)*2	-4.1 (7.8)	12.6 (6.5)	0.0			

Note: 1) Figures in left column show the growth/changes of nominal GDP, and figures in parentheses show the growth/changes of real GDP in 1978 constant prices.

2) *1 for 3 years of 1978-80

3) *2 for 12 years of 1978-94

Source: Attachment A1-1 & A1-2

Table A1-4 Domestic Savings and Capital Formation
(1976-1990)

	1976-80	1981-85	1986-90
1 Domestic Savings and Gross Capital Formation (aggregated amount for 5 yrs.) (R.O. million)			
1.1 Domestic Savings	2,844	6,195	6,608
1.2 Gross Capital Formation	1,682	3,894	2,946
- Private	495 (29.4%)	1,138 (29.2%)	941 (32.0%)
- Public	1,187 (70.6%)	2,756 (70.8%)	2,005 (68.0%)
2 Average Annual Growth Rate (%)			
2.1 Domestic Savings	21.2%	7.1%	0.5%
2.2 Gross Capital Formation	12.6%	13.9%	4.9%
- Private	26.2%	14.3%	-0.8%
- Public	8.0%	13.5%	10.5%
2.3 GDP	23.4%	10.9%	3.2%
3 % to GDP			
3.1 Domestic Savings	46.4%	43.2%	41.3%
3.2 Gross Capital Formation	27.4%	27.1%	18.4%

Source: Attachment A1-3 & A1-4

Table A1-5 Domestic Savings and Capital Formation
(1991-1994)

	1991	1992	1993	1994
1 Domestic Savings (R.O. million)	1,037	1,212	1,056	1,160
2 Gross Capital Formation (R.O. million)	661	760	803	737
- Private	251 (38.0%)	258 (34.0%)	308 (38.0%)	256 (35.0%)
- Public	410 (62.0%)	502 (66.0%)	495 (62.0%)	481 (65.0%)
3 Annual Changes (%)				
- Domestic Savings	-27.2 %	+16.3 %	-3.4 %	3.6 %
- Gross Capital Formation	+25.0 %	+13.6 %	1.2 %	-1.7 %
- Private	+13.6 %	-0.8 %	1.3 %	-1.3 %
- Public	+33.1 %	+22.4 %	0.0 %	-0.4 %
- GDP	-3.3 %	+12.8 %	1.6 %	4.2 %
4 % to GDP				
- Domestic Savings	26.5 %	27.3 %	24.6 %	26.7 %
- Gross Capital Formation	16.9 %	17.0 %	18.7 %	17.0 %

Source: Attachment A1-3 & A1-4

Table A1-6 Relative Share of Capital Formation by Type of Economic Activity (%)
(1976-1994)

	1976-80			1981-85			1986-90			1991-94			1976-94		
	Pvt.	Publ.	Total	Pvt.	Publ.	Total	Pvt.	Publ.	Total	Pvt.	Publ.	Total	Pvt.	Publ.	Total
1 Productive Sectors	57.4	22.1	32.5	67.7	24.7	37.2	68.6	33.5	44.7	41.1	37.8	39.3	56.4	29.9	39.0
(Oil & Gas)	(39.9)	(19.0)	(25.1)	(50.7)	(18.0)	(27.6)	(52.6)	(29.8)	(37.1)	(31.4)	(34.9)	(33.3)	(42.4)	(25.4)	(31.3)
(Manufacturing)	(14.0)	(0.6)	(4.5)	(8.8)	(2.8)	(4.5)	(9.9)	(1.3)	(4.0)	(6.4)	(0.8)	(3.3)	(8.7)	(1.6)	(4.1)
2 Services Sectors	42.6	16.0	23.8	32.3	19.9	23.5	31.4	18.4	22.6	24.3	16.8	20.2	30.2	18.2	22.3
(Housing)	(37.8)	(2.4)	(12.8)	(24.9)	(3.6)	(9.8)	(21.1)	(3.3)	(9.0)	(18.2)	(1.9)	(9.2)	(23.0)	(2.9)	(9.9)
3 Infrastructure	0	61.9	43.7	-	55.4	39.2	-	48.1	32.7	34.6	45.3	40.5	13.4	52.0	38.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	100.0	100.0	100.0	100.0
	(29.4)	(70.6)	(100.0)	(29.2)	(70.8)	(100.0)	(32.0)	(68.0)	(100.0)	(44.8)	(55.2)	(100.0)	(34.6)	(65.4)	(100.0)

Source: Attachment A1-3 (2)

Table A1-7 Production and Exports of Crude Oil

	Production of Crude Oil	Exports of Crude Oil	Average Export Value per Barrel
	(Mn. BBL)	Volume (Mn. BBL)	US\$/BBL
1975	125	125	11
1980	104	102	35
1985	182	165	28
1986	204	187	14
1987	212	197	18
1988	227	212	14
1989	234	216	16
1990	250	229	21
1991	259	235	17
1992	271	253	18
1993	285	270	15

Source: Statistical Year Book, Monthly Statistical Bulletin

Table A1-8 External Trade

(Unit: R.O. million)

	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Total Exports (fob)	1,294	1,778	1,123	1,485	1,291	1,563	2,116	1,874	2,135	2,065	2,132
- Oil *	1,245	1,658	1,011	1,361	1,136	1,395	1,940	1,630	1,785	1,622	1,628
- Non-oil	4	23	27	39	63	67	69	79	97	123	145
- Re-export	45	97	85	85	92	101	107	165	253	320	359
Imports (cif)	598	1,089	917	701	846	868	1,031	1,228	1,449	1,582	1,505
Balance	696	689	206	784	445	695	1,085	646	686	483	627
% to Total Exports											
- Oil exports	96.2	93.2	90.0	91.7	88.0	89.2	91.7	87.0	83.6	78.5	76.4
- Non-oil exports	0.3	1.3	2.4	2.6	4.9	4.3	3.3	4.2	4.5	6.0	6.8
- Re-exports	3.5	5.5	7.6	5.7	7.1	6.5	5.0	8.8	11.9	15.5	16.8

Note: * Including export of refined oil from Oman Refinery Co. for 1980-1992, but excluding export of refined oil for 1993

Source: Attachment A1-6

Table A1-9 Structure of Non-Oil Exports by Main Category (%)

	1990	1992	1994
1 Live Animals & Products	14.6	6.2	6.7
2 Vegetable Products	3.9	2.6	2.0
3 Animal or Vegetable Fats & Oils	0.5	0.9	1.3
4 Prepared Foodstuffs, Beverages	2.4	10.3	10.0
5 Mineral Products	2.5	2.8	3.1
6 Products of Chemical or Allied Industries	4.2	2.8	1.9
7 Plastics, Rubber & Articles Thereof	1.5	1.5	1.5
8 Raw Hides & Skins, Leather & Articles Thereof	0.1	0.0	0.1
9 Wood & Articles of Wood	0.4	0.1	0.1
10 Pulp of Wood, Paper & Paperboard & Articles Thereof	0.6	0.4	0.3
11 Textiles & Textile Articles	6.6	5.7	5.9
12 Footwear, Headgear, Umbrellas, Prepared Feathers & Articles Made Therewith	0.4	0.0	0.0
13 Articles of Stone, Plaster, Cement or Similar Materials	0.7	0.5	1.0
14 Natural or Cultured Pearls, Precious or Semi-Precious Stones, Metals & Articles Thereof	1.3	0.0	0.1
15 Base Metals & Articles of Base Metal	14.5	6.9	7.9
16 Machinery & Mechanical Appliances, Electrical Equipment, Parts Thereof	7.6	6.5	5.8
17 Vehicles, Aircraft, Vessels & Associated Transport Equipment	35.1	48.3	47.5
18 Optical, Photographic, Instruments & Apparatus, Clocks & Watches, Musical Instruments	2.5	1.6	1.0
19 Arms & Ammunition		0.0	
20 Miscellaneous Manufactured Articles	0.6	1.1	1.0
21 Works of Art, Collectors Pieces & Antiques		1.7	2.7
Total	100.0	99.9	99.9

Source: Attachment A1-7

Table A1-10 Structure of Imports by Main Category (%)

	1990	1992	1994
1 Live Animals & Products	5.4	4.5	4.9
2 Vegetable Products	7.5	5.4	5.5
3 Animal or Vegetable Fats & Oils	0.4	0.5	0.8
4 Prepared Foodstuffs, Beverages	5.0	8.8	9.0
5 Mineral Products	4.5	3.0	3.4
6 Products of Chemical or Allied Industries	5.8	5.3	5.5
7 Plastics, Rubber & Articles Thereof	2.7	2.9	2.3
8 Raw Hides & Skins, Leather & Articles Thereof	0.2	0.1	0.2
9 Wood & Articles of Wood	1.4	1.2	1.1
10 Pulp of Wood, Paper & Paperboard & Articles Thereof	1.8	1.3	1.5
11 Textiles & Textile Articles	4.6	4.1	4.0
12 Footwear, Headgear, Umbrellas, Prepared Feathers & Articles Made Therewith	0.6	0.4	0.4
13 Articles of Stone, Plaster, Cement or Similar Materials	1.5	1.6	1.7
14 Natural or Cultured Pearls, Precious or Semi-Precious Stones, Metals & Articles Thereof	4.3	3.2	4.4
15 Base Metals & Articles of Base Metal	7.7	7.1	6.0
16 Machinery & Mechanical Appliances, Electrical Equipment, Parts Thereof	19.4	20.6	19.5
17 Vehicles, Aircraft, Vessels & Associated Transport Equipment	16.8	23.2	23.2
18 Optical, Photographic, Instruments & Apparatus, Clocks & Watches, Musical Instruments	2.0	2.0	1.8
19 Arms & Ammunition	0.0	0.0	0.0
20 Miscellaneous Manufactured Articles	1.9	1.6	1.6
21 Works of Art, Collectors Pieces & Antiques	6.5	3.1	3.3
Total	100.0	99.9	100.1

Source: Attachment A1-8

Table A1-11 Balance of Payments

(Unit: R.O. million)

	1980	1985	1990	1991	1992	1993	1994
1 Trade Balance	616	555	1,042	594	636	411	588
2 Services & Private Transfers (Net)	-323	-517	-562	-654	-769	-787	-928
3 Balance on Current Account	293	38	480	-60	-133	-376	-340
4 Balance on Capital Account	52	144	-199	220	112	58	49
- Direct Investment	30	(52)	(54)	(57)	(33)	(54)	(37)
- Other Capital	22	(92)	(-253)	(220)	(112)	(58)	(149)
5 Overall Balance	325	-1	137	230	49	-335	-249
(after adjustment of errors & omission)							

Source: Attachment A1-5

**Table A1-12 Estimate of Omani and Expatriate Labor Force
(1975-1994)**

	Table Labor Force			Omani Labor			Expatriate Labor			Percentage of Omani Labor to Total (%)
	Number ('000)	Av. Ann. Growth (%)	Number ('000)	Av. Ann. Growth (%)	Number ('000)	Av. Ann. Growth (%)	Number ('000)	Av. Ann. Growth (%)		
1975	209		135		74				64.6	
1980	306	7.9	152	2.4	154	15.8			49.7	
1985	505	10.5	192	4.8	313	15.2			38.0	
1990	529	0.9	207	1.5	322	0.6			39.1	
1994	670	6.1	240	3.8	430	7.5			35.8	

Source: 1975-1990 : Fourth Five Year Development Plan
1994 : Statistical Year Book, 1994

Table A1-13 Government Revenue and Expenditure

(Unit: R.O. million)

	1985	1990	1991	1992	1993	1994
1 Revenue	1,776	2,022	1,845	1,910	1,738	1,786
of which						
-Oil & Gas	(87)	(1,752)	(1,565)	(1,588)	(1,390)	(1,413)
-Others	(13)	(270)	(281)	(322)	(349)	(373)
2 Expenditure	1,928	1,887	1,868	2,259	2,242	2,242
3 Surplus (+) or Deficit (-)	-152	+153	-8	-329	-490	-456
• Grants & Net Borrowing	+64	-169	+4	-29	-18	5
• Net Withdrawal from SGRF	+97	-164	-184	+108	+420	+290
• Net Change in Government Accounts	+9	-180	-189	-251	-929	-720

Source: Attachment A1-9

Attachment A1-1 Gross Domestic Product by Kind of Economic Activity-Current Prices

(1975 - 1994)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994*
1 Oil Sectors	487	518	533	493	719	1,279	1,474	1,421	1,379	1,443	1,675	1,064	1,405	1,188	1,462	1,990	1,659	1,815	1,624	1,618
1.1 Crude Oil	437	518	533	491	713	1,267	1,456	1,402	1,353	1,409	1,639	1,025	1,362	1,144	1,417	1,943	1,609	1,760	1,563	1,554
1.2 Natural Gas	0	0	0	2	6	12	18	19	26	34	36	39	43	44	45	47	50	55	61	64
2 Non-Oil Sectors	238	372	422	464	583	800	1,045	1,222	1,389	1,630	1,802	1,771	1,642	1,780	1,821	2,150	2,300	2,581	2,725	2,802
2.1 Commodity Sectors	95	117	118	123	150	203	255	301	365	445	464	469	406	433	425	481	530	583	626	624
- Mining	0	0	0	1	1	1	3	4	6	7	9	9	8	14	17	12	11	13	11	11
- Agriculture	14	12	17	23	31	37	40	46	54	57	68	68	71	78	83	85	93	93	96	99
- Fisheries	6	6	7	8	9	15	21	20	27	32	26	28	35	46	34	49	51	51	48	48
- Manufacturing Industry	2	4	7	9	12	16	27	40	67	91	82	103	111	123	137	152	167	188	220	230
- Electricity & Water	2	6	9	11	11	16	19	21	24	33	37	40	44	46	48	60	54	57	59	61
- Building & Construction	71	89	78	71	86	118	145	170	187	225	242	221	137	126	106	123	154	181	192	175
2.2 Service Sectors	143	255	304	341	433	597	790	921	1,024	1,185	1,338	1,302	1,236	1,347	1,396	1,669	1,770	1,998	2,099	2,178
- Government Services	53	69	90	109	138	195	261	305	360	424	478	496	510	535	549	659	670	773	768	784
- Other Services	90	186	214	232	295	402	529	616	664	761	860	806	726	812	847	1,010	1,100	1,225	1,331	1,394
3 GDP at market prices	725	890	955	957	1,302	2,079	2,519	2,643	2,768	3,073	3,477	2,835	3,047	2,968	3,283	4,140	3,958	4,395	4,348	4,419
Less: Imputed Banking Services	-3	-11	-13	-14	-19	-25	-39	-44	-50	-60	-64	-72	-71	-72	-82	-122	-93	-95	-98	-115
Add: Customs Duties	0	5	5	4	7	9	11	15	22	32	41	37	27	30	30	33	40	48	44	42
4 GDP at purchasers' value	722	884	947	947	1,290	2,063	2,491	2,614	2,740	3,045	3,454	2,800	3,003	2,926	3,231	4,051	3,905	4,348	4,294	4,346

Note: * Provisional

Sources: 1975-1988: Fourth Five Year Development Plan

1989-1990: Statistical Year Book, 1993

1991-1994: Statistical Year Book, 1994

**Attachment A1-2 Gross Domestic Product by Economic Activity-1978 Constant Prices
(1978 - 1994)**

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 Oil Sectors	493	460	438	500	502	593	636	765	869	926	995	1,022	1,093	1,125	1,186	1,243	1,292
1.1 Crude Oil	491	456	433	494	495	583	623	751	851	906	974	1,001	1,071	1,101	1,160	1,215	1,262
1.2 Natural Gas	2	4	5	6	7	10	13	14	18	20	21	21	22	24	26	28	30
2 Non-Oil Sectors	464	539	624	750	889	1,017	1,242	1,389	1,342	1,211	1,269	1,317	1,451	1,626	1,691	1,819	1,865
2.1 Commodity Sectors	123	140	170	198	255	314	401	464	486	417	443	435	478	552	558	616	625
- Mining	1	1	1	2	3	7	9	11	12	10	9	10	8	11	12	12	12
- Agriculture	23	31	34	35	37	45	53	66	62	63	71	75	78	87	84	88	90
- Fisheries	8	9	15	15	17	19	17	17	17	21	31	20	19	17	17	18	19
- Manufacturing Industry	9	10	12	21	30	38	56	83	81	84	87	88	101	111	115	133	140
- Electricity & Water	11	14	17	18	26	30	45	48	78	95	116	131	157	168	158	185	202
- Building & Construction	71	75	91	107	142	175	221	239	236	144	129	111	115	158	172	180	162
2.2 Service Sectors	341	399	454	552	634	703	841	925	856	794	826	882	973	1,074	1,133	1,203	1,240
- Government Services	109	137	144	170	177	204	236	248	239	260	263	277	282	309	314	312	320
- Private Services	232	262	310	382	457	499	605	677	617	534	563	605	691	765	819	891	920
3 GDP at market prices	957	999	1,062	1,250	1,391	1,610	1,878	2,154	2,211	2,137	2,264	2,339	2,544	2,743	2,875	3,062	3,157
Less: Imputed Banking Service Charges	-14	-18	-21	-32	-35	-41	-53	-58	-60	-58	-58	-67	-100	-78	-78	-80	-94
Add: Custom Duties	4	6	6	8	11	16	1,850	27	24	16	16	17	17	22	26	24	22
4 GDP at producers' value	947	987	1,047	1,226	1,367	1,585	1,850	2,123	2,175	2,095	2,222	2,289	2,461	2,687	2,823	3,006	3,085

Source: 1978 - 1991: Statistical Year Book, 1993
1992 - 1994: Statistical Year Book, 1994

Attachment A1-3 (1) Expenditure on Gross Domestic Product at Purchasers' Value-Current Prices
(1975 - 1994)

Items	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1. Final Consumption	344	422	515	582	692	1,076	1,247	1,510	1,582	1,746	2,064	1,949	1,844	2,136	2,238	2,626	2,880	3,136	3,238	3,186
- Private (#)	115	181	246	310	337	577	591	795	802	938	1,126	1,020	930	1,180	1,262	1,081	1,485	1,771	1,944	1,820
- Public	229	241	269	272	355	499	656	715	780	808	938	929	914	956	976	1,545	1,395	1,365	1,295	1,367
2. Gross Fixed Capital Formation	258	317	289	274	336	466	584	707	737	913	953	898	564	511	444	529	661	760	803	737
- Private	50	57	70	88	120	160	194	225	207	261	251	246	164	158	152	221	251	258	308	256
- Public	208	260	219	186	216	306	390	482	530	652	702	652	400	353	292	308	410	502	495	481
Net Export/Import Balance of Goods & Services	120	145	143	91	262	521	660	397	421	386	437	-47	595	279	549	896	376	452	253	423
GDP at Purchasers' Values	722	884	947	947	1,290	2,063	2,491	2,614	2,740	3,045	3,454	2,800	3,003	2,926	3,231	4,051	3,917	4,348	4,294	4,346

Note: # Private final consumption including change in stocks.

Source: Statistical Year Book

Attachment A1-3 (2) Gross Capital Formation by Type of Economic Activity

(Unit: R.O. million)

	1976-80			1981-85			1986-90			1991-94			1976-94		
	Pvt.	Publ.	Total	Pvt.	Publ.	Total	Pvt.	Publ.	Total	Pvt.	Publ.	Total	Pvt.	Publ.	Total
1. Productive Sectors	284.2	262.6	546.8	769.8	680.1	1,449.9	646.0	671.4	1,317.4	668.6	759.8	1,428.4	2,368.6	2,373.9	4,742.5
1.1 Oil & Gas	197.3	225.4	422.7	577.0	496.3	1,073.3	495.6	597.5	1,093.1	511.2	700.1	1,211.3	1,781.1	2,019.3	3,800.4
1.2 Manufacturing	69.1	6.9	76.0	99.9	76.5	176.4	93.1	25.8	118.9	104.2	17.0	121.2	366.3	126.2	492.5
1.3 Others	17.8	30.3	48.1	92.9	107.3	200.2	57.3	48.1	105.4	53.2	42.7	95.9	221.2	228.4	449.6
2 Services Sectors	210.7	189.7	400.4	367.7	549.0	916.7	296.0	368.3	664.3	395.7	337.9	733.6	1,270.1	1,444.9	2,715.0
2.1 Housing	187.0	28.2	215.2	282.9	98.6	381.5	199.2	66.5	265.7	296.7	39.1	335.8	965.8	232.4	1,198.2
2.2 Others	23.7	161.5	185.2	84.8	450.4	535.2	96.8	301.8	398.6	99.0	298.8	397.8	304.3	1,212.5	1,516.8
3 Infrastructure	-	734.0	734.0	-	1,526.8	1,526.8	-	962.7	962.7	564.0	909.7	1,473.7	564.0	4,133.2	4,697.2
Total-Gross Capital Formation	494.9	1,186.3	1,681.2	1,137.5	2,755.9	3,893.4	942.0	2,002.4	2,944.4	1,628.3	2,007.4	3,635.7	4,202.7	7,952.0	12,154.7

Source: 1976 - 1992: Statistical Year Book, 1993
 1993 - 1994: Statistical Year Book, 1994

Attachment A1-4 Domestic and National Savings
(1975 - 1994)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 GDP at Purchasers' Prices	722	884	947	947	1,290	2,063	2,491	2,614	2,740	3,045	3,454	2,800	3,003	2,926	3,231	4,051	3,905	4,348	4,294	4,346
2 Total Final Consumption	344	422	515	582	692	1,076	1,247	1,510	1,582	1,746	2,064	1,949	1,844	2,136	2,238	2,626	2,880	3,136	3,238	3,186
3 Domestic Savings (1-2)	378	462	432	365	598	987	1,244	1,104	1,158	1,299	1,390	851	1,159	790	993	1,425	1,025	1,212	1,056	1,160
4 Net Factor Income (Transfers)	-135	-148	-130	-111	-137	-212	-235	-238	-297	-350	-399	-336	-281	-406	-406	-419	-423	-572	-616	-750
5 National Savings (3+4)	243	314	302	254	461	775	1,009	866	861	949	991	515	878	384	587	1,006	602	640	440	410
6 % of Domestic Savings to GDP (3/1)	52.4	52.3	45.6	38.5	46.3	47.8	49.9	42.2	42.3	42.7	40.2	30.4	38.6	27.0	30.7	35.2	26.2	27.9	24.6	26.7
7 % of National Savings to GDP (5/1)	33.7	35.5	31.9	26.8	35.7	37.6	40.5	33.1	31.4	31.2	28.7	18.4	29.2	13.1	18.2	24.8	15.4	14.7	10.2	9.4
8 Gross National Product (GNP) (1+4)	587	736	817	836	1,153	1,851	2,256	2,376	2,443	2,695	3,055	2,464	2,722	2,520	2,825	3,632	3,482	3,776	3,678	3,596

Source: 1975 - 1991: Statistical Year Book, 1993
1992 - 1994: Statistical Year Book, 1994

Attachment A1-5 Balance of Payments

(Unit: R.O. million)

	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 Trade Balance	616	555	113	707	385	654	1,042	594	636	411	588
1.1 Merchandise exports (fob)	1,294	1,717	1,093	1,463	1,285	1,564	2,118	1,873	2,136	2,063	2,131
- Oil exports	1,244	1,597	981	1,339	1,130	1,396	1,942	1,629	1,786	1,621	1,627
- Others	50	120	112	124	155	168	176	244	350	442	504
1.2 Merchandise imports (cif)	-678	-1,162	-980	-756	-900	-910	-1,076	-1,279	-1,500	-1,652	-1,543
2 Services & Private Transfers (Net)	-323	-517	-496	-381	-519	-526	-571	-654	-769	-787	-928
3 Balance on Current Account (1+2)	293	38	-383	326	-134	128	471	-60	-133	-376	-340
4 Balance on Capital Account	52	144	323	-43	168	87	-191	220	112	58	49
4.1 Direct Investment	30	52	51	12	34	43	54	57	33	54	37
4.2 Other Capital	22	92	272	-55	134	44	-191	220	112	58	149
5 SDR Allocations	1	-	-	-	-	-	-	-	-	-	-
6 Errors & Omissions	-21	-183	-235	-211	-147	-34	-133	70	70	-17	-58
7 Overall Balance (3+4+5+6)	325	-1	-295	72	-113	181	147	230	49	-335	-249

Sources: Statistical Year Book, 1991, 1992 and 1994

Attachment A1-6 External Trade (1975-94)

(Unit: R.O. million)

	Exports										Imports	Trade Balance
	Oil (Domestic)		Non-oil (Domestic)		Re-Exports	Total Exports	Total Exports	Imports	Trade Balance			
	Crude Oil	Refined Oil ⁽¹⁾	Total	Non-oil								
1975	488.1	-	488.1	1.1	..	489.2	264.3	224.9				
1980	1,244.6	-	1,244.6	4.6	45.3	1,294.5	598.2	696.3				
1981	1,526.4	-	1,526.4	6.5	88.9	1,621.8	790.3	831.5				
1982	1,409.6	-	1,409.6	7.7	109.5	1,526.8	926.5	600.3				
1983	1,346.6	-	1,346.6	10.6	110.0	1,467.2	860.9	606.3				
1984	1,401.0	-	1,401.0	17.2	109.3	1,527.5	949.2	578.3				
1985	1,597.0	60.8	1,657.8	22.9	97.4	1,778.1	1,088.9	689.2				
1986	981.0	29.8	1,010.8	26.6	85.1	1,122.5	916.7	205.8				
1987	1,328.0	33.0	1,361.0	39.0	84.9	1,484.9	700.7	784.2				
1988	1,101.7	34.7	1,136.4	62.9	92.1	1,291.4	846.4	445.0				
1989	1,346.4	48.8	1,395.2	66.5	101.2	1,562.9	867.9	695.0				
1990	1,885.9	54.3	1,940.2	68.8	107.4	2,116.4	1,050.9	1,085.5				
1991	1,575.1	54.6	1,629.7	79.1	165.1	1,873.9	1,228.1	645.8				
1992	1,745.8	39.3	1,785.1	96.7	253.5	2,135.3	1,449.2	686.1				
1993	1,594.9	27.2	1,622.1	122.5	320.3	2,064.9	1,581.8	483.1				
1994	1,579.4	48.7	1,628.1	145.4	358.5	2,132.0	1,505.3	626.7				

Notes: ⁽¹⁾ Exports from Oman Refinery Co.

Source: Statistical Year Book, 1991, 1992, 1995 & 1994

**Attachment A1-7 Value of Domestic Non-Oil Exports
(Excluding Re-exports)**

(Unit: R.O. '000)

	1989	1990	1991	1992	1993	Excluding re-export	1994	Excluding re-export
1 Live Animals & Products	24,707	25,035	22,699	21,671	29,304	(28,274)	33,581	(30,841)
2 Vegetable Products	6,336	6,728	5,976	9,113	9,923	(9,090)	11,612	(9,514)
3 Animal or Vegetable Fats & Oils	114	778	2,383	3,299	4,553	(4,401)	6,563	(6,277)
4 Prepared Foodstuffs, Beverages	8,724	4,026	18,143	35,998	51,578	(3,279)	50,145	(3,577)
5 Mineral Products	3,700	4,257	8,331	9,765	13,388	(13,299)	15,561	(14,093)
6 Products of Chemical or Allied Industries	5,268	7,137	8,640	9,778	10,701	(5,797)	9,535	(4,475)
7 Plastics, Rubber & Articles Thereof	1,981	2,614	5,311	5,117	7,662	(1,804)	7,810	(2,094)
8 Raw Hides & Skins, Leather & Articles Thereof	57	161	132	77	87	(48)	293	(278)
9 Wood & Articles of Wood	367	714	551	367	252	(69)	387	(40)
10 Pulp of Wood, Paper & Paperboard & Articles Thereof	1,554	1,004	1,234	1,368	1,223	(1,057)	1,386	(1,187)
11 Textiles & Textile Articles	4,606	11,267	14,589	20,110	24,334	(19,754)	29,618	(25,837)
12 Footwear, Headgear, Umbrellas, Prepared Feathers & Articles Made Therewith	229	602	594	61	51	(2)	78	(28)
13 Articles of Stone, Plaster, Cement or Similar Materials	594	1,215	1,243	1,792	4,394	(3,449)	4,987	(3,507)
14 Natural or Cultured Pearls, Precious or Semi-Precious Stones, Metals & Articles Thereof	269	2,250	167	92	239	(20)	536	(238)
15 Base Metals & Articles of Base Metal	28,167	24,851	23,243	24,212	30,796	(26,200)	39,666	(33,227)
16 Machinery & Mechanical Appliances, Electrical Equipment, Parts Thereof	14,696	12,910	21,995	22,695	23,556	(2,787)	29,052	(4,203)
17 Vehicles, Aircraft, Vessels & Associated Transport Equipment	55,117	60,058	96,258	168,961	215,323	(40)	239,401	(140)
18 Optical, Photographic, Instruments & Apparatus, Clocks & Watches, Musical Instruments	2,985	4,274	5,986	5,619	5,035	(0)	5,266	(0)
19 Arms & Ammunition			3	145	0	(0)	57	(0)
20 Miscellaneous Manufactured Articles	1,430	1,050	2,114	3,944	3,662	(3,075)	5,031	(4,509)
21 Works of Art, Collectors Pieces & Antiques	6,853		4,574	5,988	6,702	(46)	13,357	(3)
Total	167,734	170,931	244,166	350,172	442,763	(122,491)	503,922	(144,068)

Source: Foreign Trade Statistics

Attachment A1-8(1) Recorded Imports by Main Category

(Unit: R.O. '000)

	1989	1990	1991	1992	1993	1994
1 Live Animals & Products	56,217	55,385	62,591	65,159	69,476	74,479
2 Vegetable Products	66,220	77,647	75,496	78,437	83,025	82,213
3 Animal or Vegetable Fats & Oils	4,176	3,847	6,362	7,380	8,347	11,725
4 Prepared Foodstuffs, Beverages	44,542	51,722	83,081	127,542	130,641	135,677
5 Mineral Products	22,792	46,611	33,160	43,700	78,484	51,042
6 Products of Chemical or Allied Industries	50,135	59,935	69,056	77,115	86,250	83,437
7 Plastics, Rubber & Articles Thereof	25,734	28,102	34,656	41,892	38,275	34,738
8 Raw Hides & Skins, Leather & Articles Thereof	1,710	2,102	2,836	2,008	2,007	2,349
9 Wood & Articles of Wood	10,418	14,214	16,255	16,885	17,945	17,003
10 Pulp of Wood, Paper & Paperboard & Articles Thereof	16,821	18,603	19,494	19,080	21,316	22,051
11 Textiles & Textile Articles	41,759	47,012	54,058	59,266	61,472	60,122
12 Footwear, Headgear, Umbrellas, Prepared Feathers & Articles Made Therewith	4,771	6,429	7,592	6,051	6,697	5,891
13 Articles of Stone, Plaster, Cement or Similar Materials	15,923	15,758	20,490	23,626	25,943	25,346
14 Natural or Cultured Pearls, Precious or Semi-Precious Stones, Metals & Articles Thereof	40,092	44,444	42,236	46,413	41,145	66,718
15 Base Metals & Articles of Base Metal	78,656	79,772	102,766	102,188	105,042	90,761
16 Machinery & Mechanical Appliances, Electrical Equipment, Parts Thereof	180,694	199,588	292,621	298,997	311,785	293,439
17 Vehicles, Aircraft, Vessels & Associated Transport Equipment	133,053	173,028	221,956	336,232	373,936	348,831
18 Optical, Photographic, Instruments & Apparatus, Clocks & Watches, Musical Instruments	26,710	20,902	26,455	29,056	26,353	26,619
19 Arms & Ammunition	1	5	11	5	274	64
20 Miscellaneous Manufactured Articles	18,071	19,184	19,694	23,252	24,407	23,815
21 Works of Art, Collectors Pieces & Antiques	29,453	66,641	37,218	44,960	69,033	49,003
Total	867,948	1,030,931	1,228,084	1,449,244	1,581,853	1,505,321

Source: Foreign Trade Statistics

Attachment A1-8 (2) Recorded Imports by Main Category

(Unit: R.O. million)

Years	Primary & processed food & beverages	Primary & processed industrial supplies	Fuels & lubricants	Machinery & other capital equipment, parts & accessories	Transport equipment & parts & accessories	Consumer Goods	Total
1980	77,890	139,770	64,586	86,911	116,085	97,059	582,301
1981	85,796	190,151	94,013	145,745	147,083	102,025	764,813
1982	100,291	226,800	93,928	194,384	174,851	107,635	897,889
1983	108,784	214,258	11,842	160,071	210,669	124,406	830,030
1984	122,430	249,430	19,274	187,551	176,526	146,956	902,167
1985	127,591	298,055	14,884	259,059	182,889	178,210	1,060,668
1986	131,086	228,805	23,252	255,257	114,998	136,583	889,961
1987	145,547	150,070	20,449	146,501	118,851	99,341	680,559
1988	148,693	217,396	12,775	142,719	141,310	128,587	791,480
1989	151,989	195,941	16,698	181,420	149,650	140,290	835,988
1990	164,755	237,511	40,709	173,363	192,021	155,938	964,297
1991	176,060	282,851	20,889	257,548	253,887	199,598	1,190,833
1992	189,265	306,574	25,884	256,461	374,444	251,679	1,404,307
1993	196,129	340,359	46,684	277,386	406,713	245,208	1,512,479
1994	201,968	332,640	14,608	247,826	392,660	266,333	1,456,035

Source: Statistical Year Book

Attachment A1-9 (1) Government Revenue & Expenditure Classified by Major Items

(Unit: R.O. million)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 Revenues	1,187.9	1,478.1	1,333.8	1,423.8	1,513.2	1,776.2	1,220.8	1,512.1	1,247.6	1,462.0	2,022.3	1,845.4	1,910.3	1,738.3	1,786.4
1.1 Oil	1,095.5	1,341.3	1,215.7	1,277.5	1,304.6	1,510.0	928.9	1,194.9	993.6	1,197.4	1,701.6	1,515.7	1,525.1	1,331.6	1,360.9
1.2 Gas	14.0	18.1	18.9	20.2	34.4	36.7	37.9	39.0	44.2	45.1	50.3	48.8	63.1	57.9	52.5
1.3 Other revenue	78.4	118.7	99.2	126.1	174.2	229.5	254.0	278.2	209.8	219.5	270.4	280.9	322.1	348.8	373.0
2 Expenditure	949.8	1,229.8	1,412.9	1,546.9	1,760.3	1,928.3	1,886.8	1,609.1	1,567.3	1,665.8	1,887.4	1,868.1	2,258.7	2,242.4	2,242.4
2.1 Defense & National Security	406.8	521.9	581.5	670.7	728.2	744.9	665.4	583.6	589.2	600.6	742.3	643.3	777.8	738.2	779.3
2.2 Civilian Current Exp.	271.2	335.1	388.9	440.6	507.2	599.0	648.2	648.5	682.0	760.5	827.8	819.7	960.5	989.4	998.0
2.3 Development Exp.	246.7	317.4	395.2	377.1	464.7	533.7	532.4	328.8	280.2	270.3	285.8	391.7	471.1	477.6	458.9
2.4 Support to Private Sector	25.1	49.4	47.5	58.5	60.2	50.7	40.8	48.2	15.9	34.4	31.5	13.4	49.3	37.2	6.1
3 Surplus(+) or Deficit(-)	+238.1	+254.3	-79.1	-123.1	-247.1	-152.1	-666.0	-97.0	-319.7	-182.7	+152.5	-8.0	-329.2	-489.7	-435.5
3.1 Grants & Net Borrowing	+36.2	+100.5	+55.7	+213.5	+223.5	+64.6	+215.6	-49.5	+87.9	+40.8	-169.0	3.6	-29.4	-18.4	4.9
3.2 Net Withdrawal from SGRF	-274.3	-215.9	-98.4	-89.9	-27.5	+96.8	+492.4	+146.5	+231.8	-113.0	-163.6	-184.4	+107.5	+420.3	-289.8
3.3 Net Change in Govt. Accounts	0.0	+138.9	-121.8	+0.5	-51.1	+9.3	+42.0	0.0	0.0	-254.9	-180.1	-188.8	-251.1	-928.6	-720.4

Source: 1980 - 1988: Statistical Year Book, 1993

1989 - 1994: Statistical Year Book, 1994

Attachment A1-9(2) Government Revenue Expenditure Classified by Major Items (1/2)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
(Unit: R.O. million)																					
A Revenues																					
Oil	373.1	454.7	482.2	457.7	624.6	1,095.5	1,341.3	1,215.7	1,277.5	1,304.6	1,510.0	928.9	1,194.9	993.6	1,197.4	1,701.6	1,515.7	1,525.1	1,331.6	1,360.9	
Gas	0.0	0.0	0.0	2.8	4.3	14.0	18.1	18.9	20.2	34.4	36.7	37.9	39.0	44.2	45.1	50.3	48.8	63.1	57.9	52.5	
Custom Duties	0.5	4.5	4.6	4.6	7.0	8.6	11.3	14.7	21.7	31.6	41.1	37.0	26.9	29.6	29.4	32.6	39.5	47.8	43.6	41.5	
Corporate Income Taxes	2.1	4.6	5.9	6.0	5.6	6.5	10.5	11.4	18.7	20.4	26.4	25.6	21.2	23.4	16.0	14.4	18.3	19.9	23.6	30.0	
Interest from Investments	2.8	3.2	6.7	5.9	6.9	19.8	38.6	14.2	9.2	21.3	19.6	25.1	30.5	8.5	8.5	7.5	9.3	9.6	8.2	5.8	
Others	9.2	20.3	21.1	25.3	33.8	43.5	58.3	58.9	76.5	100.9	129.2	133.5	166.8	141.5	165.6	215.9	213.8	244.8	273.4	295.7	
1 Revenue from Internal Sources	387.7	487.3	520.5	502.3	692.2	1,187.9	1,478.1	1,333.8	1,423.8	1,513.2	1,763.0	1,188.0	1,479.4	1,240.8	1,462.0	2,022.3	1,845.4	1,910.3	1,738.3	1,786.4	
2. Repayment of Loans to the Government	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	13.2	32.8	32.7	6.8	21.1	17.6	14.7	19.2	14.4	20.4	
3 Total Revenue (1+2)	387.7	487.3	520.5	502.3	692.2	1,187.9	1,478.1	1,333.8	1,423.8	1,513.2	1,776.2	1,220.8	1,512.1	1,247.6	1,483.1	2,039.6	1,860.1	1,929.5	1,752.7	1,806.8	
B Expenditures																					
Current & Development Exp.																					
Current Expenditure	-	179.1	164.1	201.1	246.4	347.7	450.0	497.9	530.4	568.8	608.9	579.4	541.2	525.3	581.5	715.6	621.6	747.2	715.5	754.0	
Development Exp. on Construction Projects of Civilian Nature	-	92.2	73.0	63.4	22.6	59.1	71.9	83.4	140.3	159.4	136.0	86.0	42.4	63.9	19.1	26.7	21.7	30.6	22.7	25.3	
4 Total Defense & National Security Expenditures	241.0	271.3	237.1	264.5	289.0	406.8	521.9	581.3	670.7	728.2	744.9	665.4	583.6	589.2	600.6	742.3	643.3	777.8	738.2	779.3	
Civilian Current Exp.																					
All Ministries	65.3	95.1	126.6	138.1	144.5	214.8	272.5	315.7	362.7	409.4	489.0	500.0	509.1	535.3	600.0	660.0	674.1	779.8	796.7	809.6	
Interest on Government Loans	5.9	7.2	10.3	16.2	19.7	21.1	15.5	17.5	19.2	39.3	47.1	75.9	72.9	84.0	94.5	92.4	69.4	98.5	100.3	100.7	
P.D.O. (Government Share)	10.3	12.3	14.9	18.6	24.1	35.3	47.1	55.7	58.7	58.5	62.9	72.3	66.5	62.7	66.0	75.4	76.2	82.2	92.4	87.7	
5 Total Civilian Current Exp.	81.5	114.6	151.8	172.9	188.3	271.2	335.1	388.9	440.6	507.2	599.0	648.2	648.5	682.0	760.5	827.8	819.7	960.5	989.4	998.0	
Development Expenditures																					
All Ministries	156.8	181.1	130.4	89.0	129.4	168.9	241.0	289.0	290.7	374.0	433.7	363.1	230.0	203.8	176.5	163.0	241.2	320.4	313.6	298.7	
P.D.O. (Government Share)	16.2	14.0	15.5	33.7	63.7	77.8	76.4	106.2	86.4	90.7	96.0	163.3	90.5	69.6	85.4	115.7	142.3	142.3	156.5	151.9	
Exploration for Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	6.0	8.3	6.8	8.4	7.1	8.2	8.4	7.5	8.3	
6 Total Development Expenditure	173.0	195.1	145.9	122.7	193.1	246.7	317.4	395.2	377.1	464.7	533.7	532.4	328.8	280.2	270.3	285.8	391.7	471.1	477.6	458.9	

Attachment A1-9(2) Government Revenue Expenditure Classified by Major Items (2/2)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
(Unit: R.O. million)																					
Support to Private Sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.8	2.5	
Industrial Sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	9.7	2.6	2.5	1.3	0.7	12.1	33.9	31.5	4.3	38.4	26.4	4.3	
International, Regional & Local Organization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Confessional Loans to Private Sector*	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oman Housing Bank	0.0	-	-	-	-	6.2	0.7	14.6	8.2	4.0	9.0	7.1	7.0	2.0	0.0	0.0	6.0	6.0	6.0	6.0	
Oman Development Bank	0.0	-	-	-	-	2.5	0.0	4.0	0.0	3.0	0.5	2.0	2.1	1.3	0.0	0.0	0.9	1.3	0.9	-	
Oman Bank for Agr. & Fisheries	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.9	4.0	2.0	0.3	1.2	0.0	0.5	0.0	1.0	0.8	1.4	1.8	
7 Total Support	0.0	0.0	0.0	0.0	0.0	8.7	5.5	19.2	22.8	13.6	14.0	10.7	11.0	15.9	34.4	31.5	13.4	49.3	37.2	6.1	
8 Government Loans & Participation in Local and Foreign Enterprises	14.0	4.7	22.4	25.0	11.8	16.4	43.9	28.3	35.7	46.6	36.7	30.1	37.2	0.0	0.0	0.0	0.0	-	-	-	
9 Total Expenditure: (4+5+6+7+8)	509.5	585.7	557.2	585.1	662.2	949.8	1,223.8	1,412.9	1,546.9	1,760.3	1,928.3	1,886.8	1,609.1	1,567.3	1,665.8	1,887.4	1,868.1	2,258.7	2,242.4	2,242.3	
10 Surplus (+) or Deficit (-) (3-9)	-121.8	-98.4	-36.7	-82.8	30.0	238.1	254.3	-79.1	-123.1	-247.1	-152.1	-666.0	-97.0	-319.7	-182.7	+152.5	-8.0	-329.2	-489.7	-435.5	
C Means of Meeting Deficit																					
11 Grants (Net)	+71.6	+18.0	+92.7	+6.7	+61.9	+35.2	+50.0	+14.7	+50.7	+72.8	-8.8	-0.3	+2.7	+15.8	+6.2	-21.7	-1.3	-6.0	7.4	9.6	
Loans:																					
Long & Medium Term Disbursed	+64.0	+58.4	+52.7	+24.2	+40.5	+66.0	+89.0	+70.0	+191.0	+195.3	+125.4	+297.7	+123.0	+218.8	+231.9	+56.5	+147.1	+105.8	+136.5	+254.3	
Long Term Repaid	-9.4	-15.9	-20.9	-34.4	-53.5	-65.0	-38.5	-29.0	-28.9	-44.6	-52.0	-81.8	-175.2	-146.7	-197.3	-203.8	-142.2	-129.2	-162.5	-259.0	
12 Net Borrowing	+54.6	+42.5	+31.8	-10.2	-13.0	+1.0	+50.5	+41.0	+162.8	+150.7	+73.4	+215.9	-52.2	+72.1	+34.6	-147.3	+4.9	+23.4	-26.0	-4.7	
13 Total (11+12)	+126.2	+60.5	+124.5	-3.5	+48.9	+36.2	+100.5	+55.7	+213.5	+223.5	+64.6	+215.6	-49.5	+87.9	+40.8	-169.0	+3.6	-29.4	-18.6	4.9	
14 Net Withdrawal from SGRF	0.0	0.0	0.0	0.0	0.0	-274.3	-215.9	-98.4	-89.9	-27.5	+96.8	+492.4	+146.5	+231.8	-113.0	-163.6	-184.4	+107.5	-420.3	-289.8	
15 Net Change in Govt. Accounts (10+13+14)	+4.4	-37.9	+87.8	-86.3	+78.9	0.0	+138.9	-121.8	+0.5	-51.1	+9.3	+42.0	0.0	0.0	-254.9	-180.1	-188.8	-251.1	-928.6	-720.4	

Source: Statistical Year Book

Annex 2 Current Situation of Industry In Oman

1 Overview of Industry

1.1 Current Situation

During the First Five-Year Plan period (1976 - 1980), several plants, including flour mill, dates processing factories and marine products processing factories were constructed under the government initiative, while the construction of large-scale plants such as a cement mill, a copper smelting plant, and an oil refinery was commenced.

According to the industrial statistics in 1994, the manufacturing sector accounted for 36.9% of the non-oil production sector which comprises the mining, agriculture, fishery, utility, and construction besides the manufacturing industry. In the past 14 years from 1980 to 1994, the manufacturing sector recorded rapid growth at an annual average growth rate of 21.0%, far exceeding the growth at 8.4% and 9.4% per annum achieved respectively by the productive sector and the non-oil sector as a whole.

On the other hand, the proportion of the manufacturing sector in the capital formation tended in static or downward trends at 4.5% of the aggregate capital formation in 1976 - 1980, 4.5% in 1981 - 1985, 4.0% in 1986 - 1990, and 3.3% in 1991 - 1994. The initial stage of industrial development was led with the government initiative, as evidenced from the proportion of public sector accounting for 43% of total capital formation in the manufacturing sector in 1981 - 1985. After this period, the proportion of public sector declined to 21.7% in 1986 - 1990, and further down to 14.0% in 1991 - 1994.

1.2 Investment Trends

Industrial investment realized most vigorously during the Second and Third Five-Year Plan periods in the last two decades since 1975 when Oman launched on the industrialization process (Table A2-1). Whereas annual average of industrial investment recorded RO. 35 million during the Second and Third Five-Year Plan periods, it decreased to RO. 16 million in 1991 and 1992 which are the initial two years in the Fourth Five-Year Plan.

The investment in the non-metal mineral sector accounted for a significant portion at 55.5% in the industrial investment realized during the Second Five-Year Plan period. This

is attributable to active public investment made for the development of infrastructure during that period, which in turn spurred investment in construction material industries, including cement and aggregates. The chemical and petroleum sector received the second largest investment, accounting for 30.6% of total, as a result of government-led investment in the petroleum refining sector during the period.

During the Third Five-Year Plan period, the largest portion of industrial investment was realized in the basic metal sector, accounting for 51.1%. This reflects major government investment projects in copper smelting (1 company), and aluminum products (1 company).

In 1991 and 1992, the initial two years in the Fourth Five-Year Plan, industrial investment declined sharply due to the cessation of investments from large projects for basic industries unlike the investment realized during the Second and Third Five-Year Plans period. The investment in the food and beverage sector recorded a relatively steady increase even in the Fourth Five-Year Plan period, while that in the textile and apparel sector continued constant investment every year although no increase in investment. The investment in other industrial sub-sectors declined, in which the non-metal mineral sector and chemicals and chemical products sector held relatively large shares, accounting for 18.2% and 17.0% respectively. The investment in the non-metal mineral sector continued at some level because the construction of building and housing stimulated the demand for building materials, although the public work decreased. The chemicals and chemical products sector kept momentum because the 40% increase¹ increased for the production of plastic shopping bags and other goods to meet increasing demands due to changes in the distribution and retail industries.

1.3 Distribution of Industrial Establishments

Of 2,799 enterprises¹ registered to MCI, the non-metal mineral product industry accounts for 41% (1,142 enterprises), woodworking 27% (759), and metal products 20% (550). These 3 subsectors account for 88% of total, and are comprised of numerous small and medium enterprises, and micro enterprises, while these 3 subsectors account for only 49% of 286 companies which are classified as the establishments with a capital over RO. 100,000.

¹ Number of registered establishments at the end of 1992 was 3,749. Since no breakdown figure is available for this data, the following analysis is based on computer output of MCI on 2,799 registered establishments available as of November 1993, which is given in Table A2-2.

1.4 Size of Local Markets

The metal products subsector is supported with relatively large domestic market estimated as RO. 250 million a year, followed by the chemical products subsector and petroleum products subsector estimated as RO. 200 million each, and the food and beverages subsector estimated as RO. 180 million. (Table A2-3)

2 Overview of Main Industrial Branches

2.1 Food and Beverages

The food industry in Oman includes the processing of grain, meat, marine products, vegetables and fruits, production of edible oil, bakeries, production of snack food, confectioneries, and the bottling of soft drink and mineral water. Most of food processing factories are located near markets, except marine products processing factories which are located near the supply sources of marine products. The food processing industry is generally for local markets, except the marine products processing which is mainly for exports. Most of those factories are engaged in simple processing to produce ordinary items of foodstuff, and only few produces their original products developed to meet market needs.

There are about 207 manufacturing enterprises registered in the food and beverage sector, of which 52 enterprises (or 25%) are classified as those having a capital of RO. 100,000 or over. These relatively large enterprises produce relatively high quality products by using advanced technologies and equipment acquired from abroad and employing foreign experts, which are distributed to the domestic market, or are exported when a surplus arises. Most of them operate under the supervision by expatriate engineers, but without technical collaboration with foreign technology suppliers after receiving technical assistance from them at the initial setup stage.

104 registered enterprises (or 50%) are classified as small and micro enterprises having a capital of RO. 25,000 or less, of which 60 enterprises are bakeries, 23 are flour mills, and 20 are engaged in spice and coffee milling and packaging. Medium-scale enterprises with a capital between RO. 25,000 and 100,000 totaled 51 (25% of total), of which 29 are bakeries. There are 13 enterprises classified in the miscellaneous food sector, of which one ice producer and one snack food producer are relatively large, and others are small and medium-scale enterprises engaged in ice production, confectionery, or milling

and repackaging of spice, coffee and beans. The remaining 9 enterprises are engaged in meat processing, production of dairy products, marine products processing, and bottling of soft drink. Most of them have a capital of RO. 50,000 or more, and their management is similar to those of the enterprises with a scale of RO. 100,000 and over, although their production scale is smaller because their production is concentrated only for local supply.

(1) Meat processing

The value of locally produced processed meat products (excluding meat for cooking) accounts for more than 55% of the local demand². However, the share of local made products is reported as 20% or less³.

(2) Dairy products

Oman imports RO. 27 million worth of dairy products annually. Those not produced locally, such as butter and cheese, are mainly imported from Europe and Australia. Some products locally produced have strong competition with imports from the UAE and other GCCs. Even the largest local producer is hard to keep its share of 30% due to strong competition with the GCC products, as two GCC-based dairy companies have established their own distribution channels within Oman. Weakness of the domestic dairy industry is directly reflected in the current state of the dairy product industry.

(3) Vegetable and fruit processing

As agricultural produce is comparatively small in Oman, it is difficult for vegetable and fruit processors to operate large-scale processing based on local supply sources of vegetables and fruits. In Oman, however, there are a dozen of large farms producing vegetables and fruits, some of which are exported to GCC countries at present. There may be possibilities to establish small-scale processing factories to produce a variety of products to meet local demands by using vegetables and fruits supply from those large farms under arrangements with them for constant supply.

(4) Marine products processing

In Oman almost all of marine products processing companies were established to export marine products caught with inshore fishery. Their processing works are located in several places where fishing ports are located.

Unstability of fish catch is the major problem of the marine products processing

² Estimated on the basis of information obtained from the industry.

³ Estimated on the basis of information obtained from the industry.

industry. As the Oman's fishery is still situated in conventional operation, adequate supply is not secured for processors to maintain their operation with high capacity utilization. In addition, as there are large volume of wastes after catching, it causes to further reduce supply. The shortage of raw materials for the marine products processing industry always presents a risk of a sudden cost increase, which discourages the industry to invest in more advanced processing facilities.

In general, it is reported that Oman is abundant on fishery resources. However, it often relates to a variety of species. There is no information indicating accurate estimate of fish resources available.

(5) Oil and fat processing

In this subsector, import substitution has nearly reached its limit. Further, the raw material costs are comparatively high.

(6) Grain milling

The existing flour mill has a capacity over the local demand. As the present operation is about 70% of the capacity, an important task is to raise the capacity utilization, which depends on increases in export (currently 10% of production amount) and development of domestic and export markets for flour-based processed food.

(7) Beverages

In Oman there is a mineral water bottler, a juice producer using fresh fruit juice, and a number of producers making several variety of soda drink based on fruit juice or condensed fruit juice. Oman imports RO. 17 million worth of beverages annually. In total, non-alcohol beverages, except mineral water (RO. 165,000), amount to RO. 11.33 million. Of this amount, RO. 10.28 million are imports from the UAE, which are mostly produced and supplied by multinational beverage producers having strong marketing capabilities.

(8) Chocolate products

Domestic demand for chocolate products is estimated at around 4,000 tons annually, of which 60% - 65% cater to the low-end market where local products and foreign products imported from the GCCs are competing. As consumers in the low-end market are price-oriented, most of products sold in such market is poor in quality. On the other hand, the high-end market is quality conscious. There is only one leading domestic producer producing high quality products for the high-end market, but its share is not more than 15%, as the majority is dominated by imports of internationally well-known products.

(9) Other food products

49 enterprises are classified under the "other food products" category. Those with a capital of RO. 100,000 or over are mainly making ice, snack food and confectionery. Also included are repackers of tea bags, coffee, salt, tomato powder, spice, and rice.

Demands for snack food and similar products currently increased in Oman and other GCCs, reflecting changes in lifestyle and also resulting from an increased Foreign people working in these countries.

2.2 Wood Products and Furniture

The wood product and furniture sector is generally divided into 1) wood milling and working, 2) manufacture of wooden and cork products, and 3) manufacture of wooden furniture. There are 585 enterprises registered in the wood milling and working subsector, of which 551 (or 94% of total) are small or micro enterprises with a capital of RO. 25,000 or less. In this subsector, there are 8 large enterprises having a capital of RO. 100,000 or over, which are all located in Muscat.

Only one enterprise is registered in the wooden and cork product subsector, having a capital of RO. 25,000 or less.

There are 173 registered enterprises in the wooden furniture manufacturing subsector (excluding metal furniture manufacturing enterprises which are classified in the metal products sector), of which 159 (or 92% of total) are small or micro enterprises with a capital of RO. 25,000 or less. Most of these small furniture makers are engaged in order-based production of small items of furniture for local customers. Their manufacturing are mostly based on manual work by using only simple woodworking machines. These works use expatriate workers for most part of work. Although some of foreign craftsmen have brought various techniques, indigenous woodworking techniques form the basis of the small furniture production.

Small wood mills produce lumber for those small furniture manufacturing works. Small furniture works as well as small wood mills are concentrated on the A'Sharqiya district, mainly Sur, as well as in Muscat, unlike other manufacturers which are mostly located in Muscat.

Large furniture makers with a capital of RO. 100,000 or over conduct their business in

a different manner from smaller ones. Since most of them have started their business as furniture importers, they still sell imported furniture in addition to their own brands. While some of them are oriented towards marketing of manufactured furniture in stores, most of them are more or less characterized as contractors specialized in interior furnishing work and supplying furniture for hotels, commercial buildings, and large mansions. They adopt management system and production technology transferred from industrialized countries, import materials from various countries, and design and manufacture products by themselves. Their products are excellent in design and quality and are exported to foreign customers in GCCs on a contract basis. These companies were established and have been growing rapidly during the construction boom in the country. As construction activity becomes sluggish in recent years, some of them were faced with business decline.

On the other hand, smaller enterprises which serve small demand for local communities can only expect moderate market expansion due to the rise in personal income and the changes in lifestyle. There is little prospect for future improvement in design and quality.

Large companies have high potential to export high-grade furniture and parts by using their design and production capabilities. As there is no wood resource in Oman, however, the development of furniture industry in Oman depends on how adequate supply of high quality wood, particularly hardwood suitable for furniture can be secured from supply sources abroad.

There is no linkage between large furniture manufacturers and small works. In other countries, when large manufacturers substantially increase production, they subcontract small works for manufacturing some components of furniture. In Oman, however, such linkage might not be realized even if the production of large manufacturers increase, as small works are not capable to produce reliable quality of components, while large manufacturers have a surplus capacity for producing components by themselves.

2.3 Textile and Apparel

The textile and apparel industry in Oman comprise textile manufacturers making fabrics by weaving imported yarn, manufacturers of ready-made garments for exports, and tailors mainly serving the domestic market.

There are 3 enterprises registered in the textile manufacturing subsector. Only one

company operates a modern textile mill in a relatively large scale to produce general fabrics, while other company is specialized for making tent cloth. Another one operates a small textile mill with a capital of RO. 25,000 or less. In addition to these registered manufacturers, there are a large number of backyard operators engaged in weaving by hand-loomins⁴.

The aforesaid large textile mill weaves cloth using imported yarn, for distasha and other products of Oman and other GCCs. It is also the only mill in the GCCs weaving cloth on a commercial scale utilizing modern machines. However, it faces keen competition with imported products, although holding a share of about 20% in the domestic market.

Largest number of registered enterprises are manufacturers of garments for exports which make garments on the basis of design provided by buyers. There are about 30 enterprises engaged in garment manufacturing, of which 24 enterprises are large enterprises having a capital of RO. 100,000 or over, and most of the remaining enterprises have a capital of RO. 75,000 or larger. Among those manufacturers, there are 5 enterprises engaged in manufacturing of knitted garments⁵.

Almost all of produced garments are exported to the US market. Each manufacturer undertakes production with export license provided by MCI within the Oman's export quota to US allocated by the US Government. Most of products are for middle and low-end markets in US, which are mass-production items sold at supermarkets or discount stores there. Most of workers for the garment manufacturing are expatriate workers employed from Sri Lanka, India and other neighboring countries. Their wages are much higher than those in their home countries.

Once the NAFTA is established, low-cost products may be imported from Mexico without import quota. Further, US Government will abolish the import quota system with commitment for free market under GATT in near future. In such event, Omani garment industry may loose competitiveness if the present state is continued by using high cost expatriate workers. In order to cope with such serious conditions, Omani garment industry should undertake diversification of products and markets, as well as rationalization and

⁴ Ministry of Heritage operates small scale weaving factory equipped with Chinese automatic weaving machine for the purpose of preserving traditional industries.

⁵ It is difficult to identify the product of enterprise exactly from the company list which indicate a classifications as Ready-made garments manufacturers or Knitted garments manufacturers.

upgrading of production system, including 1) market creation in EC markets and other new markets; 2) diversification of product lines towards higher value-added items 3) cost reduction by mechanization and rationalization of production system, 4) manufacturing of children's or readies' garments for domestic and GCC markets to substitute those imported in considerably large volume.

2.4 Paper and Paper Products, and Printing

Due to limitations of forest and water resources, there is no ground to establish the paper and pulp industry in Oman. The paper product industry in this country consists of secondary or tertiary processing of imported paper, and printing.

Nine enterprises are registered in the paper processing and paper product sector. They are generally large in size, five of which have a capital of RO. 100,000 and above. As seen in other manufacturing sectors, they operate plants based on technology and machinery acquired from abroad and by employing expatriate engineers to produce products for domestic market.

While 5 enterprises are manufacturing packaging containers such as paperboard cartons, 4 are supplying paper products such as printing paper, notebook, tissue paper, and paper diaper.

The printing industry in the country has grown through a relatively high level of printing technology due to the absence of restriction on imports of ink, paper and other materials, as well as printing machinery and equipment. Thirty enterprises are registered in this category, of which 16 have a capital of RO. 100,000 or over, 9 with RO. 50,000 and above, and only 5 with less than RO. 50,000. In the entire GCC region, more than 200 enterprises are in printing business and are competing intensely.

Growth of printing demand depends heavily on the expansion of industrial activity. The printing industry has already been well established to cover the domestic demand in Oman. Thus, the industry's future growth potential lies in export markets, particularly outside the GCCs, such as India and African countries on the east coast. as it can offer high quality service.

2.5 Chemicals and Chemical Products Industry

There are 48 enterprises registered in the chemicals and chemical products manufacturing sector. Thirty-eight have a capital of RO. 100,000 or more which undertake production for domestic market.

As the domestic demand is limited, the number of enterprises in most of subsectors is only a few, ranging between 1 and 4, except 9 enterprises industrial chemicals, 9 for soap/perfumes/cosmetics, and 11 for plastics.

Generally, the demand for chemicals and chemical products grow along with expansion of industrial activity, rise of income level and changes in lifestyle. In Oman, however, as industrial accumulation is still limited, main demands will be chemical products used as household goods and packaging containers, as well as industrial products and parts.

Packaging containers include plastic bottles, films, injection molded products, and plastic bags used as shopping bags. Major bottling companies produce plastic bottles by themselves. In future, specialized bottle makers may emerge, as demands grow further. There is no local production of high grade packaging films, but there are a number of manufacturers producing plastic bags to be used as shopping bags to meet increased demand.

Production of some molded products for household are undertaken locally. Production of pipes and fittings used as construction and farming materials have also been started in recent years. However, domestic demands for those items are still small.

Apart from the above, there are a number of manufacturers who are engaged in manufacturing of glass fiber reinforced products such as tanks and boats⁶.

2.6 Non-metal Mineral Products

Enterprises registered in the non-metal mineral product sector are divided into 4 subsectors, namely: 1) glass, 2) structural clay, 3) cement, lime, and plaster, and 4) others. All of enterprises belonging to these subsectors manufacture mainly construction or building materials by highly utilizing domestic resources.

⁶ These manufacturers are classified under non-metal mineral products subsector according to ISIC code.

There are 18 enterprises in the glass manufacture industry, of which 5 have a capital of RO. 100,000 or over. All these large enterprises manufacture glass fiber products such as tanks and boats, except one producing ornament glass for building. Other smaller enterprises also are engaged in producing mirrors, small glass products, and glass fiber products. These manufacturers mainly employ manual processing, and have potentiality to further diversify products depending on the expansion of domestic demand.

There is no local production capacity for glass bottles and containers. Although domestic markets are not very large, imports of glass bottles⁷ have reached almost 18,000 tons annually, and the demands for glass bottles are likely to increase, as demand for carbonated beverages increased recently and consumers prefer bottled ones rather than canned ones.

In the structural clay manufacture subsector, only one enterprise is registered. However, there must be a number of small and medium-size enterprises as well as micro-scale enterprises which manufacture bricks, blocks and similar products.

Five enterprises are engaged in the manufacture of cement and lime, and 4 of them have a capital of RO. 100,000 or over, including 2 leading cement manufacturers and a lime producer. The cement manufacturers are partly exporting owing to the growing foreign demand. As neighboring countries have also established their respective cement industries, the expansion of cement industry in Oman should be basically dependent on growth of domestic demand. In near future the expansion could be possible, as the domestic demand is increasing further.

There are 1,118 enterprises registered as manufacturers of other non-metal mineral products. This category of industry include a wide variety of products, but it has basically grown along with the expansion of construction industry in the country. 954 enterprises (85% of total) are very small, having a capital of RO. 25,000 or less, while 80 (7%) are large enterprises with a capital of RO. 100,000 or larger.

There are 33 enterprises engaged in aggregate business, most of which are large enterprises, because of the capital-intensive nature of this business. At present, the industry is mainly serving domestic demand. As there are no major aggregate supply

⁷ Importing bottled beverage is not included.

sources in the GCCs, except UAE, the aggregate industry in Oman may have possibilities to grow for exports.

In contrast, concrete block manufacturers are dominated by medium-size enterprises, while ready-mix concrete is only supplied by large enterprises. In addition, 15 enterprises manufacture tiles and mosaic tiles for buildings.

Marble is produced by 4 enterprises with a capital of RO. 100,000 and over, and 1 firm with capital ranging between RO. 75,000 - 100,000. They are mainly serving domestic demand and export small sized marble at present, but can grow into an export industry in the future.

In addition to the above subsectors, the non-metal mineral product sector includes the ceramic industry. No enterprise is registered for such activity in this country. However, there are small, family-owned enterprises which make ceramics with traditional craftsmanship. The Ministry of Heritage is operating small shops which use machinery and employ craftsmen from China for the purpose of preserving this industry. Nevertheless, ceramics manufactured at these shops are made from locally available clay, and have been commercialized with the help of Chinese craftsmen only recently. Before that, there were only unglazed pottery with small commercial value.

2.7 Metalworking Industry

550 enterprises are registered in the fabricated metal products industry. Only 37 enterprises, accounting for only 7% of total, are relatively large-scale having a capital of RO. 100,000 or over, and 451 enterprises, accounting for more than 80%, are small-scale with a capital of RO. 25,000 or smaller.

In general larger enterprises, mainly those having a capital of RO. 75,000 or larger, use relatively modern machinery and technology, and undertake business widely for all part of the domestic market, as well as the export market. On the other hand, many of the smaller enterprises including the micro enterprises with a capital of RO. 50,000 or smaller mainly serve local demand in small quantities, and are engaged in backyard-type operations based on manual processing by using a limited number of simple machines.

Of the 550 enterprises, 507 belong to two subsectors, structural metal products and fabricated metal products. When 20 enterprises in the metal furniture industry are added,

these 3 subsectors altogether account for 96% of total. Most of enterprises in these subsectors import general steel or aluminum materials, process them into products through simple sheet metal working, welding, coating, as well as simple machining involved for some products. Value added is generally low, and the material cost accounts for 65% - 75% of total production cost. Products are mainly consumed by the construction industry.

In subsectors other than the above three, only a few enterprises are registered. These enterprises normally hold a 60% - 85% share of domestic demand as their business base, and export 30% - 45% of total production to the GCCs. In the domestic market, in turn they have to compete with products imported from the GCC, but they generally maintain a higher range of market share by offering quality products. Also, many of them use off-the-shelf materials for processing, making the raw material cost very small in percentage of total cost. As widely seen in metalworking industries in the country, these enterprises are not much automated to maintain production flexibility required of a small market operation. They adjust production as skilled workers are employed in various parts of the production process. As a result, they generally attain a high level of value added. At the same time, they often use specialized machinery in some processes. In such a case, their ability to divert into other products will be limited.

Large metalworking enterprises in Oman have capability to carry out design and engineering for fabrication to some extent. They mostly use general-purpose materials, common-use machine components and common machines such as motors, and only a few operating under license agreement with foreign companies use special components imported. Most part of components are usually processed with general-purpose machine tools, except for special items to be used for plants which are fabricated by using specialized machines.

In general, when metalworking fabricators undertake the manufacturing of more complicated product mix or those involving more processing steps, they are used to subcontract some part of processing work, thus expanding division of work in the industry. In Oman, however, internal processing and assembly are still common, partly because production lines are relatively simple, and there is little metalworkers who are capable of undertaking subcontract job. Smaller and micro enterprises also carry out similar type of operation with self-competition, although job scale is much smaller. They are engaged in independent fabrication and no subcontract job for large enterprises.

In addition to the fabricated metal products and machinery industry, there is a

subsector specializing in metalworking-related engineering. This subsector is divided into those performing machining and repairing services on a contract basis mainly for oil industries, such as PDO and ORC, and those doing machining and adjustment of automotive parts for automotive repair. The enterprises in the former category are relatively large and some of them are affiliates of foreign companies. On the other hand, the enterprises in the latter category are small and micro enterprises, and they own various types of general-purpose machine tools. The former enterprises are recognized by customers as having a relatively high level of workmanship and reliability. They have the ability to complete the entire process of work within the country, rarely contracting out to foreign manufacturers. Nevertheless, their major customers are oil and refinery industries, which do not require a high level of precision as required by machining and assembly work for automotive and electronics industries.

Enumerated below are the current business scale of metalworking industry estimated on the basis of imports.

(1) Raw materials and base metals

In 1992, imports of iron and steel, such as pig iron, steel, hoop steel, bar steel, shape steel, and ingot amounted to RO. 24.3 million with 170,000 tons in total. Stockiest in Dubai performs the function of a steel stock center having distribution and simple processing capabilities.

(2) Secondary steel materials

Imports of steel materials such as pipes and wires, components such as springs and pipe fittings, and cast and forged items totaled RO. 54 million, or 117,000 tons in 1992. Of total, steel pipes and casings amounted to RO. 35 million, or 88,000 tons.

The second largest subsector is tanks and other heavy items, amounting to RO. 8.2 million or 13,600 tons. Import substitution in this area has made some progress, although some items are met by imports due to limited capabilities of domestic producers.

(3) Boilers, engines, pumps and parts

The category recording the largest import is agricultural machinery and parts, totaling to RO. 59 million or 12,300 tons (not including some mowing machines which are recorded on a unit basis). The category covers 18 H.S. 5-digit and 6-digit industries.

The second largest segments are motors, engines, turbines, and pumps, amounting to RO. 23.5 million or 4,000 tons. It should be noted, however, that this category

encompasses 34 H.S. 6-digit industries, and each component does not show particularly a large size.

Imports of fans and compressors, and their parts amount to RO. 17.3 million (tonnage data are not available, as some of them are recorded on a unit basis). Of total, air-conditioners and parts amount to RO. 16.5 million or 90,000 units. In view of this volume, local production or assembly of these items may be possible in near future.

Non-metal ore quarrying and processing machinery and parts amount to RO. 16 million. On a per volume basis however, they are not very significant (800 tons).

(4) Electronics and electrical components and parts

General electric parts, such as switches, plugs, and lamp holders, dominate the highest share of total imports of electronics and electrical components and parts, totaling 14.8 million tons or 3,800 tons. Local consumption of these parts will increase further, so that local production of these products may be possible in near future.

The second largest segments are broadcasting equipment, radio receivers, and television sets, amounting to 27.3 million tons. In particular, about 130,000 sets of colored TVs were imported.

(5) Motor vehicles and parts

Imports of motor vehicles and parts reached 331 million Riats, accounting for more than 40% of total metal machinery imports. Motor vehicle imports consist of 46,400 passenger cars, 3,100 vehicles for commercial and industrial uses, and 2,700 vehicles for public transportation, with a combined total of RO. 268 million. On the other hand, imports of automotive parts totaled RO. 56.3 million or 14,800 tons.

3 Advantages and Restrictions for Oman's Industrial Development

In the Master Plan Study, the following factors were pointed out as special features and the industrial development strategy was formulated taking into account these factors.

3.1 Government and Macroeconomic Conditions, and Geographical Characteristics

The political and macroeconomic stability of the Sultanate of Oman has established conducive environment for industrial investments, and this is one of Oman's fundamental

advantages in promoting both domestic and foreign investment to further industrial development. It is a general perception that Oman is located in an area which is less susceptible to potential conflicts in the Middle East.

Further, Oman's geographic location has advantages for external trade, particularly as a strategic point connecting South-west Asian countries India and African countries on the east coast, in movement of people and goods.

However, industries in industrialized countries have little knowledge about Oman. Generally, they show less interest in industrial investment in GCC countries except for oil and gas related industries because of limited regional markets. For the promotion of foreign investment, it would be essential to conduct intensive promotion activities in attracting interest of potential foreign investors from target countries.

3.2 Natural Resources Available for Industrial Development

Oman is endowed with various natural resources including oil and natural gas, minerals, agricultural and marine resources, land and water resources. The oil and natural gas resources have given an impetus for steady growth of Oman's economy up to the present. The efficient utilization of these resources is a critical ingredient for future economic development. Since Oman's reserves of these resources are limited unlike in other GCC oil-producing countries, the development of non-oil industries is a vital task for the state to sustain economic growth. This is clearly indicated as a major economic development policy.

Various mineral resources have also been discovered in Oman. However, metal mineral resources adequate for commercial exploitation are very limited. On the other hand, in the case of non-metal mineral resources, gypsum and aggregates are prospective, though the commercial production of these resources require the development of infrastructure because deposits are laid in remote areas

As water available for industrial development is extremely limited, it would be necessary to rely on desalination.

Agricultural production in Oman is very limited in variety and quantity, except dates, to supply raw materials for agro-based industries. Oman has potentials for commercialization of marine resources, but the fishery industry is yet to be developed to

ensure adequate supply of marine products which serve as stable inputs for the marine processing industry.

3.3 Markets for Industrial Products

The limited size of the domestic market owing to a small population is an inherent constraint in the promotion of industrial development, particularly the development of import-substituting industries in Oman. This implies the importance of industrial development based on export-oriented industries.

Traditional export markets for Oman, dominantly comprise the GCC countries with a 57% share, particularly the UAE accounting for 50% of total, followed by Tanzania (3.1%), the US (2.9%), the UK (2.4%), Singapore (1.9%) and India (1.7%)⁸.

Some products may be common for both Oman and other GCC countries, and for such products, the production could be embarked for supply not only for the domestic market but for other GCC markets as well. Nevertheless, as the size of these markets is relatively small, even if all GCC markets are combined, efforts should be exerted to penetrate other export markets.

In future, India and east coast countries in Africa are expected to emerge as new trade partners.

3.4 Capital, Technology and Human Resources Available for Industrial Development

3.4.1 Present Stage of Industrialization

The existing manufacturing industries in Oman are dominated by light processing industries which undertake the production of final products such as food and beverages, general consumer goods, building materials and metal products or appliances for domestic use which are small to medium in scale. These industries, except the garment industry established entirely for exports, were originally intended for the production of supplies to domestic markets. Some manufacturers, however, have started to export part of their products in recent years.

⁸ The export statistics in 1992 shows that following GCC countries Iran and Hong Kong were the major export destinations from Oman, accounting for 12% and 10% of total respectively.

The large-scale heavy and chemical industry existing in Oman is limited to only a few. These are the oil refinery, copper smelting plant and cement plants which belong to the public sector.

In general, the scale of the existing industries is as yet small in terms of the number of establishments, production capacities as well as the extent of industrial branches, and they are concentrated in downstream industries. Majority of the industries use raw materials and industrial inputs imported from abroad, except for a few industries processing indigenous resources, because upstream or supporting industries which manufacture industrial inputs have not been established yet in Oman. There are some factories which undertake the production of ancillary components, but these are produced in small units only for their self-uses. Further, Oman's industries are based on matured technologies transferred from industrialized countries, and high-tech industries do not exist yet in Oman.

This situation implies that Oman is still at an early stage of industrialization and has not yet reached a stage that can encourage the development of linkage industries or upstream industries towards diversification and deepening of industrial structure.

3.4.2 Technological Accumulation and Management Capabilities

Most of the Oman's industries have not been long since their establishment, which operate manufacturing units acquired from abroad while using expatriate supervisors and operators. This situation limits the accumulation of technologies as well as upgrading of management capabilities in individual manufacturing enterprises.

Most of manufacturers, at present, undertake the production of customary products employing commonly established process technologies transferred from abroad or based on product designs provided by foreign partners or buyers. Thus, the present level of production can be sustained even without accumulation and upgrading of technologies. However, the accumulation and upgrading of technologies as well as the enhancement of R&D activities would be of vital importance for the existing industries to raise productivity and quality and also to diversify the product lines.

Similarly, most of the manufacturing enterprises depend on expatriate managers employed for factory management. The national entrepreneurs and managers who have experiences in industrial management are still limited. Enterprises, however, cannot entrust expatriate managers with entire management no matter how they are capable.

Moreover, because expatriate managers provide their services only during a contract period, those enterprises hardly build up confident management systems and skills and marketing know-how based only on their expertise. Hence most of the existing industries, particularly small- and medium-scale enterprises, are vulnerable to any changes in markets and business climates as well as to competition with foreign competitors.

3.4.3 Productivity

The process-plant-based industry existing in Oman includes the oil refinery, copper smelting plant, cement plants and some types of food processing plants. In this type of industry, productivity largely depends on the existence of captive markets that can ensure steady plant operation with high capacity utilization. In Oman, most of the existing process plants except the oil refinery have fallen in low capacity utilization due to small domestic markets and keen competition in the GCC markets which have been the major markets for Omani exports.

The metal fabrication and assemble industry in Oman is still at an early stage of development. Most of the existing metal fabrication and assemble works use raw materials, intermediates and major components imported from abroad, since upstream industries as well as linkage industries are not developed yet. These works are equipped with small units of machinery and undertake a variety of metal fabrication works requiring low level of precision, on the basis of job orders in small scale. Hence, their productivity is poor. Captive markets for these industries are related to the oil and gas exploitation work and oil refinery, and there exists no assembly industry represented by electric, electronics and automobile industries which require a high level of quality and production control.

The light processing industries dominantly existing in Oman include those engaged in the manufacturing of various consumers' goods. Most of these industries undertake labor-intensive operation based on conventional technologies and expatriate labor, and using imported raw materials. Though labor costs paid for expatriate labor are much higher than those in South West Asian countries, productivity is relatively high because of efficient operation performed by skilled expatriate labor employed.

3.4.4 Capital resources available

The oil revenues have generated adequate capital resources to finance the public and private investments in all sectors up to the present. The government has provided private investors with interest-free government loans and also soft-term loans through the Oman

Development Bank (ODB) to promote private investments in the manufacturing industry. A substantial portion of the manufacturing industries has been established through private domestic investment, except for oil refinery, copper smelting plant and cement plants in the public sector.

The Omani private sector has ample financial capacities with relatively high financial savings enough to realize the investments needed for expanding the manufacturing industries, provided that these are small to medium in scale. Nevertheless, for the development of export-oriented industries, foreign investment will also play important roles like transfer of technologies, as well as enhancement of management and marketing. Towards this end however, intensive activities for foreign investment promotion would be needed.

The interest-free government loans and ODB's soft-term loans facilitate the development of small and medium industries in Oman. However, this industrial financing system is not capable of arranging project finance with syndication of foreign credits for huge industrial projects such as petrochemical and gas-based fertilizer projects. In order to promote such giant projects, the enhancement of the industrial financing institutions would be essential. Apart from this issue, the function of the existing financing system should be enhanced for efficient allocation of financial resources for industrial investments in the private sector.

3.4.5 Human Resources

The manufacturing industry did not contribute much to the employment of Omani labor force despite rapid growth of the labor demand to date. This is due to the scarcity of Omani labor force available to industries, since the number of Omani labor force is limited not to mention that majority of these labor force has no industrial training and discipline. It is predicted that the number of workable Omani labor force will substantially increase in the next ten years, so that an adequate number of national labor force will become available for the industries if appropriate education and vocational training are provided. It would be important to take appropriate measures for the development of human resources while establishing the system for encouraging the employment of these labor force by the industries.

3.5 Infrastructure and Institutional Support Relevant to the Industry

Oman has well developed internal road systems connecting major cities and industrial centers. A potential bottleneck lies in port facilities. The existing ports are small to accommodate large international commercial vessels, and therefore most of exports and imports are transported through Dubai, causing extra freight charges.

The strategic location of Oman allows the country to serve as a regional distribution center for the Gulf area allowing it to share this present role of Dubai in the future. To this end, location advantages must be maximized by upgrading the port facilities to meet increasing transport demand while establishing air routes to link the country with neighboring countries in the Middle East, Europe and Asia.

Electricity supply meets increasing demand with the set up of additional power plants being under construction or planning⁹. However, electricity cost charged in Oman is much higher than that offered in other GCC countries, although it is still lower than that charged in other regions.

Although the water supply is adequate to meet the requirements of the existing industries and their foreseen expansion, it would hardly cater to any new industry that will consume large quantity of water.

The government has facilitated the entry of industrial investments with the provision of fiscal incentives including exemption from import duties and income tax, while protecting the local industries with imposition of import duties on the competing imported items. In addition, the government has simplified or deregulated several administrative procedures and licenses to facilitate the establishment and operation of industrial units.

These institutional support as well as incentive systems can attract domestic and foreign investors to enhance industrial investments in Oman.

⁹ In 1992 the volume of power generated in a peak month was less than 80% of the estimated power generation capacity.



Table A2-1 Change in Investment on Manufacturing Sector

Sector	Unit	1975	1976-80	1981-85	1986-90	1991	1992
31 Food	R.O. '000	0.0	10,401.9	9,588.6	14,341.2	7,198.0	4,135.0
Beverages & Tobacco	Accumulated Total	0.0	10,401.9	19,990.5	34,331.7	41,529.7	45,664.7
32 Spinning, Weaving, Finishing Textiles & Leather	R.O. '000	0.0	941.0	104.5	12,889.7	2,421.0	3,154.0
	Accumulated Total	0.0	941.0	1,045.5	13,935.2	16,356.2	19,510.2
33 Wood & Wood Products including Furniture	R.O. '000	31.9	1,864.2	4,841.6	3,510.1	366.0	313.0
	Accumulated Total	31.9	1,896.1	6,737.7	10,247.8	10,613.8	10,926.8
34 Paper & Paper Products Printing & Publishing	R.O. '000	44.3	1,539.4	2,396.8	4,251.3	0.0	1,387.0
	Accumulated Total	44.3	1,583.7	3,980.5	8,231.8	8,231.8	9,618.8
35 Chemicals & Chemical Products, Products of Petroleum & Coal	R.O. '000	0.0	1,677.6	53,978.7	18,546.7	5,175.0	368.0
	Accumulated Total	0.0	1,677.6	55,656.3	74,203.0	79,378.0	79,746.0
36 Non-Metallic Mineral Products	R.O. '000	368.7	11,761.8	97,857.1	21,189.7	3,244.0	2,711.0
	Accumulated Total	368.7	12,130.5	109,987.6	131,177.3	134,421.3	137,132.3
37 Basic Metal Industries	R.O. '000	0.0	0.0	0.0	89,200.0	0.0	0.0
	Accumulated Total	0.0	0.0	0.0	89,200.0	89,200.0	89,200.0
38 Fabricated Metal Products	R.O. '000	25.9	2,389.1	7,479.1	10,140.2	1,144.0	976.0
	Accumulated Total	25.9	2,415.0	9,894.1	20,034.3	21,178.3	22,154.3
39 Other Manufacturing Industries	R.O. '000	0.0	0.0	0.0	398.8	12.0	30.0
	Accumulated Total	0.0	0.0	0.0	398.8	410.8	440.8
Total	R.O. '000	470.8	30,575.0	176,246.4	174,467.7	19,560.0	13,074.0
	Accumulated Total	470.8	31,045.8	207,292.2	381,759.9	401,319.9	414,393.9

Source: Statistical Year Book

Table A2-2 Distribution of Establishments in Manufacturing Sector by Size of Investment (1/3)

Sector Code	Total	Investment Size				
		>=100,000	>=75,000 & <100,000	>=50,000 & <75,000	>=25,000 & <50,000	<25,000
3111 Meat	2	1	0	1	0	0
3112 Dairy products	10	7	1	0	2	0
3113 Fruit/vegetable processing/canning	1	1	0	0	0	0
3114 Fish processing/canning	13	10	3	0	0	0
3115 Oil & fats	2	1	0	0	0	1
3116 Grain mill products	24	1	0	0	0	23
3117 Bakery products	91	4	6	13	9	59
3119 Cocoa chocolate & sugar	1	1	0	0	0	0
3121 Other food products	49	16	7	3	3	20
3122 Animal feeds	2	2	0	0	0	0
3134 Soft drinks & carbonated water	10	8	0	2	0	0
3100 Food & beverages	205	52	17	19	14	103
3212 Textiles	3	2	0	0	0	1
3221 Apparel	30	24	4	0	1	1
3240 Foot wear	1	1	0	0	0	0
3200 Textiles & leather	34	27	4	0	1	2
3311 Saw/ wood mills	584	8	5	8	13	550
3312 Wooden & cane containers	1	0	0	0	0	1
3319 Wood & cork products	1	0	0	0	0	1
3320 Furniture	173	6	1	1	6	159
3300 Wood & Wooden products	759	14	6	9	19	711

Table A2-2 Distribution of Establishments in Manufacturing Sector by Size of Investment (2/3)

Sector Code	Total	Investment Size				
		>=100,000	>=75,000 & <100,000	>=50,000 & <75,000	>=25,000 & <50,000	<25,000
3412 Containers, boxes of paper & paper board	5	3	1	0	1	0
3419 Other paper products	4	2	2	0	0	0
3420 Printing/ publishing	30	16	5	4	4	1
3400 Paper & paper products	39	21	8	4	5	1
3511 Chemicals	9	7	2	0	0	0
3512 Fertilizers & pesticides	3	2	0	0	0	1
3513 Syn. resins/ plastic materials	2	2	0	0	0	0
3521 Paints	4	4	0	0	0	0
3522 Drugs/ medicines	1	1	0	0	0	0
3523 Soaps, perfumes, cosmetics	9	5	0	2	1	1
3529 Other chemical products	3	2	1	0	0	0
3530 Petroleum refineries	1	1	0	0	0	0
3540 Other petroleum products	2	2	0	0	0	0
3551 Tyres & tubes	3	3	0	0	0	0
3560 Plastic products	11	9	0	2	0	0
3500 Chemicals & chemical products	48	38	3	4	1	2
3620 Glass	18	5	2	4	4	3
3691 Structural clay	1	0	0	0	0	1
3692 Cement, lime & plaster	5	4	0	0	0	1
3699 Other non-metallic mineral products	1,118	80	17	26	41	954
3600 Non-metallic mineral products	1,142	89	19	30	45	959
3710 Iron & steel	2	0	0	0	1	1
3720 Non-ferrous metals	2	2	0	0	0	0
3700 Basic metal industries	4	2	0	0	1	1

Table A2-2 Distribution of Establishments in Manufacturing Sector by Size of Investment (3/3)

Sector Code	Total	Investment Size				
		>=100,000	>=75,000 & <100,000	>=50,000 & <75,000	>=25,000 & <50,000	<25,000
3811 Cutlery, hand tool/hardware	3	0	0	0	0	3
3812 Metal furniture	20	2	0	0	0	18
3813 Structural metal products	157	13	6	9	7	122
3819 Fabricated metal products	350	10	7	10	16	307
3821 Engines & turbines	1	1	0	0	0	0
3822 Agricultural machinery	1	0	0	0	1	0
3824 Special industrial machinery	2	1	0	0	1	0
3829 Machinery & equipment	3	2	1	0	0	0
3831 Electrical industrial machinery	3	2	0	1	0	0
3833 Electrical appliances	2	2	0	0	0	0
3839 Other electrical appliances	3	2	0	0	1	0
3841 Ship building/ repairing	3	0	0	0	2	1
3843 Motor vehicles	2	2	0	0	0	0
3844 Motorcycles & bicycles						
3800 Fabricated metal products	550	37	14	20	28	451
3901 jewelry	8	1	0	1	1	5
3909 Other manufacturing	8	3	0	1	2	2
3900 Other manufacturing	16	4	0	2	3	7
4102 Gas mfr & distribution	2	2	0	0	0	0
Total	2,799	286	71	88	117	2,237

Source: MCI

Table A2-3 Outline of Supply and Demand Situation by Sub-sector

(Unit: R.O. '000)

	1993				H.S. sections for import/export	Industrial Classification Code for production
	Total import (A)		Re-export (B)	Import for domestic consumption (A-B)		
	Production (C)	Raw materials consumed (D)	Export (E)	Production for domestic consumption (C-E)		
	Total supply (A+C-D)		Total export (B+E)	Total domestic consumption (A-B+C-D-E)		
Food, beverages & tobacco	291,488		45,149	246,339	1 through 4	15
	88,703	61,033	95,358	-6,655		
	319,158		140,507	178,651		
Spinning, weaving, finishing textiles & leather	70,177		-1,670	71,847	8,11,12	18
	24,626	16,913	24,473	153		
	77,890		22,803	55,087		
Wood & wood products including furniture	17,945		212	17,733	9	20
	6,212	3,108	252	5,960		
	21,049		464	20,585		
Paper & paper products, printing & publishing	21,316		36	21,280	10	21 & 22
	14,235	7,529	1,223	13,012		
	28,022		1,259	26,763		
Chemicals & chemical products, products of petroleum & coal	124,524		11,794	112,730	6,7	23, 24 & 25
	279,445	174,148	18,363	261,082		
	229,821		30,157	199,664		
Non-metallic mineral products	25,943		887	25,056	13	26
	79,758	39,591	4,394	75,364		
	66,110		5,281	60,829		
Basic metal industries	183,526		-4,479	188,005	5,15	27
	25,859	16,057	44,184	-18,325		
	193,328		39,705	153,623		
Fabricated metal products	712,074		239,572	472,502	16,17,18	28, 29, 34 & 35
	37,924	18,748	243,915	-205,991		
	731,250		483,487	247,763		
Other manufacturing industries	134,859		5,853	129,006	14,19,20,21	36 & 99
	25,446	11,371	10,603	14,843		
	148,934		16,456	132,478		
Total	1,581,852		297,354	1,284,498		
	582,208	348,498	442,765	139,443		
	1,815,562		740,119	1,075,443		

[Notes]

1. Raw materials imported are assumed to have been consumed in the same sector.
2. Re-export value (B) is included in import value (A), but not included in export value (E) (export value (E) is that of locally manufactured goods only).



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