

## **CHAPTER 8**

### **PRODUCING SECTORS**



## **8.**

## **PRODUCING SECTORS**

This chapter highlights the achievements of the Fifth Development Plan in the agriculture, industry, electricity and construction sectors. It also deals with key issues that should be addressed during the Sixth Plan period, and the topics of Saudiization, economic efficiency and private sector opportunities. Finally, it shows the objectives, policies and programs of these sectors in the Sixth Development Plan.

### **8.1 AGRICULTURE**

#### **8.1.1 PRESENT CONDITIONS**

It has long been recognized that the importance of agriculture to the Kingdom extends beyond its contribution to national output alone. Apart from the strategic significance of increasing domestic food production for a growing population, the planned development of agriculture fulfills other important roles. It contributes to the diversification of the economy and a reduced dependence on oil as the main source of national income. It stimulates growth and employment in other economic sectors, through its demand for farm inputs and other agricultural services and through its supply of agricultural raw materials for the food industry. It raises the incomes and welfare of citizens in rural areas, thereby reducing migration to urban areas and contributing to balanced regional development. Finally, it plays an important role in maintaining the ecological balance through combating the process of desertification.

The expansion of agricultural production over the past fifteen years has been one of the most remarkable successes of the overall development effort in the Kingdom. The private sector responded positively to the range of support measures introduced by the government. Agriculture will continue to play an important role in the diversification of the economy, through expanding economic linkages with other sectors, which is an important element in the Kingdom's overall development strategy. Local manufacturing of fertilizers, pesticides and agricultural implements represents the backward linkages to the agriculture sector, while forward linkages comprise such activities as meat processing, the manufacture of dairy products, the preservation and packing of fruits and vegetables, and the manufacture of oils and fats.

Value added in agriculture rose from SR 22.7 billion in 1409/10 to SR 31.9 billion in 1414/15 (in current prices), while its average annual growth reached 3.1 percent in constant price terms, driven principally by improvements in labor productivity, which grew at an average annual rate of about 2 percent. By the end of the Fifth Plan period, agriculture's share of non-oil GDP had reached 10.9 percent. As indicated in Table 8.1, production of most commodity groups during the Fifth Plan period exceeded both population growth and their Plan targets, with relatively high growth rates achieved in

red meat, eggs, milk and fruits. Although the average annual growth rates of white meat, vegetables and fish production were below their Fifth Plan targets, they are considered as prudent nevertheless. The average annual decline in wheat production, however, at 3.8 percent, did not reach its targeted rate of 7 percent (Table 8.1).

**Table 8.1**

**Production of Basic Food Items in the Fifth Plan**

	1409/1410	1414/1415	Target Annual	Actual Annual
	'000 tons	'000 tons	Growth Rate (%)	Growth Rate (%)
Wheat	3,400	2,800	(7.0)	(3.8)
Red Meat	133	195	3.9	8.0
White Meat	276	295	6.0	1.3
Eggs	113	134	1.0	3.5
Milk	475	604	4.0	4.9
Vegetables	1,900	2,500	6.0	5.6
Fruits	848	1,088	4.4	5.1
Fish	52	62	8.0	3.6

( ) negative growth rate

Other factors contributing to the success of agriculture include the rapid development of basic infrastructure in different parts of the Kingdom (including agricultural roads).

### 8.1.2 KEY ISSUES

Although impressive progress has been made in agricultural production, a number of challenging issues have emerged which, if not addressed, could threaten the sustainable development of agriculture in the medium to long term. Some of these issues have been identified in previous development plans, although the priorities attached to each issue and the associated policy measures needed to address them may change from one plan period to the next.

#### **Gap between Demand for Animal Products and Local Natural Resource Endowments**

The growing demand for animal products, as a result of rising per capita incomes and changing consumer tastes, is reflected in average annual imports of SR 6.5 billion during the Fifth Plan. Not only has this growth in the demand for animal products exceeded the rate of growth in population, but this trend is expected to continue into the future also.

Only 8 percent of the Kingdom's 168.5 million hectares of natural grazing land (75 percent of the total land area of the Kingdom) can be classified as top grade, while output from grazing land is constrained by the predominantly dry environment. Total annual fodder production is estimated at around 16 million tons, enough to meet the needs of 1.7 million animal units (one animal unit is equivalent to five goats or sheep, or one camel). The number of animal units is estimated at 2.5 million in 1414/1415, whose feed requirements already exceed the fodder production capacity of the domestic resource base, so that around 5 million tons of barley had to be imported annually by the end of the Fifth Plan period. As the number of animal units in the Kingdom is expected to reach about 3.2 million by the end of the Sixth Plan (1419/1420), a widening gap will emerge between domestic production and consumption of animal feed. However, if the Kingdom were to attempt to produce barley in sufficient quantities to meet this growing demand, about 1 million hectares of barley (around 70 percent of the total cropped area) would be needed. Such an outcome is not compatible with the Kingdom's resources potential, because of the scarcity of water and the imbalance this would cause to cropping patterns. During the Sixth Plan, therefore, the government price and other support mechanisms will be targeted towards limiting local barley production to a maximum of 1.5 million tons a year, while the importation of barley by the GSFMO will continue.

#### **Spatial Expansion and Demand for Limited Water Resources**

Contrary to the stated policy to distribute agricultural land only in areas with high-potential renewable water resources, 396,000 hectares were distributed during the first three years of the Fifth Plan, while the land allocated during the whole Fifth Plan period is estimated to be about 807,000 hectares. Most of this land is in areas that depend on non-renewable water. Total holdings of agricultural land over the Fifth Plan period, therefore, rose from 3.1 million hectares to 3.9 million hectares, of which 1.5 million hectares (or 38 percent) were under crops. The water requirements for cultivating 1.5 million hectares exceed the available water resources in the long term. Thus, it is of paramount importance to abide by this stated policy during the Sixth Plan, while taking into consideration the demand for food.

Table 8.2 shows the projected demand for the main food categories in the Sixth Plan. The demand for vegetables and fruits is expected to increase at an average annual rate of 6.7 percent and 5.6 percent respectively, while the demand for meat is expected to increase by 4.5 percent annually and fish at 4.3 percent.

**Table 8.2**  
**Projected Demand for Selected Food Items during the Sixth Development Plan**  
(‘000 tons)

	1414/1415	1419/1420	Annual Average Growth -- %
Red meat	402	501	4.5
White meat	541	674	4.5
Eggs	107	133	4.5
Milk (fresh)	604	734	4.0
Vegetables	2205	3050	6.7
Fruits	1536	2022	5.6
Fish	101	125	4.3

### 8.1.3 SAUDIIZATION

Total manpower in the agriculture sector amounted to 377,000 by the end of the Fifth Plan. Although most administrative positions have been filled by Saudis, the majority of technical and professional positions are still filled by non-Saudis.

Agricultural employment is planned to increase at an average annual rate of one percent during the Sixth Plan and the additional jobs created are expected to be filled by new entrants to the labor market. The extent to which Saudis will avail of these opportunities, however, will depend upon the prevailing wage differentials between Saudi and non-Saudi manpower and the availability and effectiveness of training for Saudi new entrants to the labor market. The MOAW and other related agencies will exert their utmost efforts to upgrade the skills of Saudi manpower in this sector through intensive training programs. In particular, maximum efforts will be made in training Saudi professionals, technical staff and skilled labor. The manpower training and development programs conducted by other related government agencies contributed much to improved labor productivity during the Fifth Plan.

Within the MOAW, the GSFMO and the SAAB, Saudis account for about 81 percent of all manpower. However, this percentage is expected to rise to 92 percent by the end of the Sixth Plan. This will be achieved mainly through Saudiization and not by increasing the number of public sector jobs.

### 8.1.4 PRIVATE SECTOR OPPORTUNITIES

The achievements of the agricultural sector have been realized through the effective participation of the private sector in response to the agricultural policies and supportive measures introduced

by the government, in addition to the effectiveness of the executive government agencies, such as the MOAW, which rendered very important services in the field of agricultural production through agricultural research services and development programs and the MOAW's land distribution based on a comprehensive survey of agricultural resources and potential. The agricultural loans program of SAAB, other government support measures and incentives, and the use of advanced irrigation and cultivation techniques by farmers also played an important role in the successful development of agriculture.

The private sector will continue to play a key role in all agricultural activities, including investment, production and marketing. At the same time, the government will undertake a set of programs which will include agricultural research and services, the provision of credit facilities, and the promotion of technology transfer in the agricultural sector. The government will also continue to support and encourage the private sector's agricultural activities through a package of incentives.

#### **8.1.5 DEVELOPMENT STRATEGY**

The Sixth Plan strategy for the development of agriculture will be achieved through the following objectives, policies and programs.

##### **8.1.5.1 Objectives**

Development of the agricultural sector during the Sixth Plan will be guided by the following major objectives:

- To contribute to the security of the country's food supply through the diversified production of cereal, vegetable, animal and fish products that are appropriate to the Kingdom's available natural resources and achieve the optimum long-term use of water;
- To increase and diversify agricultural production through the application of large-scale production technology that utilizes renewable water sources and modern irrigation methods most efficiently;
- To achieve satisfactory growth in the yields of major crops and animal and fish products, so as to minimize costs and reduce water consumption per unit of output, particularly those products where the Kingdom possesses promising resources and a comparative advantage (such as fish production);
- To make a significant contribution to the creation of job opportunities for rural citizens, and to improve their welfare;
- To achieve satisfactory growth in labor productivity and realize high Saudiization rates in agriculture;
- To raise economic efficiency in the agricultural sector in general.

#### **8.1.5.2 Policies**

The following major policies will be implemented in the agriculture sector during the Sixth Plan:

- Investment will be encouraged in large agricultural projects that depend on renewable water resources, use modern irrigation systems, and consume low quantities of water;
- Land will be distributed in areas with large quantities of renewable water resources; areas with critical ground water depletion rates will be identified; and regulations will be introduced on appropriate water pumping rates;
- The provision of selected agricultural inputs and other support services to farmers will be continued, including agricultural extension services and the distribution of improved seeds and seedlings;
- Marketing channels for small farmers will be improved through the provision of storage facilities for perishable vegetables, while methods to promote private marketing channels will be studied;
- Training will be provided to upgrade the skills of Saudi manpower in different specializations;
- Within a framework of comparative advantage, international competitiveness and the optimal utilization of resources, diversification of the agricultural production base will be encouraged, through increased local production of vegetables and fruits in greenhouses and the expansion of the fishing industry using advanced technology;
- Research on problems specific to the Kingdom's agriculture will continue to be supported, (particularly advanced technology fisheries), with a view to increasing efficiency in resource utilization and enhancing coordination between national, regional and international scientific institutions on the one hand and the concerned executive agencies on the other;
- The collection of data and dissemination of information concerning agricultural resources, prices, production and costs of agricultural commodities will be continued, and the basic data and information base developed;
- The private sector will be encouraged to establish animal feed factories which use imported raw materials, so as to achieve a prudent level of meat production at a relatively competitive cost and with the optimal utilization of local raw materials;
- Joint studies with the GCC states will be conducted to promote cooperation in the production, storage and marketing of the main food items, including fish products, and feasible related projects will be implemented;



- The flora, fauna and fish resources of the Kingdom will continue to be protected and developed in order to maintain the ecological balance.

### **8.1.5.3 Programs**

The following programs represent a coherent framework for implementing agricultural development policies during the Sixth Development Plan:

*Agricultural Research:* This program aims at improving crop and livestock production, range management, forestry and fisheries, and at achieving the optimal utilization of resources, including the adoption of appropriate advanced water use technologies.

*Agricultural Services:* This program will provide agricultural extension services, improved seeds, animal vaccines, and agricultural and veterinary quarantine services.

*Agricultural Loans and Subsidies:* This program will provide interest-free loans for the establishment of agricultural infrastructure and for financing investment and production activities, as well as providing subsidies for the purchase of agricultural machinery and equipment, particularly with a view to raising local fruit and vegetable production through the use of greenhouse technology.

*Agricultural Development:* This program deals with the development of range and forestry management, as well as the construction and operation of irrigation and drainage facilities to assist small farmers.

*Economic Studies and Statistics:* This program aims to collect and update information and data about agricultural production, including the establishment of an agriculture data bank and the preparation of marketing, economic and social studies pertaining to farmers, and the publication of such studies. The program will also include surveys of animal, fishery and forest resources and the implementation of a comprehensive agricultural census every ten years.

*Grain Silos and Animal Feed Factories:* This program aims at maintaining adequate grain storage capacity to cover local consumption of wheat, barley and other grains, with a strategic reserve equivalent to six months' consumption to meet emergency needs, and including the storage of raw materials for animal feed plants in cooperation with private sector factories.

*Technical Cooperation and Technology Transfer:* This program aims at enhancing the efficiency of the agricultural sector and improving its performance through the adoption of appropriate advanced science and technology, in cooperation with specialized regional and international organizations.

In general, the implementation of these programs will require coordination between the concerned agricultural agencies such as MOAW, GSFMO, NCWCD, and HIDA, as well as coordination between other ministries and agencies such as MOFNE and MOP. Some programs include projects that will require a high level of coordination amongst many government agencies.

#### 8.1.6 SIXTH PLAN TARGETS

The Sixth Plan aims at achieving an annual average real growth rate in value added by the agriculture sector of 3.1 percent. Accordingly, agriculture's share of non-oil GDP is expected to be about 9.9 percent by the end of the plan period. Table 8.3 shows the targeted average annual growth rates for the production of basic food items during the Sixth Plan period. These rates are higher than the expected rate of population growth for the same period. They reflect the expected improvements in productivity that will result from the effective implementation of government policies and programs and the expected continued growth in private investment in agriculture.

**Table 8.3**  
**Growth Targets of Basic Food Items in the Sixth Development Plan**

	<b>Production in 1414/1415</b> <b>'000 tons</b>	<b>Annual Average Growth Rates</b> <b>in the Sixth Plan ( % )</b>
Red meat	195	4.0
White meat	295	6.0
Eggs	134	5.0
Milk (fresh)	604	4.0
Vegetables	2500	6.0
Fruits	1088	5.0
Fish	62	10.0

Wheat production is expected to decline during the Sixth Development Plan so as not to exceed local consumption at the beginning of the second year of the Sixth Plan. Efforts will be concentrated on the production of high value crops requiring less water but utilizing capital intensive techniques that will raise labor productivity in the agriculture sector.

## 8.2 INDUSTRIAL SECTOR

### 8.2.1 PRESENT CONDITIONS

Successive development plans have stressed the importance of industrialization to the achievement of the Kingdom's objectives: to diversify its economic base; to reduce its dependence on the production and export of crude oil; to increase the private sector's participation in the development process; to create new job opportunities; to develop the national manpower resources; and to establish a solid technological base.

The current structural features of the Kingdom's industrial sector were shaped in the earlier stages of development, which saw the emergence of three distinct sub-sectors: the *petrochemicals* industry constitutes the cornerstone of the Kingdom's industrial development; the *oil refining* sector adds value to the crude oil resources and enhances industrial exports; while the *other manufacturing* sub-sector is composed of a large number of factories that produce a broad range of products. Most industrial activity is undertaken by the private sector. At the same time, a number of government agencies are responsible for implementing industrial development policies and programs: the Ministry of Industry and Electricity (MIE), the Saudi Consulting House, the Royal Commission for Jubail and Yanbu, and the Saudi Industrial Development Fund (SIDF).

The joint efforts of the public and private sectors have resulted in considerable achievements by the industrial sector in the Fifth Plan period, as the average annual growth rate reached 4.3 percent for the sector as a whole, with the non-oil industries growing at the average annual rate of 2.2 percent and the oil refining industries growing by 7.5 percent annually on average. By the end of the Fifth Plan, the industrial sector's contribution to non-oil GDP had reached 13.1 percent, of which petrochemicals accounted for about 10 percent, oil refining for 43 percent and other manufacturing for 47 percent.

Over the Fifth Plan period, SABIC's total production capacity of petrochemicals, minerals and fertilizers increased by about 7.3 million tons to over 20 million tons. Between the first year and the fourth year of the Fifth Plan, when its sales reached SR 12.4 billion, SABIC's total production of petrochemicals and minerals rose by 31 percent to 17.1 million tons, while its exports rose by 19 percent to about 8 million tons. This impressive performance was achieved in adverse market conditions of declining world demand and prices, the continuation of customs barriers against Saudi petrochemicals in some markets, and a world surplus of production capacity in some basic petrochemicals.

During the Fifth Plan period, PETROMIN's oil refineries were incorporated into Saudi ARAMCO, which, because of its experience and world reputation in this field, will undertake all refining and marketing activities within the Kingdom. Production of refined petroleum products exceeded 548.8 million barrels in 1413/14.

In the *other manufacturing* industries, 477 new factories were established in the Fifth Plan period, representing a total investment of SR 13 billion, and the SIDF provided loans amounting to SR 8.5 billion for 258 industrial projects.

The two industrial cities at Jubail and Yanbu are now ready to accommodate more new industrial projects. The number of factories at both cities has reached 21 for basic industries, 12 for secondary industries and 112 for light and supporting industries. The total area of the Kingdom's eight industrial cities has reached 32 million square meters, while occupancy rates for industrial projects have risen to 91.5 percent of available space.

The Fifth Plan period also witnessed some administrative developments, such as the creation of the Exports Department, the Investment Development Unit and the International Relations Department at the Ministry of Industry and Electricity. In addition, the Exports Development Center has been established at the Council of Saudi Chambers of Commerce and Industry. Some amendments have also been made to the Foreign Capital Investment Regulation, while support was extended to local factories in the form of a 30 percent reduction in the prices of liquefied gas from the lowest world price.

Within the framework of the Economic Offset Program, 8 agreements were concluded with the British and French governments and with some major American companies specialized in the aviation, electronics and other high technology industries. As a result of implementing the Economic Offset Program's agreements, it is expected that joint investments will reach about SR 30 billion and that 9,000 jobs will be created. The Economic Offset Program concentrates on the following high technology industries: the aviation and space industries, communications and electronics, petrochemicals, the medical equipment and pharmaceutical industries, environmental protection, a range of specialist spare parts and the food industries. The overall aim of the program is not only to transfer the available technology, but also to raise the overall level of quality, profitability, exports, employment and training of Saudi nationals, and generally to exploit the Kingdom's comparative advantages. In general, the Economic Offset Program's projects entail the joint participation of the foreign and Saudi partners.

By end of the Fifth Plan, the Offset Program has some notable achievements. Nine joint companies have been established, of which five are in operation and four are at the start-up stage and are expected to begin operations in the first year of the Sixth Plan. The total joint investment in these companies amounts to SR 2,435 million. There are also three companies in the process of being established, with capital of SR 589 million, while 16 projects are being studied.

The Sixth Development Plan will continue with these efforts, thereby confirming that the formation of a strong and competitive industrial sector lies at the very heart of development in the Kingdom. In this regard, the Sixth Plan focuses on the challenges that lie ahead and on removing the constraints that might hinder the further progress of the industrial sector.

### **8.2.2 KEY ISSUES**

The industrial sector in the Kingdom faces a number of key issues which need to be addressed in order to achieve the industrial development objectives and to increase the sector's contribution to GDP. The most important of these issues are:

#### **Specialization and Diversification**

The structure of industry in the Kingdom is characterized by specialization in the oil refining and petrochemicals industries. These industries have large production capacities and together they account for about half of the industrial sector's GDP contribution and more than 60 percent of industrial investment. Notwithstanding the comparative advantages enjoyed by these industries, however, the Kingdom's progress towards a more advanced stage of industrialization will require a more diversified industrial structure. Thus, the long term challenge facing Saudi industry is to develop and specialize in other capital- and energy-intensive industries in addition to oil refining and petrochemicals.

#### **Petrochemicals Industry and International Competition**

A significantly improved performance can be expected from the Kingdom's expanding petrochemicals industry in response to growing demand for petrochemicals in local, regional and international markets. With several new producers entering the petrochemicals industry, however, particularly in the developing countries, and the likelihood of continued surplus production capacity, sharp competition in the international market can be expected in the Sixth Plan period. Thus, SABIC must continue to study local and world market conditions closely and to adopt flexible marketing strategies that are consistent with market needs and are supported by its high production capacity and wide range of products. At the same time, the pressure of competition in international markets may prompt more international companies to establish new joint ventures in the Kingdom and SABIC to consider establishing joint ventures with the oil refining industry that provides feed stock for its petrochemical projects.

#### **Industry and the Environment**

Industry is often linked with its adverse impact on the environment, as it consumes and depletes natural resources, particularly non-renewable resources, to meet its need for energy and raw materials. Furthermore, industrial activities are normally associated with air and water pollution from gas emissions and industrial waste. Such waste is often generated from the use of technologies that have little consideration for the environment and its absorptive capacity, and because appropriate environmental regulations either do not exist or cannot be enforced.

In the Kingdom, positive steps have been taken to control the relationship between the environment and industrial growth. Examples include, but are not limited to, the achievements of the

Royal Commission for Jubail and Yanbu in applying environmental standards. These achievements won international prizes for the excellent environmental performance of SABIC and Saudi ARAMCO factories in the two industrial cities at Jubail and Yanbu.

The Sixth Development Plan emphasizes the fact that industrial growth targets will be pursued without prejudice to the rights of future generations to a clean environment and the availability of natural resources. This matter requires the generalized implementation of environmental impact evaluations for all industrial projects, from the initial feasibility studies to the selection of technologies that do not pollute the environment or damage natural resources, the improvement of operation and maintenance procedures in the industrial production process, concentration on material-recycling projects, and addressing the adverse environmental impacts from existing industries before they grow any larger.

#### **Ability to Develop Industrial Technology**

The Kingdom's industrial development has relied on advanced technologies from the industrialized countries to meet its growing needs, while clearly recognizing the importance of assimilating such technology quickly and reducing the role of manual labor, thereby raising productivity. The importance of improving the quality of products, reducing costs and enhancing the competitiveness of national industries has also been recognized. In the next stage of development, the capacity of national industries to assimilate new technology and production techniques must be further developed, so that they can use their accumulated experience to create and develop their own technologies and thereby reduce their dependence on imported technology on the one hand, and overcome the difficulties in obtaining such technology, on the other.

#### **Industrial Marketing**

Although national industrial products have many positive features, such as their high quality and reasonable prices, they are encountering severe competition in both domestic and international markets. It is evident that marketing activities in some industrial establishments are not given as much attention as production activities. In the coming stage of development, greater attention to the marketing of industrial products will be necessary.

#### **Industrial Information and Data Bases**

The success of industrial projects, either at the preliminary planning and study stage or at the actual production stage, depends on the availability of information and statistics on markets, technologies, labor, production capacities, investments and costs of production. The development of industrial information systems will become increasingly important in the next stage of development. This will require the continuous encouragement of industrial companies to establish their own integrated information systems which, at the same time, could be linked within a national industrial information network.

### **Role of Incentives in Industrial Development**

The investment incentive package provided by the government has supported industrial growth in the Kingdom. The progressive liberalization of international trade, combined with the need to maintain an effective system of incentives for industrial development, mean that an extensive review of the existing incentive system may now be needed. Furthermore, priorities need to be established so that incentives are directed more specifically towards those industrial projects where support and protection may be needed in the short to medium term, but whose longer term economic potential is firmly established, and is based on the existence of comparative advantage, the manufacture of high quality products, the utilization of advanced technology and the establishment of linkages with existing industries and other sectors of the national economy.

### **Support for Small Industry**

Despite their limited role in the industrial sector's contribution to GDP and their weak links with other manufacturing industries, small industries constitute a large proportion of all manufacturing establishments in the Kingdom. However, small industries do not enjoy the range of incentives provided by the government to large-scale projects. Furthermore, no single specialized government department or agency is responsible for supporting small industries and alleviating their difficulties in obtaining the necessary finance for expansion.

Small industries need further encouragement to play a more effective role in the development of the industrial sector. In this respect, the possibility of establishing specialized institutions to support small industries and to help them overcome their technical, administrative and financial difficulties, will be explored. Wherever possible, programs will be developed to increase the contribution of small industries to the demand of existing larger industries for final and intermediate goods, to attract small investors, to provide job opportunities for Saudi nationals and to diversify the industrial base of the Kingdom. In addition, an Industrial Register System will be created at the Ministry of Industry and Electricity.

### **Promotion of Industrial Exports**

With the exception of petrochemicals and refined oil products, exports of manufactured goods still account for only a small part of the Kingdom's total exports, despite the attention devoted to this subject by both government and industrialists. Intense competition in global markets presents a special challenge to all industrial exporters, as foreign markets expose companies to unfamiliar regulatory, legal and financial environments, entailing considerably increased risks. Thus, it is not surprising that such companies prefer to sell in the home market first, only entering export markets when this is necessary to support their existing business. This is particularly true when the domestic market has offered sufficient growth opportunities up till now.

Specific policies are needed to address this situation, including the design and implementation of institutional measures to encourage the establishment of private companies and organizations specialized in export development and promotion techniques, the expansion of export credit financing facilities for industrial exporters, and more participation at international fairs.

### **8.2.3 SAUDIIZATION**

In the Fifth Plan period, government agencies in the industrial sector made considerable progress in increasing the number of Saudis working in their departments. Saudi nationals accounted for 91 percent of total employment in the Ministry of Industry and Electricity, 98 percent in the Royal Commission for Jubail and Yanbu, and 71 percent in the Saudi Consulting House. Such results indicate the overall success of Saudiization policies and the effectiveness of the training programs and activities undertaken by these agencies, which are expected to continue to achieve their objectives with respect to national manpower development in the years to come.

On the other hand, with the exception of the larger, more advanced, capital-intensive industries such as petrochemicals, Saudi industry's dependence on foreign manpower is likely to remain a feature of industrial development for some time, due to an insufficient supply of national skilled manpower and the low wages of non-Saudi workers, which contribute greatly to the competitiveness and profitability of labor-intensive industrial projects.

The Sixth Development Plan assigns the highest priority to the employment and training of Saudi nationals in private industry, where they now represent only a small percentage of total employment, particularly in production and technical jobs. This will require joint actions by the government and the private sector, and more intensive adoption of measures to encourage Saudi nationals to work in manufacturing industry. Saudi youths also need to be attracted into technical and industrial training, so that they can become qualified industrial workers. At the same time, the private industrial sector will be urged to fulfill its responsibilities towards achieving the national objectives of Saudiization. Industrial manpower policies cannot succeed without the full participation and support of the private sector. In this context, it may be necessary to provide more incentives to those factories that employ or offer regular training programs to a high percentage of Saudi nationals.

### **8.2.4 ECONOMIC EFFICIENCY**

Efficiency improvements in the industrial sector are closely linked to the development of skilled manpower, the utilization of modern technology and the development of management information systems. In this respect, the efforts of government agencies in the industrial sector have had satisfactory results, which are expected to be maintained or even improve in the future. Thus, the MIE, the Saudi Consulting House and the Royal Commission for Jubail and Yanbu will aim to use their available resources with maximum efficiency and commensurate with their growing responsibilities.



In the basic industries, the production capacity utilization rates, the sales/production ratios and the high labor productivity of SABIC companies compares well to international standards for these industries. During the Sixth Plan period, SABIC will continue to consolidate its progress in these areas, after the production capacity expansions undertaken in the later years of the Fifth Plan.

In the case of some manufacturing industries, measures are needed to reduce the demand for labor by raising productivity, and to improve production methods by raising the level of technology used. Other industries are not operating at full capacity because of their marketing deficiencies. In future, it will be necessary to review the performance of such industries and to study the main factors constraining productivity growth, so that appropriate methods for overcoming marketing obstacles can be adopted and overall competitiveness improved.

At present, some industrial cities are operating below capacity, while others -- such as those in Riyadh, Jeddah and Dammam -- are facing capacity constraints. The areas assigned for secondary industries in Jubail and Yanbu are currently under-utilized, even though many of these industries operate in other locations. In the Sixth Plan period, efforts will be made to achieve a better balance in the utilization of space in the industrial cities, so that an optimal geographic distribution of industries and the highest possible levels of efficiency can be achieved.

In general, the achievement of the Sixth Plan's growth targets for the industrial sector will require a combination of investment in new production facilities and the more efficient utilization of existing capacity.

#### **8.2.5 OPPORTUNITIES AVAILABLE FOR THE PRIVATE SECTOR**

To a large extent, the task of industrial development is the responsibility of the private sector, with the government's role being confined mainly to establishing an appropriate institutional framework and formulating policies to support the industrialization process. Thus, the government aims to guide the deployment of private resources rather than making industrial investments directly itself, except in a small number of cases where the investment needs are very large and the risks high.

Because the oil sector is of paramount importance to the Saudi economy, government agencies and companies play a central role in the oil refining industry. However, some oil refineries are joint ventures with foreign partners, while other private sector companies are involved in the production of lubricants. In the future, a greater private sector role in the petroleum industry may be possible.

Although the government is the majority shareholder in SABIC, it is anticipated that conditions prevailing in the Sixth Plan period will make the progressive privatization of SABIC possible, without adversely affecting the company's future plans. In this respect, initiatives to privatize some government-owned industrial companies will be one of the major features of the Sixth Plan period.

At the same time, government agencies will continue to perform their role of attracting more private sector investment into manufacturing industry. The Ministry of Industry and Electricity will continue to support industrial development and the diversification of the industrial base, through the issuing of new industrial licenses, the provision of needed infrastructure in the industrial cities, and the preparation of some industrial studies. The SIDF will continue to extend loans to industrial projects according to specific lending criteria, while the Saudi Consulting House will provide industrial investors and businessmen with technical, economic and management consulting and research services. The Royal Commission for Jubail and Yanbu will continue completing the infrastructural facilities and services projects in Jubail and Yanbu industrial cities and follow-up the operation and maintenance of such projects. It will also acquaint potential investors, both domestic and foreign, with available investment opportunities to establish various types of industries and services in the two cities.

The private sector will be called upon to exploit the favorable investment climate provided by the government and to engage in activities that will accelerate the pace of industrial development towards new horizons. Thus, the private sector is expected to invest in new industries that utilize modern technology and generate high levels of value added, in addition to expanding its investments in import substitution and export-oriented industries, including basic, supporting and downstream metal industries, and basic and intermediate petrochemicals.

#### **8.2.6 DEVELOPMENT STRATEGY**

The industrial development strategy will be implemented through the following objectives, policies and programs.

##### **8.2.6.1 Objectives**

The major objectives for industrial development in the Kingdom during the Sixth Development Plan are:

- to increase the industrial sector's contribution to GDP and the diversification of the national economy;
- to expand industrialization based on locally available raw materials and to diversify the industrial structure through more intensive development of upstream and downstream industries;
- to expand the economic linkages between the industrial sector and other producing sectors, particularly agriculture and mineral resources;
- to increase the industrial sector's contribution towards meeting the local demand for consumer and capital goods through developing economically feasible import substitution industries;

- to increase the industrial sector's contribution to the diversification of exports;
- to create new job opportunities for Saudi citizens and to replace non-Saudi manpower with Saudis.

#### **8.2.6.2 Policies**

The following policies will be implemented by government agencies to achieve these objectives:

- Encourage Saudi industries to develop their own capabilities in industrial studies, research and development, particularly in capital-intensive industries;
- Continue conducting comprehensive periodical reviews of the institutional policies, administrative measures, incentives, lending policies, licensing and customs duty exemptions, in order to increase industrial investments by the Saudi and GCC private sectors, and adopt the necessary measures to deal with unfair competition;
- Encourage the balanced diversification of industrial activities, with emphasis on horizontal and vertical expansion in petrochemicals and the development of industries with linkages to other economic sectors;
- Support and encourage the transfer of modern technology in joint-venture industrial projects through the foreign capital investment regulation and the Offset Programs;
- Continue establishing industrial cities in locations with favorable growth potential, and expand the capacity of existing industrial cities where infrastructure is coming under heavy pressure;
- Continue the completion of infrastructural facilities in the industrial cities of Jubail and Yanbu to meet the expected increase in demand;
- Continue improving the quality and analysis of industrial statistics and information, and the preparation of economic indicators, through industrial surveys;
- Conduct studies on investment opportunities for the private sector;
- Continue the development of national manpower particularly with respect to the technical skills needed in modern industry;
- Encourage industrial companies to prepare advanced training programs for periodically upgrading the technical skills of Saudi workers, and adopt necessary measures to support factories where a high percentage of technical employees are Saudis;
- Improve the production capacity utilization rates of existing factories and raise the economic efficiency of industrial enterprises;

- Develop the necessary measures and regulations to support small industries and study the possibility of establishing an agency with responsibility for supporting their development;
- Encourage greater concentration on marketing and market research, through more emphasis on the study of market conditions, competitor behavior, advertising, after-sales service, and the development of export marketing techniques;
- Deepen the concept of environmentally friendly industrial development and its impact on present and future generations.

### 8.2.6.3 Programs

The following major programs will be implemented during the Sixth Plan:

**Petrochemical Industries:** This program aims at the optimal utilization of feed stocks and energy for expanding existing production capacities in primary, intermediate and final petrochemical industries and downstream industries. It also aims at the addition of new products to meet local, regional and international market needs, the development of existing markets and the search for new markets in order to generate maximum economic returns.

**Basic Metal Industries:** This program aims at expanding the existing production lines of the basic iron and steel industries, and studying the feasibility of establishing other energy-intensive basic metal industries, commensurate with market demand and in coordination with other GCC countries to avoid unnecessary competition.

**Industrial Cities and Infrastructure:** This program aims at the completion of infrastructure and the provision of services and utilities in the existing industrial cities, as well as the establishment of new industrial cities and the expansion of some existing ones. Within this program, the Royal Commission for Jubail and Yanbu will expand the capacities of the infrastructure, utilities and services in the two industrial cities, in line with the requirements of industrial development and the expected population growth in the two cities.

**Other Manufacturing Industries:** This program aims to strengthen the manufacturing sector by offering credit facilities for the establishment and expansion of projects, as well as the improvement of existing operations. It also covers the provision of advisory services to factories for the development of production methods and quality improvement techniques. The identification of investment opportunities in small and medium-sized industries in the Kingdom is also included as part of this program.

**Industrial Investment:** This program will acquaint investors at local, GCC, Arab country and international levels, with the investment opportunities available in import substitution and export-oriented industries, through the preparation of initial investment profiles for feasible projects.

**Industrial Studies, Research and Development:** This program will encourage the research and development activities of existing industries and carry out industrial research and studies. It will also develop the information systems required for industrial sector development.

**Industrial Exports:** This program aims at encouraging and developing export-oriented industries through the establishment of more private companies specialized in international marketing techniques, the preparation of studies for the promotion of Saudi industries in international markets, the study of foreign trade regulations, the adoption of export financing methods and participation at international fairs.

**Manpower Development:** This program aims at the development and training of Saudi industrial manpower, at increasing the number of Saudi workers employed in industry and improving their efficiency, and at increasing Saudiization in all specialist fields through appropriate training.

**Privatization of Industrial Companies:** This program will study the possibility of privatizing industrial companies owned by the government, and will include a specific schedule that takes into account the social and economic impacts of privatization.

#### **8.2.7 GROWTH TARGETS DURING THE SIXTH PLAN**

The industrial sector as a whole is expected to grow at an average annual rate of 4.9 percent during the Sixth Plan, with petrochemical industries growing at an average annual rate of 8.3 percent, oil refining at 3.9 percent and other manufacturing at 4.9 percent.

### **8.3 ELECTRICITY**

#### **8.3.1 PRESENT CONDITIONS**

Electricity is a basic source of socioeconomic development and is considered as a distinguishing feature of economically advanced countries. As a clean form of energy with a high degree of flexibility and ease of transmission, distribution and use, electricity constitutes a basic input to all sectors of the economy and is a primary factor for enhancing economic productivity and improving the standard of living and quality of life. Over the course of the first five development plans, substantial efforts have been made by the government to extend the benefits of electricity to all sectors and regions of the Kingdom.

During the Fifth Plan, all major indicators of the electricity sector witnessed notable progress (Table 8.4) and, in some cases, exceeded the plan targets as a result of unforeseen developments that emerged during the plan period. Electricity was provided to 559,000 additional customers, bringing the overall electrification rate to 83 percent of the population in 1414. Electric energy consumption

grew at an average annual rate of 7.7 percent between 1409 and 1413, thus exceeding the growth of GDP. The non-coincident peak load grew at an average annual rate of 7.9 percent over the same period, reaching over 15,707 megawatts in 1413/14, while total electricity consumption per residential customer grew at an average annual rate of 3.6 percent.

**Table 8.4**

**Main Electricity Indicators in the Fifth Development Plan**

	1409/10	1413/14 Actual	1414/15 Estimate	Average Annual Growth (%) 1409/10 - 1413/14
Total consumption ( Million Kwh )	55,201.3	74,171.0	79,250.5	7.7
Peak load (MW)	11,575.2	15,706.6	17,227.8	7.9
Total customers ('000)	2,259.3	2,686.4	2,817.9	4.4
Total Employees	27,409.0	26,663.0	26,912.0	(0.7)
Percentage of Saudis (%)	54.1	60.1	60.6	2.7
Average total consumed energy per residential customer (Kwh)	28,469.0	32,741.0	33,231.0	3.6
Average peak load per customer (kW)	5.1	5.8	6.0	3.3
Average Customers per employee	82.4	100.8	104.7	5.2

( ) negative value

**8.3.2 KEY ISSUES**

A number of issues are constraining the future development of the electricity sector and must be addressed in the Sixth Plan period.

**Finance:** The financial position of the autonomous electricity companies lacks proper balance, as reflected in their unusually high debt to capital ratios and low capital/asset ratios, as well as their high accumulation of outstanding sales and other proceeds. This condition will limit the ability of these companies to meet their future responsibilities efficiently and effectively, and particularly their ability to make use of the financial markets in meeting their future investment requirements, or to continue improving their productivity. Comprehensive financial and administrative restructuring of the industry is now an urgent necessity.

**Electricity Tariffs:** The reduction of electricity prices leads to an increase in the demand for electricity because low prices do not induce rational consumption patterns and reduce the effectiveness of the tariff structure as a demand management tool. Therefore, it is imperative to review the electricity tariff structure and its level in order to use it as an effective demand management tool and to rationalize consumption, thereby ensuring the continuity of electrical energy supply and the development of electricity services, and to focus on energy conservation, reliability, efficiency and demand rationalization.

**Specifications and Standards:** Each of the major electricity companies employs its own specifications, standards and procedures which differ from those of the other companies. This leads to an unnecessary rise in costs. It is important, therefore, that unified standards, specifications and procedures be developed at the overall sector level in order to upgrade efficiency, enhance productivity and rationalize the supervisory and regulatory functions of the concerned government agencies. Necessary actions are now needed to achieve this objective as soon as possible.

**Fuel:** The economic development and operation of the electric power generation plants depends to a large extent on the relative prices of the various available fuels. In this respect local fuel prices are not conducive to optimal investment and operation decisions, due to the fact that these prices are inconsistent with world market prices. For example, in contrast to most countries where diesel prices are highest, the price of heavy fuel oil in the domestic market exceeds that of both crude oil and diesel oil, while the price of the latter is the lowest. Thus, there is a need to rationalize the structure of local fuel prices, while economically efficient fuels should be made available in the quantities required by the generating sector.

**Northern Region Utilities:** There are 14 electric utilities operating in the Northern region, of which six are autonomous companies and the rest are managed by the General Electricity Corporation (GEC). Because of their small size and the special nature of their concessions, these companies lack the necessary technical and administrative resources to enhance their economic efficiency. During the Sixth Plan period, therefore, the reorganization of these utilities should be studied, with a view to improving the quality of service, enhancing productivity and raising the efficiency of the electricity sector in the Northern region.

### 8.3.3 SAUDIIZATION

Productivity improvements in the electricity companies were accompanied by a decline in employee numbers by an annual average of 0.7 %, from 27,409 in 1409/1410 to 26,663 in 1413/1414.

Over the same period, however, the participation rate of Saudis in the work force rose from 54.1 percent to 60.1 percent. During the Sixth Plan, the work force is expected to grow at an average annual rate of 1.6 percent, to 29,188 employees in 1419/1420, of whom 70 percent will be Saudis.

#### **8.3.4 ECONOMIC EFFICIENCY**

Higher productivity and improved operating efficiency are ongoing objectives and a major focus of development in the electricity sector. The ratio of customers to employees grew at an average annual rate of 5.2 percent, from 82 in 1409/1410 to 101 in 1413/1414, while the electricity production cost per unit sold decreased at a similar rate. Productivity is expected to keep rising during the Sixth Plan, when employment growth will be less than the expected growth in peak load, production and customers. The number of customers per employee is expected to reach 119 in 1419/1420, while the average cost of service is expected to decrease at an annual rate of 3.1 percent during the Sixth Plan. The various training programs made available by the electricity companies to their employees contribute much to the continuous improvement in productivity. Around 34,840 trainees are expected to graduate from different training programs during the Sixth Plan.

#### **8.3.5 PRIVATE SECTOR OPPORTUNITIES**

The private sector participates in the equity ownership of most electricity companies in the Kingdom whose shares are publicly traded. Furthermore, the private sector provides all the support services to the electricity companies and the GEC, from project implementation to the supply of equipment, materials and systems. In the Fifth Plan period, the commercial banking sector greatly expanded its role in the sector by providing finance for some major generation plants, such as Rabigh power plant in the Western region, and a similar deal is being arranged for a large power generating plant in the Central region.

During the Sixth Plan, the private sector will increase its participation in financing, building and operating the electricity facilities, particularly the major generation projects whose investment cost is estimated at around SR 21 billion. On the other hand, the financial requirements for the transmission network program, which are expected to be financed through the private sector, are about SR 27 billion during the Plan period.

Finally, a study will be conducted during the Sixth Plan on the feasibility of increasing the private sector's role in the ownership and management of the Kingdom's electric utilities, gradually leading to the full privatization of the electricity companies in accordance with the Kingdom's strategy aimed at maximizing the role of the private sector in the national economy.

#### **8.3.6 DEVELOPMENT STRATEGY**

The development strategy for the electricity sector will be implemented through the following objectives, policies and programs.



#### **8.3.6.1 Objectives**

- the provision of electricity at a suitable level of quality and reliability to all consumers, with special emphasis on those areas with no service as yet;
- adherence to the principle of providing an electricity service at least cost;
- full privatization of the electric utilities in the medium to long term;
- development of a regional integrated network by linking the national network with those of neighboring countries.

#### **8.3.6.2 Policies**

These objectives of the electricity sector, and the resolution of the key issues constraining its future development, will be realized through implementation of the following policies:

- Electricity services will be provided at levels of reliability that balance the costs of service with the type and nature of electric loads;
- A flexible pricing policy will be adopted based on periodic tariff reviews, with the structure and level of prices focused on energy conservation and demand rationalization;
- A mechanism for enhancing efficiency and productivity will be introduced into the structure and level of the operating subsidy, until its eventual abolition;
- The private sector's participation in the ownership and management of the electric utilities will be increased;
- The private sector will be given the opportunity to participate in the energy generation sector through the establishment of energy generation companies;
- An appropriate organizational framework will be provided for improved coordination and cooperation among the electricity companies, in terms of sharing experience and knowledge and developing unified standards and specifications;
- More effective training programs will be introduced in order to raise productivity and boost the process of replacing non-Saudis by skilled Saudi workers.

#### **8.3.6.3 Programs**

The main programs to be implemented in the electricity sector in the Sixth Plan are:

*Generation:* This program aims at providing the generating capacity needed to meet the expected growth in electric loads.

*Transmission Networks:* This program covers facilities of Extra High Voltage (EHV) and High Voltage (HV) networks through which further interconnections will be implemented in the various regions of the Kingdom.

*Distribution:* This program will enhance and expand the distribution networks.

*Communication and Control Systems:* This program encompasses the activities related to the despatch, monitoring and control functions in the power networks, in addition to the other communication tasks necessary for the management and operation of the electric utilities.

*Administrative Development:* This program includes manpower development activities, as well as support services such as buildings and offices.

### 8.3.7 GROWTH TARGETS IN THE SIXTH PLAN

Some of the factors upon which the electricity sector's growth forecast for the Sixth Plan is based are: the national and regional economic outlook for the plan period and beyond; population growth and consumption patterns.

During the Sixth Plan, total electricity consumption is expected to grow at an average annual rate of 6.4 percent (Table 8.5), with total consumption per residential customer increasing from 33,231 Kwh in 1414/15 to 36,778 Kwh in 1419/20 -- an average annual growth rate of 2 percent. Furthermore, the non-coincident peak load in the Kingdom is expected to grow at an average annual rate of 6.2 percent, increasing from 17,228 MW in 1414/15 to 23,310 MW in 1419/20.

**Table 8.5**

#### Forecast Indicators in the Electricity Sector during the Sixth Plan

	1414/15	1419/20	Average Annual Growth (Percent)
Consumption ( Billion Kwh )	79	108	6.4
Peak load (MW)	17,228	23,310	6.2
Actual Generation Capacity (MW) *	18,238	25,273	6.7
Customers ('000)	2,818	3,472	4.3
Total number of employees	26,912	29,188	1.6
Share of Saudis (%)	60.6	69.8	2.9
Average total consumption per residential customer (Kwh)	33,231	36,778	2.0
Average Peak Load per customer (KW)	6.1	6.7	1.9
Average number of customers per employee	105	119	2.6

\* Excludes the firm power export capacity of SWCC's dual purpose desalination plants, which will reach 3,416 MW in 1419/1420.

## **8.4 CONSTRUCTION**

### **8.4.1 PRESENT CONDITIONS**

The construction sector plays an important role in the overall development and diversification of the economic base through its direct contribution to infrastructure development and fixed capital formation, and its indirect contribution to the development of other economic sectors -- especially mining and manufacturing -- through wide-ranging linkages with these sectors. In Saudi Arabia, the massive investment in physical infrastructure and housing has been the driving force behind the establishment, development and diversification of the rapidly expanding building materials industry, which not only supplies the domestic market but has also begun to export to other countries in the region.

The construction sector witnessed stable activity during the Fifth Development Plan period as a whole, despite the achievement of positive growth rates of 3.8 percent and 1.8 percent in the first two years respectively. This was physically evident in many different areas of both private and public sector construction, with the establishment of new commercial and housing developments, recreation areas and large capacity expansions in the oil and petrochemical industries. As a result, construction's share of non-oil GDP stabilized at 13 percent at the end of the Fifth Plan period.

As part of the government's contribution to the construction sector's development during the Fifth Plan period, the Deputy Ministry of Housing supervised the completion of 4,570 public housing units. It also handed over to the Real Estate Development Fund (REDF) the main part of the public housing stock and completed several research and design studies. The Deputy Ministry of Contractor Classification issued around 940 new classification certificates and re-classified approximately 1,000 Saudi construction companies. The Deputy Ministry of Public Works (DMPW) supervised the construction of about 340 public buildings and designed 364 projects for various government agencies. Its laboratories carried out around 21,000 studies and tests in fields such as material testing and quality control, and provided consultant services to about 200 public and private sector buildings in need of repair. The DMPW also studied 77 standard specifications and participated in around 50 technical committees for government projects.

### **8.4.2 KEY ISSUES**

Several key issues still need to be addressed if the construction industry is to maintain its critical role in the economic development of the Kingdom:

*Quality Standards:* Rising living standards are often linked to demands for higher quality buildings. However, efficiency has been impeded by the lack of updated quality specifications and unified standards for construction projects, building equipment and materials. Procedures for issuing new

standards and for enforcing quality control are often not adequately applied and procedures for laboratory testing of building materials need to be re-considered, updated and developed. Furthermore, locally produced building materials are often limited to the lower and middle levels of quality and technology. Production methods that use higher quality standards and advanced technology are needed.

*Construction Data Base:* Data collection and management is performed by various agencies and lacks coherence as a result. Information on the newest products, research results, industry trends and investment opportunities is not yet widely and easily available. Periodical statistical reports on the construction sector are needed because the general lack of this kind of information acts as a major constraint on the establishment of small and medium-sized construction services enterprises.

#### **8.4.3 SAUDIIZATION**

The overall Saudiization rate in the Ministry of Public Works and Housing (MOPWH) at the end of the Fifth Plan period reached 79.4 percent of the labor force. Within the various job categories, Saudi nationals accounted for 100 percent of administrative jobs, 97 percent of clerical jobs, 66 percent of professional jobs and 73 percent of semi-professional jobs. In the engineering field, Saudis accounted for only 51 percent of employees. During the Sixth Plan period, the Saudiization rate in professional jobs will be increased to 84 percent and to 82 percent in semi-professional jobs. In addition, the private sector will be encouraged to replace non-Saudi manpower with Saudi nationals.

#### **8.4.4 PRIVATE SECTOR OPPORTUNITIES**

In the past, the government has been a major source of demand for the construction industry, through a wide range of public construction projects of varying size. It has also been the role of government to provide the regulatory framework for a free market environment, to develop some technology used in the construction sector, to standardize laboratory testing procedures and specifications for building materials, and to update the data base for the construction industry.

During the Sixth Development Plan, the private sector is expected to become more efficient in the implementation of planned construction projects. In this respect, the private sector can avail of many investment opportunities, either through its own resources or in conjunction with relevant government agencies and according to the results of feasibility studies. Such investment opportunities may include private sector participation in financing and building some public facilities and then leasing them to government agencies and transferring them after a specified period to the relevant agencies.

Private sector investment opportunities in the construction sector will also be enhanced by a more efficient and expanding financial sector, in which growth is expected in the investment loan activities of the specialized credit institutions and the commercial banks.

#### **8.4.5 DEVELOPMENT STRATEGY**

The development strategy in the construction sector will be implemented through the following objectives, policies and programs:

##### **8.4.5.1 Objectives**

The main objectives for the construction sector during the Sixth Plan are as follows:

- to develop the technical skills of Saudi manpower in all fields of the construction sector and to increase their share of total manpower;
- to adapt the construction activity profile of government agencies to the planned structural changes with due emphases on project management and supervision, maintenance and renovation;
- to increase the participation of Saudi contractors and engineering consulting offices in implementing and maintaining construction projects during the Sixth Plan;
- to raise efficiency and quality standards throughout the construction sector;
- to support the expansion and dissemination of scientific research in construction-related activities;
- to support the ongoing development of the local building materials industry and other national products linked to construction sector needs.

##### **8.4.5.2 Policies**

The following policies will contribute towards the achievement of the development objectives for the construction sector during the Sixth Plan:

- The capacities of all technical education, vocational training and specialized polytechnic institutions will be expanded to increase the supply of technically skilled Saudis in line with the construction sector's needs;
- Appropriate incentives will be introduced to encourage the private sector to employ and train more Saudis in the building materials industry and in construction services;
- Financial support will be made available to small and medium-sized entrepreneurs in the fields of building materials industry and construction related services at the foundation stage of their enterprises;

- In cooperation with other relevant agencies, the central office for construction in the Ministry of Public Works and Housing (Central Construction Bureau) will contribute to raising the level of business intelligence about the construction sector, conducting applied research and studies and making them available to the private sector.

#### **8.4.5.3 Programs**

*Laboratory Tests:* This program aims to define and evaluate the role of MOPWH laboratory tests and to intensify cooperation and coordination with other public testing institutions, such as SASO, the universities and the King Abdul Aziz City for Science and Technology. This program will concentrate on laboratory tests which are not undertaken by the private sector, and will develop unified standards and specifications for testing laboratories for each type of building material.

*Contractor Classification:* This program will continue the classification of contractors by assessing the activity and contract implementation capability, and will start a consultants classification scheme in coordination with related agencies, thereby helping to raise productivity.

*Information Center:* The MOPWH will contribute to the creation of a comprehensive data base on the construction sector, including information about housing, contractors and consultants. Information gathering and analysis and the conduct of applied research and studies needs highly qualified and specialized professionals, who are already available in the MOPWH. These functions can be organized and established with the cooperation of the Central Bureau for Construction, and with the further cooperation and coordination of other concerned agencies.

*Studies and Technical Cooperation:* This program aims to provide the necessary technical assistance to implement the functions of the Deputy Ministry for Public Works and the Deputy Ministry for Contractors Classification.

*Construction:* This program aims to complete ongoing projects, to re-locate laboratories and modernize their equipment.

#### **8.4.6 GROWTH TARGETS DURING THE SIXTH DEVELOPMENT PLAN**

Output of the construction sector is targeted to grow at an average annual rate of 4.0 percent in the Sixth Plan, and employment in the sector will continue to account for around 15 to 16 percent of total employment. A sufficient quantity of commercial buildings (offices and shopping centers) is expected to be supplied.