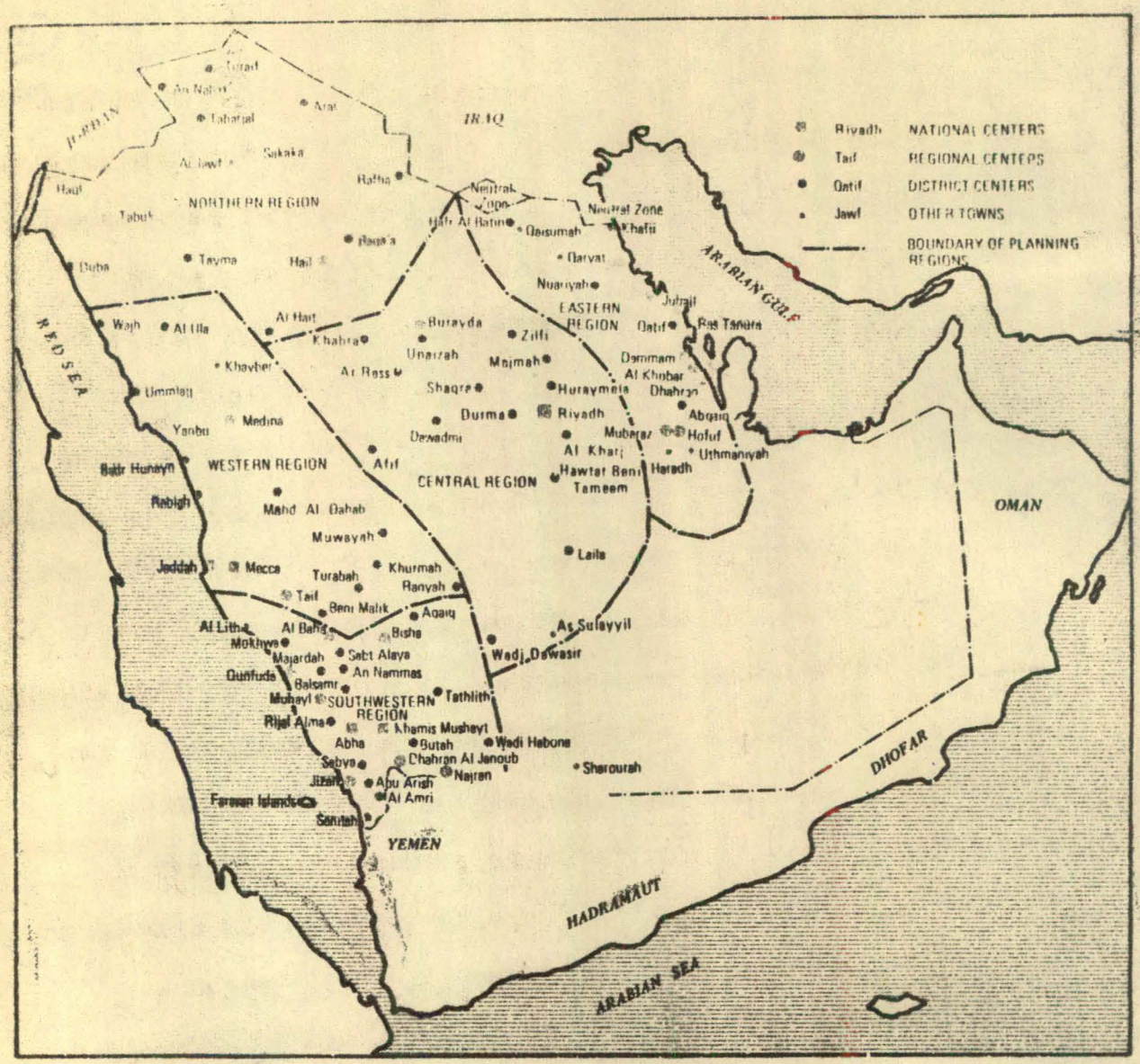
INDUSTRIALIZATION IN OIL BASED ECONOMIES : A CASE STUDY OF SAUDI ARABIA

Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements for the
award of the Degree of
MASTER OF PHILOSOPHY

RASHID MASOOD

CENTRE FOR WEST ASIAN AND AFRICAN STUDIES
SCHOOL OF INTERNATIONAL STUDIES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067, INDIA
1982

KINGDOM OF SAUDI ARABIA



PREFACE

The economies of oil producing Arab-Gulf states are distinct from other developing countries in various aspects. Hence their strategy of industrialization and development cannot be identical. A few distinct characteristics of these economies can be summarised as (i) their exclusive dependence on oil and gas, (ii) the non-renewable nature of their proven resource base and (iii) unlike the other developing countries these economies do not face the problem of capital shortage. Instead in most of these states the size and quality of human capital is not adequate enough to meet the development requirements atleast in the shortterm. Commulatively these factors define the objectives of the industrial plans of these economies. One of the basic objectives is to diversify their economies in order to reduce dependence on oil and create a viable economy keeping in view the socio-political dynamics of the system.

While hydrocarbon has acquired the role of leading sector as suggested by factor-endowment theorem, it cannot be gainsaid that a heavy reliance on hydrocarbon sector may prejudice the development of non-oil sector, thus restricting its role as the leading sector. To become the leading sector it has to generate backward and forward linkages particularly in regard to non-oil sectors. Can hydrocarbon-led growth,

as defined in the plans of these economies, create a self-reliant economic system? This is a basic concern of enquiry.

In this dissertation, an attempt is made to analyse and examine the role of industrialization, which is largely confined to hydrocarbon sector, in the context of development. Though Saudi Arabia is taken as an illustrative case it is assumed that conclusions derived from this study may have validity for other oil-based economies.

The study is broadly divided into four chapters. The first chapter presents a brief overview of economic structure and of industrialization in oil-based economies of the Arab-Gulf viz; Saudi Arabia, Kuwait, The UAE, Bahrain, Qatar and Oman. For the purpose of the study oil-based economies are defined as those developing countries where the share of oil production in GDP and in total exports is very high. The second chapter identifies the major economic as well as non-economic factors which have determined the strategy of industrialization in Saudi Arabia. It is the contension of the chapter that in a tribal society like Saudi Arabia, process of industrialization cannot be viewed on economic grounds alone. Social, political and security factors play equally important role in determining the industrial planning and strategy. The third chapter embodies a brief survey of industrialization

process for the plan period extending from the First Development Plan, 1970-75 to the Third Development Plan, 1980-85. Attempt has also been made to provide a comparative account of the three plans to outline the objectives and progress made during this period. The fourth chapter has been undertaken in an attempt to analyse the industrial strategy in the context of development. It tries to find out as to how far Saudi industrialization process has been able to create conditions for development. Assessment is also made of the role of state and the private sector in the process of industrialization and the effects of the investment pattern on the economic structure and social system of the kingdom as a whole. The fifth chapter reviews the problems and the progress of industrialization in Saudi Arabia and attempts a few suggestions.

The study is largely based on the data from the plan documents of the Saudi government. However, one encounters a number of limitations in the process. To illustrate the point, the Saudi plan document includes only oil-production and refining in the oil-sector and excludes oil-based manufacturing which finds a place in the non-oil sector. This misleads in finding out the real growth of the non-oil sector. Similarly, the plan document does not have any separate chapter on industry in the Second Plan and the third plan as it is given in the First Plan. Likewise,

the national and non-national workforce and their employment in different sectors is given in an ambiguous way. Another field where one faces difficulty is the discrepancy of data on population and oil-revenues. Though such gap in statistics is a great handicap in drawing conclusions, yet an attempt has been made on the basis of available authentic sources to assess the Saudi economy's performance in the context of development. The dates in Hijri have been converted to the Western Callender. However, the official currency of Saudi Arabia i.e. Saudi Riyal (SR) has been retained as such.

In preparing this dissertation, I have been assiduously helped and assisted by many persons and institutions. First and foremost, I am extremely grateful to Dr. Girijesh Pant, Assistant Professor, Centre for West Asian and African Studies, School of International Studies, (SIS), Jawaharlal Nehru University (JNU), New Delhi for his guidance and help at every stage of this study. I am no less indebted to Professor (Dr.) M.S. Agwani, Director of the Gulf Studies Programme, SIS whose helpful attitude, and charasmatic personality egged me on to fulfil the task I have opted for. I am under great obligation to the faculty members of the West Asian Studies in particular and SIS in general for their help and advice. I express my deep gratitude to my

parents Mr. and Mrs. M.A. Qureshi and my brother Dr. A. Masood as also to my friends Hamid and Leena whose goodwill and goading have been a great source of strength in completing the study. My thanks are also due to the staff members of the Jawaharlal Nehru University Library, Indian Council of World Affairs Library, United Nations Information Centre Library and Aligarh Muslim University Library for their willing cooperation and assistance to me in collecting the relevant material as and when required.

Last but not the least, I thankfully acknowledge the award of the Junior Research Fellowship under the Gulf Studies Programme which enabled me to complete this study. Needless to say, whatever views and interpretations find a place in this discourse are my own and I take full responsibility for them.

Rashid Masood

Dated: 30th October 1982 RASHID MASOOD

CONTENTS

List of Tables

List of Figures

Chapter I

INTRODUCTION

Like in any developing economy, industrialization has a crucial role in the development process of the oil-based economies. Its significance becomes more pronounced in view of heavy dependence of these economies on a single resource i.e. oil which is also depletable in nature.

The term 'oil based economies' is meant here to cover those developing countries where the share of oil production in GDP and in total exports is very high. The growth of these economies has become so much dependent on the oil-revenues that even a marginal reduction can cripple down their whole economic structure. The magnitude of dependence of these economies on oil sector can be seen from the following Table 1.1.

TABLE 1.1

ARAB GULF STATES : PERCENTAGE SHARE OF OIL SECTOR AND REVENUE IN GDP AND TOTAL EXPORTS

Country	Oil Sector's share in GDP 1978	Oil share in the total Exports 1981
Saudi Arabia	57.457	99.911
Kuwait	61.793	86.588
UAE	62.786	93.530
Bahrain	87.4 @	90.630
Qatar	88.1 @	93.955
Oman	57.896	99.698

Note : @ figures are for 1977.

Source: UN: Population Bulletin of ECWA (Beirut), No. 20, June, 1981, Table 1, p. 8, and
IMF : International Financial Statistics (Washington, D.C.) vol. XXXV, No. 5, May 1982.

Considerable dependence of the economies on oil has necessitated transforming and diversifying them so as to reduce the overwhelming dependency on production and export of oil, and attain a balanced and self-sustained growth before the oil resources are exhausted. The life span of their oil-resources is shown in table 1.2 given below.

TABLE 1.2

ARAB-GULF STATES : PROVED OIL AND GAS RESERVES AND PRODUCTION, 1980

Country	Proved Oil Reserves (million bbl)	Oil Production (million b/d)	Life Span of Oil Resources (years)
Saudi Arabia	167460	9.630	48
Kuwait	64900	1.382	129
UAE			
Abu Dhabi	29000	1.350	59
Dubai	1400	0.349	11
Sharjah	10	0.010	3
Qatar	3585	0.472	21
Oman	2340	0.280	23
Bahrain	225	0.049	13
Neutral zone	6060	0.540	31

Sources : Compiled from Oil and Gas Journal (Tulsa, Okla), 29 December 1980, p. 78; and 9 March 1981, p. 44; H.G. Hambleton, "The Saudi Arabian Petrochemical Industry : Its Rationale and Effectiveness" in Tim Niblock, ed., State, Society and Economy in Saudi Arabia (London: Croom Helm, 1982), Table 13.1, p. 236.

The depleting nature of oil has defined the time frame by which these economies have to build alternative bases of development. A sustained and rapid economic development can only be achieved through transformation of the economic structure from primary production to modern industrial production. The government of the oil-based economies of the Arab-Gulf have decided to utilize the oil-revenues for industrialization as a means of overall economic development. The huge accumulation of surplus oil-revenues owing to the hike in oil-prices since 1973-74 gave further impetus to the long-term industrial planning programmes. It is believed that the development through industrialization will create productive employment and improve the standard of living of their population. In addition, the structural diversification of production will help in changing the imbalancednature of the economy. This ultimately will reduce their dependence on the imports from the industrially developed countries and help in building a self-reliant economy.

Though oil-based economies share a number of features of under-development with the developing economies, yet they differ with them in several aspects. A brief survey of the comparative account between the two will help in understanding the distinct problems of industrialization found in the oil-based economies. The distinctive features of these economies lie in the economic structure of the oil-industry itself. These economies have very high average export earnings, and

hence enjoy an important advantage of favourable balance of payments while other developing economies generally are burdened with foreign exchange gaps and foreign debts. On the other hand, these economies suffer a distinct disadvantage in having a higher uncertainty of export earnings because of low export diversification. All these economies have relatively low agricultural growth, inadequate infrastructure and narrow domestic market, small and sparse population, scarcity of skilled manpower together with higher technological and wage dualism, higher unemployment and lower education. Inevitably these features have their bearing on the shaping of industrial strategy in the oil-based economies.

(i) Capital Surplus :

The oil-based economies differ from the non-oil exporting developing economies in possessing a natural resource i.e. oil for which there is a very high demand in the international market. The export of oil generates large inflow of oil revenues in the form of foreign exchange. Unlike other developing economies, oil based economies of the Arab-Gulf enjoy an advantage of easily converting the oil-resources into financial flows because the demand for oil is highly inelastic. Besides, it is easier to levy heavy taxes on the oil sector which is operated by foreign owned multinational companies. As a result of these advantages the oil-based economies have favourable balance of

payments than the non-oil producing developing economies which have heavy balance of payment deficits creating a major constraint in the investments for their economic development.

While these oil-based economies enjoy the advantages of the capital surplus, the disadvantages also lie in their oil sectors itself. In these economies, the capital is not generated as a function of the productive forces of their economies but "it originates" as pointed out by Mallakh and Kadhim, "in the oil sector with its few and ineffective linkages to the national economy."[1] Thus, they represent rentier form of economies as the large inflow of oil revenues arises from the basic characteristics of oil resources i.e. their exhaustibility which generates an element of scarcity rent.

(ii) Export Earnings Uncertainty:

Export earnings instability is a major problem for both the oil-based and non-oil exporting developing economies. However, the overwhelming dependence on the oil sector, during the post oil-boom period, has generated higher uncertainty in the oil-based economies of the Arab-Gulf than the non-oil exporting developing economies. This has influenced considerably the level of developmental investments and economic growth. The main reason for the relatively higher uncertainty of export earnings in the oil-based economies is due to their poor diversification. This poor diversification is evident from the higher share of oil export earnings as shown in Table 1.3 given below.

1 Ragaei El Mallakh and Mihssen Kadhim, "Capital Surpluses and Deficits in the Arab Middle East : A Regional Perspective," International Journal of Middle East Studies, (London), vol. 8, no. 2, April 77, p. 184.

T A B L E - 1.3

ARAB-GULF STATES : SHARE OF OIL IN TOTAL EXPORTS

Country	Total Exports (US $ MILLION)				Total Oil Exports (US $ MILLION)				Oil Exports as a percentage of total exports			
	1974	1978	1980	1981	1974	1978	1980	1981	1974	1978	1980	1981
Saudi Arabia	31242.3	37913.3	102113.2	113327.0	31163.4	37816.2	102014.0	113226.5	99.7	97.7	99.9	99.9
Kuwait	847.4	787.7	1452.1	1326.3	798.9	712.7	1304.6	1148.4	94.3	90.5	89.8	86.5
U.A.E.	6391.6	9125.6	20738.0	20036.8	6306.0	8660.9	19454.3	18740.4	98.7	94.9	93.8	93.5
Bahrain	198.2	284.0	511.7	605.5	169.9	226.9	454.8	548.8	85.7	79.9	88.9	90.6
Qatar	31405.7	34828.5	75846.6	74666.0	30844.4	34460.2	72043.4	70152.5	98.2	98.9	45.0	94.0
Oman	1137.2	1512.4	3294.2	4423.0	1136.1	1502.9	3280.8	4409.7	98.9	99.4	99.6	99.7

Source: Compiled from IMF : International Financial Statistics, (Washington, D.C.), Vol. XXXV, No.5, May 1982 and Vol. XXXII, No.7, July, 1979.

....

(iii) Technological Dualism :

The technological imparity is common characteristic of both the oil-based and non-oil exporting developing economies. But the gap between the technologically developed oil sector and other backward non-oil sectors in the oil-based economies is greater than that of the non-oil exporting developing economies.

The oil industry by nature is highly capital-intensive. It is also highly skilled and technologically sophisticated industry. As against this the technological base of the Arab-Gulf States is very primitive. Level of local skills is poor due to overall underdeveloped nature of the society. Though the oil industry was set up as early as 1930s, it has remained largely confined to an enclave form. Consequently, the gap between the technology used in the oil sector and the local skills have become very vast, creating conditions of technological dualism. In most of the economies of the Arab-Gulf, a modern advanced oil-based technological sector coexists with vast backward technological sector, and historically their interaction has been very low.

(iv) Wage Dualism :

Another feature that distinguishes these oil-based economies from other non-oil exporting developing economies is the high level of wage dualism. The nature of the oil industry requires highly sophisticated technology, managerial and supervisory experts and skills. As there is acute

shortage of indigenous skilled manpower in these economies, the oil industry naturally has to depend upon the large number of foreign labour. To meet the developmental needs, the governments of these economies have to offer them a much higher rate of wages than the prevailing rates in other sectors of their economies. They have to provide incentive wages to these expatriates, firstly, to attract higher quality labour and secondly, to increase the exploration activities carried out by multinational oil companies. Such bias of wage policy in favour of oil sector inevitably affects the labour market in non-oil sectors. It either encourages them to go to the oil sector or forces the non-oil sector to bring wage parity with the oil sector which might affect the cost structure adversely, thereby setting a high cost economy. So in these economies, the wage policy sets such a trend of providing different wages to the workers of like skills in different sectors that the increase in average wage levels does not bridge the wage-gap, but on the contrary it maintains the dualistic wage structure.

The wage-gap tends to increase migration of workers from low wage rural sectors to the modern oil sectors where they expect higher wages. The migration tendency of workers from traditional rural to modern urban sectors retards the growth of agricultural sectors, and also createsadditional unemployment problems as these migrated workers cannot be absorbed in the modern oil-sector being capital intensive

that needs highly skilled manpower and provides small employment opportunities.

(v) Immigration and Unemployment:

Yet another prominent feature of the oil-based economies of the Arab-Gulf that is distinct from other non-oil exporting developing economies is their heavy dependence on foreign labour. The demand for labour soared as the oil-based economies started development planning after the 1973 oil price hike. Since these oil-based economies possess small population with massive illiteracy and inexperience, the increased labour demand was supplied from abroad. The expansion in labour demand and lack of skilled and unskilled indigenous manpower increased markedly the dependency on expatriates. This is well reflected from the high percentage of expatriates employed in the Arab-Gulf states as shown in table 1.4.

TABLE 1.4

ARAB-GULF STATES : EMPLOYMENT BY NATIONALITY, 1975

Country	Nationals	Percentage of total	Non-Nationals	Percentage of total	Total employment
Saudi Arabia	1026500	57.0	773400	43.0	1799900
Kuwait	91800	30.6	208000	69.4	299800
UAE	45000	15.2	251500	84.5	296500
Bahrain	45800	60.4	30000	39.6	75800
Qatar	12500	18.9	53700	81.1	66200
Oman	137000	66.0	70700	34.0	207700

Source : J.S. Birks and C.A. Sinclair, International Migration and Development in the Arab Region (ILO: Geneva, 1980), Table 8, p. 132.

(vi) Agricultural Productions

Like other developing economies, oil-based economies are also characterized by the lower growth of agriculture while the bulk of population is engaged in the agricultural sector. It is estimated that more than 60 per cent of economically active population is engaged in agriculture sector, except that of Kuwait. The actually cultivated land has been considerably low as shown in the table 1.5 given below.

TABLE 1.5

TOTAL LAND, ACTUALLY CULTIVATED LAND, AND ECONOMICALLY ACTIVE POPULATION IN AGRICULTURE

Country	Land Area (Thousand ha)[a]	Actually Cultivated Land 1979 (Thousand ha.)[a]	Economically Active Population in Agriculture (Per cent)[b] Mid-1970	Mid-1980[c]
Saudi Arabia	214969	1105	66.0	60.1
Kuwait	1782	1	1.8	1.7
UAE	8360	12	67.3	61.7
Bahrain	62	2	67.3	n.a.
Qatar	1100	2	67.3	n.a.
Oman	21246	41	67.3	n.a.

Source: Compiled from:
(a) F.A.O.: Production Year Book 1980, (Rome, 1980) vol. 34, pp. 50-52.
(b) Middle East Year Book 1980 (London, 1980), p. 296.
(c) F.A.O. : Production Year Book 1980, vol. 34, Table 3, pp. 67-68.

However, this low agricultural performance does not derive from their poor agricultural potential which is fairly high. It is largely due to the fact that the agricultural sector has not received adequate attention in the development plans and programmes of the Arab Gulf states. It is argued that this negligence has been largely due to hallucination of development created by the oil-sector. The high agricultural potential of the oil-based economies of the Arab-Gulf is reflected from the statistics given in table 1.6.

TABLE 1.6

PROPORTION OF LAND CULTIVATED AND CULTIVABLE LAND IRRIGATED

Country	Proportion of land cultivated (percent)	Proportion of cultivable land irrigated (percent).
Saudi Arabia	1	80
Kuwait	1	80
UAE	5	100
Bahrain	5	100
Oman	1	-

Source: Keith Mclachlam, "Natural Resources and Development in the Gulf States" in Tim Niblock, ed., Social and Economic Development in the Arab-Gulf.(London: Croom Helm, 1980), Table 5.2., p. 83.

As a consequence of the low agricultural production, oil-based economies are heavily dependent on food-imports.

Industrialization in the Arab-Gulf Oil-based Economies: An Overview :

Historically speaking, industrialization in the Arab-Gulf oil-based economies started with the discovery of oil. In the past, industrialization was not done in a planned way as the tribal rulers of these states were much interested in spending large share of oil revenues on unproductive luxury items like building up palaces and buying imported cars etc. In recent years, with the accumulation of oil-revenue surpluses, particularly after the steep rise in oil prices in October 1973, these states started systematic industrial planning to change the structure of their economies. Saudi Arabia, Kuwait and recently Oman, for instance, have adopted term planning whilst other countries adopted the principle of single project development.[2] The basic objective of their industrial planning is (i) to reduce dependence on the single source of income from the export of oil and natural gas, and (ii) to diversify the economic resources in order to establish a self-sustained economy.

To meet the objectives set ahead, they gave high priority for the development of infrastructure in areas such as education, technical and vocational training, transportation

---

2 For details see "Gulf-States : Industrial Planning, A Common Concern", Arab Economist (Beirut), vol. XIII, no. 136, January 1981, p. 21.

and communication, construction, power generation and water supply system.

In the plans, they adopted the concept of growth poles expecting that urban industrial growth poles or centres would definitely diffuse development to the periphery. The major industrial centres, for instance, in these oil-rich states are: Yanbu and Jubail Industrial Complexes in Saudi Arabia, Shauiba and Shuwaikh Industrial Complexes in Kuwait, Umm Said Industrial Complex in Qatar, and Jebel Ali (Dubai) and Ruwais (Abu Dhabi) in the UAE.

These oil-rich states started industrialization very late. However, without taking lesson from the past experiences of industrialization efforts in the developing countries, they adopted the same strategy of industrial growth poles which had already proved ineffective there. This approach, in fact, created greater economic imbalance.

Despite this drawback, it cannot be denied that in the oil-rich Arab-Gulf states effective efforts have been made for industrial development and diversification of economic resources. Though the oil is still exported in its crude form, but a growing number of oil-refineries, petro-chemical plants and other manufacturing and construction industries are clear indication of their industrial progress.

Initially, the Arab-Gulf oil-based economies established light manufacturing industries of consumer goods based on imported technology and machinery such as flour mills,

soft drinks, dairy and processed food, date, soap, cigarette etc., utilizing the local raw materials. Import-substitution has also been extended by setting up construction industries like cement, bricks, asbestos products, compressed wood, glass-wares, plastic piping, and other building materials together with (in some countries) radios, motor vehicles etc. which are now assembled locally from imported components. Next, they laid the foundation for large scale, highly capital-intensive industries employing most modern technology, export-oriented and based on oil and natural gas e.g., oil-refineries, petrochemicals, fertilizers, aluminium and copper smelters, iron and steel mills and the prawn fisheries.

The oil-based economies of the Arab-Gulf encountered considerable difficulties in the implementation of their industrialization planning programmes. The most obvious constraints, like many other developing countries, are the lack of technological and management know-how, technical and skilled manpower and infrastructural facilities. However, the developmental economists have been expecting that the abundance of investment capital, owing to the exhorbitant increase in oil prices, would resolve all the problems inhibiting the industrialization process. But the oil exporting capital surplus economies, as pointed out by J.K. Anthony have experienced the importance of other constraints that limit the rate at which the huge amount of available investment capital can be absorbed. Beyond a certain level,

no increase in the availability of capital or other direct inputs can influence the rate of development if a country lacks the social, institutional and political capacities to utilize increased capital, labour and natural resources.[3] So, the absorptive capacity of capital emerged as the major bottleneck in industrialization process of the oil-based developing economies. It implies lack of skills and services necessary for an economy to utilize the available capital to its maximum advantage. The constraints that limit the absorptive capacity of the capital surplus developing economies are their generally narrow resource bases, inadequate infrastructure, small size of market, lack of technology, technical, managerial and administrative skills, and also of planning and implementation experiences. Equally important are institutional, social, cultural and political constraints.

The feverish rate of industrialization posed serious political and social problems for all the states of the Arab-Gulf by negative impact on agriculture and traditional industries, the unhealthy urbanization, the large-influx of foreign labour, inflation, regional dispersion and inequal distribution of wealth.

As industrialization proceeded apace, labour poured in from the rural areas leaving agriculture in a state of stagnation. Moreover, the target set by them for industrialization necessitated import of foreign labour on a massive scale in every sphere ranging from high technology to manual

3 For details see Muhammed Loutfi, "Prospects for Development and Investment for Oil-Producing countries" in Anthony, John Duke, ed., The Middle East: Oil, Politics and Development (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1975), p. 68.

labour. Though they have expanded the educational and training programmes for indigenous workers, but the results come slowly and are incapable of coping with the present or future needs. The problem of labour became much more acute as industrialization gathered speed, and even now remains a major problem all over the Gulf-States. Oil producing countries became flooded with thousands of workers from the other Arab states, India, Pakistan, Bangladesh, the Far-East, Britain and America. In some countries, notably Kuwait and Qatar, they provided as much as two-thirds or more of the local work force, and reduced the indigenous inhabitants to a minority in their own country.[4] The huge influx of foreigners created social tensions among native inhabitants at what they feared was a threat to their culture and society.

The regional dispersion caused by the over concentration of industry in relatively few centres, chiefly the major cities, has further accentuated bitterness among the citizens because of a feeling of inequal distribution of oil-revenues. "The very uneven distribution of new wealth", as pointed out by Heard-Bey, "Causes this society (until recently homogeneous) to split up and adopt new ways of life---. The additional problems of an extremely uneven rate of social development is bound to weigh heavily in the political field. Inequality

---

4 P.A. Smith, "Industrialization and Development", Middle East Year Book 1980, (London, 1980), p. 66.

leads to instability."[5]

In addition to this, other problems common to all the Gulf States include high production costs, poor quality products and their low competitiveness in international markets. What complicates the marketing problem is that all the oil-rich states have concentrated on the establishment of similar industries, mainly the petro-chemical complexes. The petro-chemical industry faces strong competition from industrial countries that have acquired wide experience and have greater potentialities in the field.[6] When these new petro-chemical complexes would become operational, it may result in making the petro-chemical products surplus in the international market. The adverse effect of over supply will mainly be felt by the new entrants in the field, mainly the Arab countries, both on account of higher cost of production and unproven quality of products. Realising this, these countries have recently started to think in terms of regional coordination and cooperation. For, it will enable them to overcome the narrowness of domestic markets, to prevent duplication and competition among themselves. As a consequence, most of the countries are now reconsidering

---

5 Franke Heard-Bey, "Social Changes in the Gulf States and Oman", Asian Affairs (London), October 1972, p. 315.

6 United Nations : Industrial Development in the Arab Countries, (New York, 1967), p. 3.

their industrial planning policies in order to take a look at their priorities, and in particular the aims, pace and direction of industrialisation.

Saudi Arabia, for example, cancelled plans to set up a huge aluminium smelter at Jubail in the light of expansion plans for Smelters in Bahrain and Dubai. Abu Dhabi reduced the scope of its massive industrial complex at Ruweiss pending further coordination with other Gulf States. The newly formed Gulf Organization for Industrial ~~Consultation~~ Consulting (GOIC) at its conference in Qatar in the Summer of 1979 embarked on a study of how to coordinate the production and marketing of polyethylene and other plastic products, while the rulers of Bahrain, Qatar and Kuwait pressed ahead with moves to encourage more joint planning in the region as a whole.[7]

It is clear from the preceding account of industrialization in the oil-based economies that like any other developing country, the logic behind the industrial plans is to alter the economic make up of the society from raw material processing. It also becomes apparent that in choosing the strategy the oil-based economies have opted for resource based industrialization (RBI). The choice for RBI seems to be based on the comparative cost theorem. The assumption is that since raw-material is available at cheaper cost and in abundant

---

7 Smith, n. 4, p. 67.

supply, therefore, industrial structure should weigh in its favour. It is also assumed that in total cost structure of the economies, raw-material has the dominating share. However, it needs to be examined as to how far the comparative advantage of cheap raw material and its supply is relevant in determining its commercial viability and competitive strength. Studies made by Turner and Bedore point out that of the eight identifiable variables, "only two of these variables (feedstock prices and capital availability) are unequivocally in favour of the oil-producing States, with one other (environmental issues) cutting both ways". And that "Three factors (construction, fixed operating and transport costs) will probably always work against the Middle Easterners, and two others (markets and tariffs) currently work against them, but will probably even out ~~even out~~ more as the years go by."[8] In addition to the commercial viability, it needs to be examined whether RBI is an appropriate strategy in liquidating the inequal distribution, unemployment and regional imbalance etc. In the following pages an attempt has been made to assess the resource based industrialization of Saudi Arabia in the context of the issues related with the development process.

---

8 Louis Turner and James Bedore, Middle East Industrialization: A Study of Saudi and Iranian Downstream Investments, (England, Hants. : Saxon House, 1979), p. 76.

Chapter II

DETERMINANTS OF INDUSTRIALIZATION IN SAUDI ARABIA

In Saudi Arabia oil was discovered in 1938, and first oil shipment was exported in 1939. Today Saudi Arabia is the leading oil producer in the whole region, and the third in the world after the USA and USSR since 1966. Like the other Arab Gulf oil-based economies, Saudi Arabia too adopted an economic policy making industrialization as a cornerstone of its development strategy. Though various steps for industrialization were initiated as early as 1950, a systematic effort began in this direction only from the year 1958 when Prince Faisal assumed considerable power as the Prime Minister of the Kingdom.[1] However, it was only after October 1973 when the oil prices provided sufficient surplus revenues that industrialization became the engine of growth. The new wealth enabled the government to develop the necessary physical infrastructure to create favourable conditions for rapid development.

The main objective of the industrial planning and programme was to change the structure of the economy, which was essentially primitive and pastoral. Agriculture and pasturing still provide the livelihood of about half of its 9.361 million

---

1 For details see Tim Niblock, "Social Structure and the Development of the Saudi Arabian Political System", in Tim Niblock, ed., State, Society and Economy in Saudi Arabia (London: Croom Helm, 1982), pp. 99-100.

(1980) population.[2] The rural population deployed in agriculture ~~constitutes 64 per cent of the total population~~ including crop cultivation, livestock production, fishing and forestry, constitutes 64 percent of the total population. Nonetheless, the Kingdom is net importer of agricultural produce in general and of foodstuffs in particular. But the development of agricultural sector was a bit difficult task, because agriculture is heavily dependent on rare and erratic rainfall, due to the acute shortage of water in the Kingdom. So, Saudi Arabia laid heavy emphasis on the expansion of industrial sector in its economic planning policy. As the economy is heavily dependent on a single export product i.e. oil which provides more than 90 per cent (oil royalties and income tax) of the government's total annual revenues,[3] the prime objective of industrialization is to diversify its economic base and integrate the oil sector into othernon-oil sectors. Since oil-revenues are directly accrued to the State, it plays a crucial role in the allocation of oil-revenues and determination of the industrial structure of the Kingdom. The patriarchal theocratic Saudi government based on Wahhabi doctrine adopted

---

2. United Nations: Population Bulletin of ECWA (Beirut), no. 20, June 1981, Table 3, p. 14. However, estimates of the total population of Saudi Arabia vary between 5 million and 9 million.

3. Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85, (Riyadh, 1980), p. 159.

the policy of "growth-through-ideology".[4] Accordingly, it selected neither the capitalist nor socialist system for its industrial production. On the contrary, it opted for a mixed economic system with the assimilation of capitalist and socialist values (a system of joint enterprises) which the Saudis term as an Islamic Economic System. It aimed at creating "a prosperous educated society drawing its livelihood from heavy industry and advanced technology while preserving traditional social and cultural values of the society as an ideology and guide to conduct the core of puritan Wahhabi Islam."[5] The heavy stress laid on religious education for maintaining the traditional social and cultural values was basically to gain political acceptance and support to the economic planning policies by the indigenous tribal inhabitants.

Thus the major determinants of industrialization in the Kingdom are not only the economic factors but equally important are the non-economic factors e.g. political and socio-cultural factors. All these determinants interact with each other and are interdependent.

---

4 Jahangir Amuzegar, "Ideology and Economic Growth in the Middle East", Middle East Journal (Washington, D.C.), vol. 28, part 1, Winter 74, p. 1.

5 John Waterbury and Ragaei El Mallakh, The Middle East in the Coming Decade: From Wellhead to Well-being? (New York: McGraw-Hill, 1978), p. 78.

1. ECONOMIC DETERMINANTS :

Economic factors play crucial role in determining the investment pattern and location of industrialization. The main economic determinants of industrial production are natural resources, investment capital, manpower, physical infrastructure, entrepreneurship and management, technology, and size of the market.

(a) Natural Resources:

Endowed with vast resources of oil and associated natural gas, Saudi Arabia is sufficiently rich in other natural resources. However, oil plays a significant role in the industrial development as it is a major natural resource. Since oil is a depleting resource, therefore, the economy needs to develop alternative sources of income through exploration of natural resources other than oil and natural gas. A brief survey of natural resources would help in analysing the process of industrialization in Saudi Arabia.

(1) Water Resources

The Kingdom has large volume of underground water resources in the Western and Eastern Provinces. But it has insufficient rainfall (in average about 90 mm. annually), and there is not a single river in the Kingdom. The shortage of surface water is a great obstacle for industrial development. In the past it had been entirely relying on underground water resources for its domestic, agricultural and industrial

needs.[6]

With the rapid industrialization programmes, the demand for supply of domestic and industrial water has also increased considerably. The development of underground water resources can meet the demand of agricultural irrigation but it is a much more difficult task in case of water supply for domestic and industrial purposes because many towns are situated in areas where the ground-water resources cannot be easily tapped as many aquifers are found sometimes at a great depth of about 500 meters.[7]

To overcome the problem of water shortage, Saudi government regarded the desalination of sea-water an alternative solution-an inexhaustible source of fresh water. In the early 1960s, it launched two desalination schemes - a short term programme for providing water supplies to the serbously water deficit towns and regions, and a long term programme for large consumption needs of domestic and industrial bases. The first desalination plant located at al-Wajh and the other at Duba on the Red Sea coast near the Jordanian border, went into operation in 1969 with a combined capacity of 576 cubic meters per day.[8]

---

6 For details see Peter Beaumont, "Water and Development in Saudi Arabia", Geographical Journal, (London), vol. 143, part 1, March 1977, p. 47.

7 Ibid., p. 50.

8 Saudi Arabia: Third Development Plan 1980-85, p. 116.

TABLE 2.1

SAUDI ARABIA : DESALINATION PLANTS

Name		Year of Operation	Production Capacity	
			Water m^3/day	Electricity MW.
Jeddah	Phase 1	1970	19000	50
	Phase 2	1977	38000	80
	Phase 3	1980	76000	200
	Phase 4	(Post-1980)	190000	500
Al-Wajh	Phase 1	1970	228	-
	Phase 2	1976	455	-
	Phase 3	(Post-1980)	57000	150
Duba	Phase 1	1970	228	-
	Phase 2	1977	455	-
	Phase 3	(1979)	19000	50
Umm Hajj	Phase 1	1975	455	-
Al Khubar	Phase 1	1974	28500	10
	Phase 2	1980	190000	500
	Phase 3	(Post-1980)	152000	400
Rajal Khafqi	Phase 1	1974	455	-
	Phase 2	1979	19000	50
	Phase 3	(Post-1980)	95000	250
Yanbu al-Bahr	Phase 1	1979	19000	50
Haql	Phase 1	1979	455	-
	Phase 2	(Post-1980)	5200	15
Al Jubail	Phase 1	1977	9500	25
	Phase 2	(1979)	76000	200
	Phase 3	(Post-1980)	114000	300
Al Uqayr	Phase 1	(Post-1980)	95000	250
Al Kharj	Phase 1	1978	570	-

Source : Saudi Arabia : Central Planning Organization, 1975 reproduced from Geographical Journal (London), vol. 143, part 1, March 1977, Table IV, p. 58.

In the plan period, the government has done more concerted efforts for the provision of water to meet the urban and industrial demands and the demands of irrigated agriculture. It has set up a number of desalination plants (see table 2.1) on the Red sea and Gulf Coasts under the administration of the Saline Water Conversion Corporation (SWCC) in the Ministry of Agriculture and Water.

In the First Development Plan (1970-75), emphasis was laid on the water development projects with the effect that five disalination plants were in operation at the end of the First Plan period with a total installed capacity of 17.7 million cubic meters per year and power generation of 50 M.W. In addition 1025 wells were drilled, dug or rehabilitated mostly for domestic water supply, and over 20 dams were constructed for flood protection, aquifer recharge and storage of surface runoff (e.g., Abha Dam) for water supply purposes.[9] Besides, Al-Hassa Irrigation and Drainage project was completed by 1972. Another important task started during the First Plan period was the utilization of water for reinjection into oil wells, particularly from the Wasia aquifer.

In the Second Development Plan (1975-80), US $ 13 billion was allocated for desalination projects to meet the demand of water and power for domestic and industrial uses in the coastal regions, and thereby leavening a portion of the

---

9 Ibid., pp. 116, 117.

natural water resources for agricultural uses. The existing water desalination and power generating capacities were increased to 65.4 million cubic meters per year and 350 M.W. respectively. This represents the combined capacity of 14 operational plants of which three have dual purpose features.[10] Besides, additional water supply capacities were developed by digging or deepening 760 wells and constructing 28 dams. Further, a total of 237 new municipal water supply projects were built and the expansion of over 150 potable water system was undertaken.[11]

In the Third Development Plan (1980-85) 18 desalination plants are planned to be completed by 1984-85, adding 1.4 million cubic meters a day capacity. Besides, 5 more desalination plants with a combined capacity of 0.4 million cubic metres will also be set up. Fourteen of them will be dual purpose i.e. will also generate electric power.[12] In addition, water supplies will further be improved with the completion of some 700 new wells, the deepening of 200 existing wells and construction, expansion or modernization of over 450 urban and rural water supply system.[13]

---

10 Ibid., p. 118.

11 Ibid., p. 117.

12 "Saudi Arabia: Third Development Plan Gives support to Oil Sector", Arab Economist, vol. XIII, no. 139, p. April 1981, p. 34.

13 Ibid., p. 35.

(ii) Minerals

The Kingdom has an advantage to establish resource-based industries as it possesses a large variety of commercially exploitable minerals like metallic and non-metallic resources, and sea-resources. To promote mineral exploration programme for the development of industries based on indigenous mineral resources the government has recently established the Dahran Petroleum and Minerals University for providing necessary skills in the mineral exploration and extraction including crude oil. Further the government enacted a mining code in 1962 which stipulates that the ownership of all minerals is vested in the state, and that prospecting and exploitation can be undertaken by private groups only by concession and on certain rather rigorous terms.[14]

Besides, the Saudi Directorate General of Mineral Resources (DGMR) signed contracts with many foreign companies like British Gold Fields Company, Arabian International Mining Company and Arabian shield Development Company etc. for mineral exploration in different areas of the Kingdom.

Another agreement was signed on 12 April 1966 between the Ministry of Petroleum and Mineral Resources and the Arab Geophysical survey company for the magnetic, geophysical and

---

14 Yusif A. Sayigh, The Economies of the Arab World, vol. I, (London: Croom Helm, 1978), p. 146.

Seismographic survey of the mineral rich areas in the Kingdom, at a cost of SR 16,83,000.[15] The programme involved, according to Sayigh, a general and specific geological survey of an area of about 1.2 million square meters, an aerial survey of the whole Arab-Shield, an aerial magnetic survey of the shield, experimental digging in 42,000 sq. meters, the setting of two laboratories for the examination of soil samples, and the training of geologists to participate in the studies and surveys undertaken.[16]

In 1979, another project was started to investigate the sedimentary rock for identifying the deposits of lead, zinc, barite and flourite. Several mining companies are currently involved in exploration programme. Of the eight exploration permits issued during the Second Plan period, seven are concerned with metallic minerals including gold, copper, nickel, zinc, lead and silver.[17]

The various research explorations have established the presence of many ferrous and non-ferrous mineral deposits e.g., gold, silver, copper, aluminium, uranium, platinum,

---

15 Dato Al-Syed Ibrahim Bin Omar Alsagoff, An Introduction to Saudi Arabia: Twentieth Centuries Miracle of Progress (n.d., 1967), p. 73.

16 Sayigh, n. 14, p. 146.

17 Saudi Arabia: Third Development Plan 1980-85, p. 207.

lead, iron, zinc, nickel, chromite, flourite, pyrite, borite, graphite, manganese, phosphate, sulphur, mica, basalt, asbestos, clay, glass sand, silicoin, and limestone.

It is estimated that by 1980 over 700 mineral occurances have been identified in the main metalliferous mineral belts.[18] And the prospecting in the Arab shield has identified a total number of 95 metalliferous prospects for further investigation by drilling.[19] Location of the major mineral deposits are shown in figure. 1.

Primary studies of old gold mines have established that gold element in some parts of the terrain is ½ an ounce to 1½ ounce per ton. It is not only the gold but silver has also been discovered at the sites around adh-Dawadimi and al-Nuqrah. It is reported that 154 gold workings, 10 ancient silver mines and 28 copper mines exist in the Kingdom.[20]

The French Bureau de Recherches Geologiques et Minieres (BRGM) has seriously investigated Al-Amar mine and estimated the existence of 5.6 million tons of ore, containing an average of 0.7 per cent copper and 5 per cent zinc, with

---

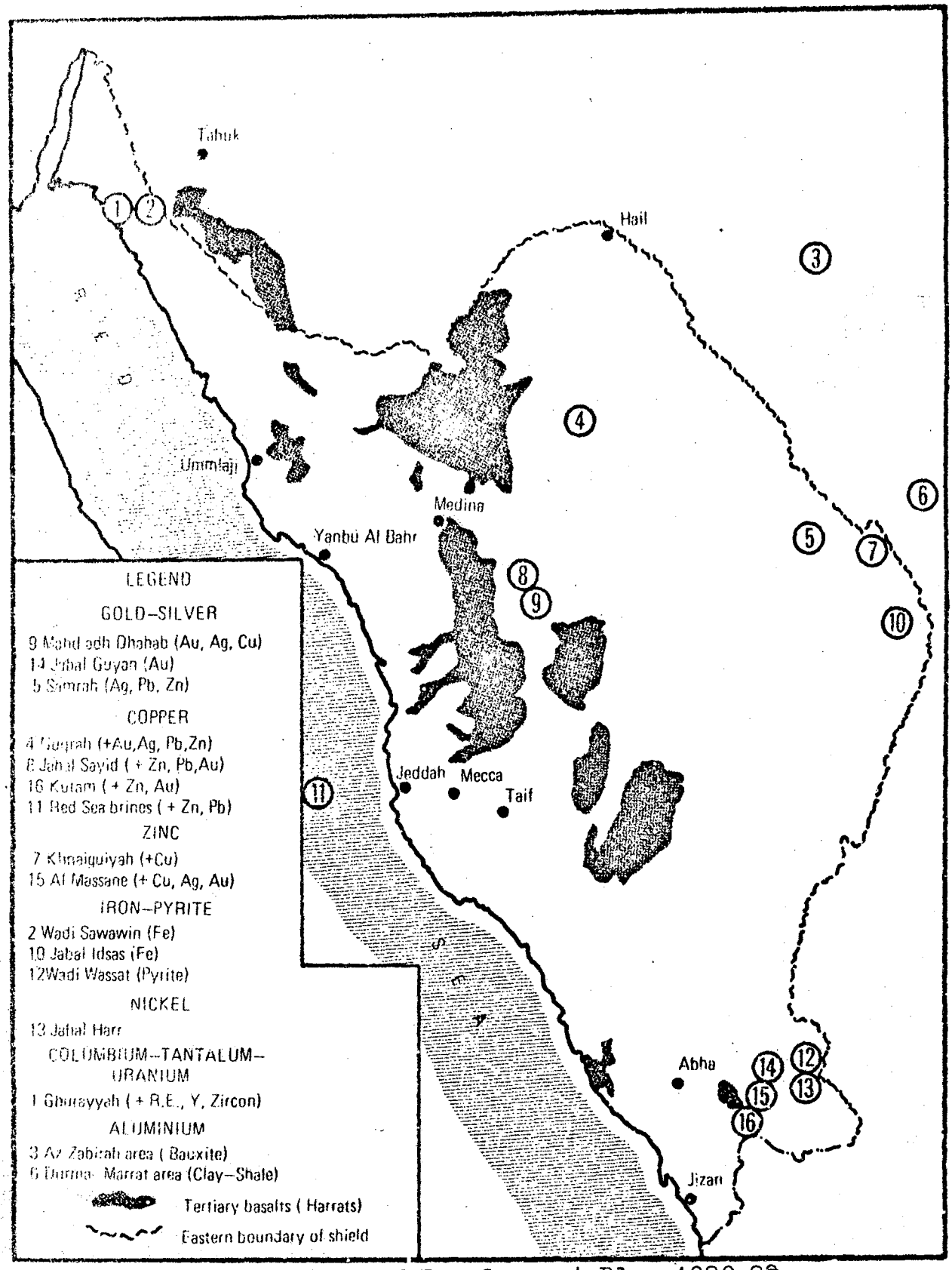
18 MEED (London), vol. 24, no. 45, 7 November 1980, p. 8.

19 Saudi Arabia : Third Development Plan 1980-85, p. 207.

20 Alsagoff, n. 15, pp. 72-73.

FIGURE-1

MAJOR MINERAL DEPOSITS: METALLIFEROUS MINERALS



Source: Saudi Arabia: Third Development Plan 1980-85, Fig. 10, p. 209.

gold appearing quantities ranging from zero to 135 gm. per ton.[21]

The Saudi-American ventures underground working in the Najran frontier district on the Yemeni border had found the existence of a minimum reserve of 5 million tons at 1.5 per cent copper, 5 per cent zinc, and some gold and silver traces of 1.3 gms. and 1.2 ounces per ton.[22]

The US Steel and Serem of France has discovered the existence of 25 tons of copper at 1.6 per cent with traces of zinc, and gold at Jebel-Sayid near Mahd adh-Dhahab.

In another investigation major iron deposits estimated to contain 1.5 billion tons of low grade (30 per cent to 40 per cent) iron ore has been discovered West of Jeddah. Additional iron ore deposits have also been found in Wadi Fatima and Jebel Adsas.[23]

Uranium reserves have also been located near Wadi Sawwawin, but little prospecting has been undertaken in the field.[24]

Among non-metallic resources sand, clay, limestone, gypsum and marble are most important which are essential for

---

21 "Mineral Exploitation close to Realisation", Arab Economist, vol. XII, no. 134, November 1980, p. 20.

22 Ibid., p. 21.

23 Ramon Knauerhase, The Saudi Arabian Economy. (New York, Praeger, 1975), p. 12.

24 "Saudi Arabia: Mineral Exploitation Close to Realisation", Arab Economist, vol. XII, no. 134, November 1980, p. 21.

building material industries, from bricks to the cement industry. Their other potential utilization for industry is like that of sand which can provide raw material for glass industry if its silica content is very high.[25]

Saudi Arabia is fairly well endowed with sea resources also. They include fish and shrimp which have created basis for the establishment of fishing, refrigeration and canning industry. Salt deposits near Qizan coast of the Red Sea and Kaf in the north-west have been found in commercial quantity for export purposes. In addition, salt from sea-water can be extracted and its derived products could also be utilized as a raw material for a chemical industry.

During the Third Plan period two programmes are proposed to be launched for mineral exploration. First is concerned with the aspects of general exploration and prospecting, and second will concentrate on investigations of specific mineral commodities including bauxite, high alumina clays, iron ore and uranium. Petromin in collaboration with foreign mining companies will continue its search for commercially viable mineral deposits — gold at Mahd-adh-Dhahab,

---

25 Ali-Khalifa Al-Kuwairi, Oil Revenues in the Gulf Emirates : Patterns of Allocation and Impact on Economic Development, (Boulder, Colo.: Westview, 1978), p.4

copper at Nuqrah, and Phosphate at West Thunayat.[26]

(iii) Crude Oil

Among the natural resources available in the Kingdom, crude oil is the most important. Found in great abundance, it dominates the resource base of the economy. Saudi Arabia has the largest proven oil reserves[27] in the whole world, and the intensive extraction and export of oil has made it to reach the rank of the third producer and the first exporter in the world. Aramco's estimate in 1980 was that Saudi Arabia had proven reserves of 114 billion barrels. However, Sheikh Yamani has calculated that proven reserves are likely to be 180 billion barrels, and probable reserves atleast twice as much as oil as generally thought.[28] The crude oil reserve amounts to 36 per cent of the overall crude reserves in the whole Middle East and 22 per cent of the world's reserves outside the communist world.[29]

---

26 MEED, (London), vol. 24, no. 45, 7 November 1980, p. 8.

27 Proven Oil reserves are defined as those pools of crude known and recoverable with current technology and available equipment in place.

28 Economist (London) vol. 282, no. 7224, 13-19 February 1982, p. 20.

29 "King Khaled Launches Saudi Arabia's New Five Year Plan", Gulf News (Dubai), 6 May 1980, p. 12.

As the oil exports provide a major portion of the government revenue i.e. more than 60 per cent of the GNP, hence the Saudi industrial planning and programmes depend entirely on exploration and exploitation of its oil reserves.

In May 1933, Ibn Saud signed a 66 year concessionary agreement for an initial payment of £ 30000 with the standard oil company of California (SOCAL) for exploration of oil, covering an area of 920000 sq. km. Oil was struck in the rich adh-Dammam in commercial quantity in 1938 and was first exported in 1939. The real development of oil sector, however, began only after the year 1944 when the Arabian-American Oil Company (Aramco) came into being and sold some of its shares to other American Oil Companies with huge profits viz., the Standard Oil Company of California (SOCAL), The Texas Oil Company (Texaco), the Standard Oil Company of New Jersey (EXXON) — with 30 per cent share each and Secony Mobil Oil Company (Mobil) — with 10 per cent share.

The major organizations and agencies involved in exploration, production and distribution of oil and gas are given below in table 2.2.

The list of the number of major producing oil fields (upto the end of 1972) is given in Table 2.3. And figure 2 shows the position of the Kingdom's main oil fields.

TABLE 2.2

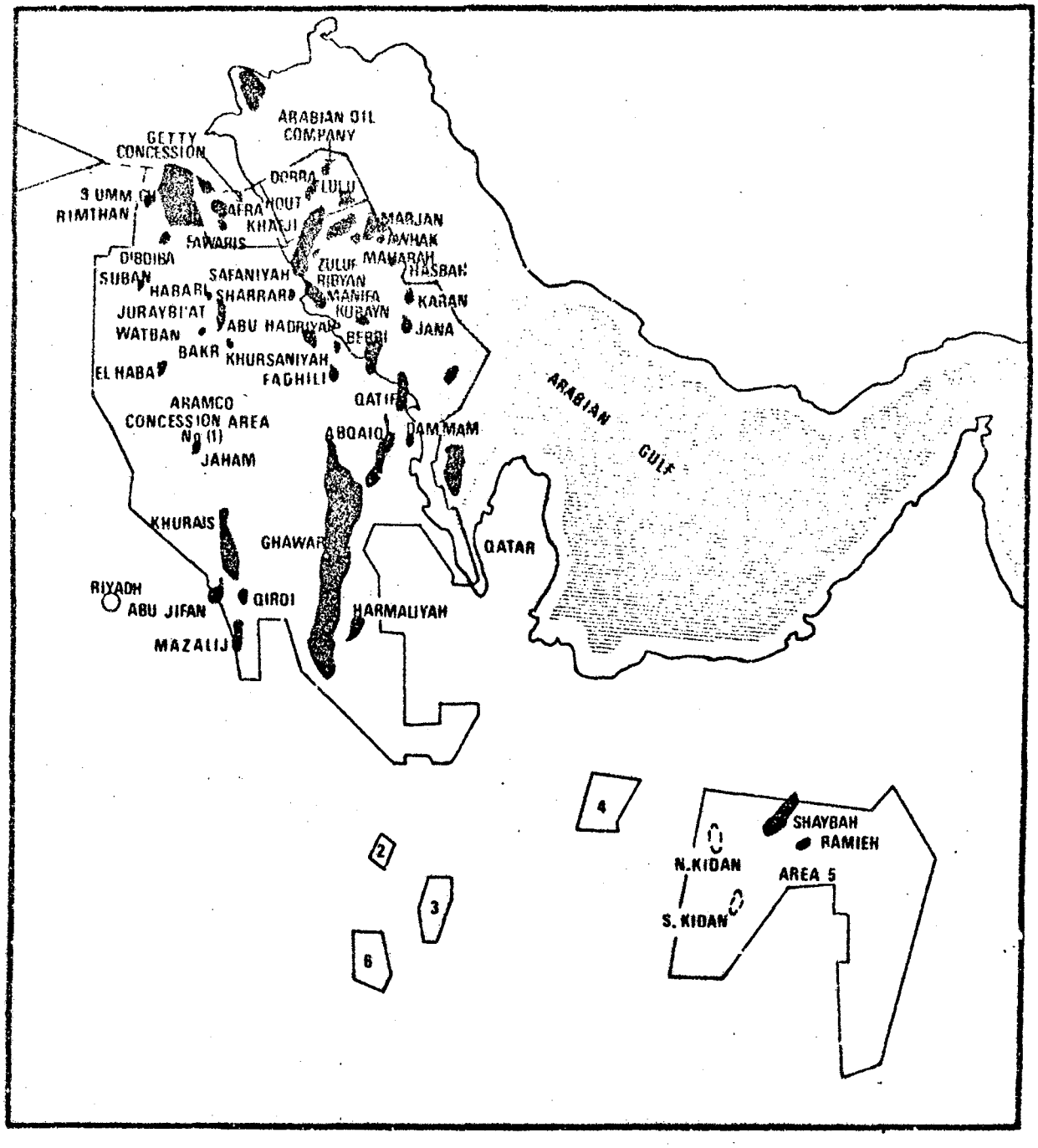
ORGANIZATIONS AND AGENCIES INVOLVED IN OIL AND GAS

Organization/Agency	Function
Ministry of Petroleum and Minerals Aramco	Oil and Gas Production, refining exports of crude/ refined petroleum and gas production
Arabian Oil Company	Oil production, refining, exports of crude/refined products.
Getty Oil Company	Oil production, refining, exports of crude/refined products.
Petromin	Refining, exports of Crude/ refined/ gas products, distribution of fuel to domestic market.
Gasco	Distribution of liquid petroleum gas for domestic consumption.

Source : Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85 (Riyadh, 1980), table 4-17, p. 163.

FIGURE-2

OIL FIELDS DISCOVERED IN SAUDI ARABIA AND THE SAUDI - KUWAITI DIVIDED ZONE



Source: Saudi Arabia: Third Development Plan 1980-85, Fig. 5, p. 165.

TABLE 2.3

MAJOR OIL FIELDS, 1972

(Amounts in millions of barrels)

Field	Year of Discovery	Number of Producing wells	Production for 1972	Cumulative Production	Remaining reserves	Ratio of remaining reserves to production for 1972
Abqaiq	1940	78	370	4087	4357	11.8
Abu Heidriya	1940	8	36	231	827	22.9
Abu Safah	1963	10	34	165	3091	90.9
Barri	1964	30	164	273	7030	42.9
Dammam	1938	21	9	522	125	13.9
Fadili	1949	4	20	122	837	41.9
Ghawar	1948-57	230	999	7641	72827	72.9
Ras al Khafji	1960	42	73	507	2717	37.2
Khurays	1957	9	8	32	7621	952.6
Khursaniyah	1956	11	45	393	2285	50.8
Munifah	1957	5	18	98	7102	394.6
Qatif	1945	19	47	378	4326	92.0
Saffaniyah	1951	81	350	2325	18193	52.0
Total		548	2173	16774	131336	60.4

Source : Said H. Hitti and George T. Abed, "The Economy and Finances of Saudi Arabia", IMF Staff Papers, vol. XXI, no. 2, July 1974, p. 250.

The Ghawar field, first tapped in 1948, is the largest onshore field (1978 reserves estimated at 61 billion barrels) in the world, which is divided into several sections linked by 190 Km long pipeline; and the Safania is the largest off-shore field (13.5 billion barrels) in the world,[30] which is linked to the Rastanura terminal by a pipeline system. Also two other major offshore oil fields, Zuluf and Marjan were discovered in 1965 and ~~1971~~ 1967 respectively.

Another group of fields to the north-west of Ras Tanura along the Qaysumah ~~is~~ are exporting through the Tapline to the East Mediterranean. Recently the Harmaliyah field (east of the Ghawar) and three new fields South-east of the Khurays field have also been discovered.

In 1978 three other new fields — Jalodi and Wariah onshore in the northern part of the large retained area No. 1 and Harqus offshore in the north — were discovered. In 1979, yet another five fields were found, four onshore and one offshore, bringing the total number of fields to 47. Of these 15 are in operation and linked to the pipelines network.[31]

---

30 Anthony McDermott, "O il : Income May Reach $ 80 Bn. This Year", Financial Times, (London), 28 April 1980, Reproduced in Strategic Digest (New Delhi) vol. X, no. 6, June 1980, p. 327.

31 Ibid., p. 327.

(iv) Natural Gas

In addition to crude oil, Saudi Arabia owns huge amounts of natural gas in association with the crude oil in the grounds, except in the three small natural gas fields — North and south Kidan, and Suhul in Aramco's Retained Area No. 5 in Rub al-Khali Empty Quarter. In the past, the untreated gas or sour gas has traditionally been flared.

Saudi government, in 1974, started to investigate and assigned Aramco the task of designing, constructing and operating the system. In consequence, some of this gas was utilized by reinjecting it back into oil reservoirs in order to maintain reservoir pressures. On a more limited scale it is also used as a fuel in the oil fields and as a feedstock in the industrial plants like cement plant, desalination plant and fertilizer plant. Untreated gas utilized in these ways grew from 10 per cent of output during the 1960s to 15 per cent of output in 1973 and reached 25 per cent of output in 1978[32] as shown in table 2.4.

---

32 Saudi Arabia : Third Development Plan 1980-85, p. 174.

TABLE 2.4

SAUDI ARABIAN PRODUCTION AND UTILIZATION OF NATURAL GAS, 1973-1978.

(billion m^3/year rounded)

Year	Production	Utilized Gas	Percent of Gas utilised
1973	42.6	6.3	14.8
1974	45.2	8.2	18.1
1975	37.7	8.9	23.6
1976	46.2	9.9	21.4
1977	49.1	9.6	19.6
1978	42.9	10.9	25.4

Source : Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85, (Riyadh, 1980), table 4-20, p. 174.

Aramco reckoned at the end of 1978 proved and probable gas reserves to be 66,715 bn. cu.ft. and 112,912 bn. cu. ft. respectively.[33] It was expected that the initial phase of gas-gathering and processing programmes, including two pipelines from the Eastern province to the Red Sea port of the Yanbu to transport crude oil and natural gas liquids, would be completed by the end of the Second Development Plan period.

---

33 Anthony Mc. Dermott, "Gas: Expenditure on a Huge Scale," Financial Times, 28 April 1980, Reproduced in Strategic Digest, vol. X, no. 6, p. 322.

In the third Development Plan the gas-gathering programme initiated during the Second Plan period will be completed in two phases. It is projected that in the eastern section, the shedgum NGL centre and the Juaymah fractionation plant will be on stream by the end of the first year of the Third Plan, and in the Western section, the Uthmaniyah NGL and Yanbu fractionation plants during the third year of the Third Plan. The Yanbu fractionation plant will be linked to Shedgum NGL centre by a 1168 km. high pressure pipeline.[34] The gas-gathering scheme when completed will give the Kingdom the capability of processing 40000 m.cu.meters of 'Wet gas' a year to produce sulphur, fuel gas, ethane, and liquified petroleum gas.[35] Providing for power and desalination plants it will also provide cheap feedstock for petro-chemical and metallurgical industrial complexes at Jubail and Yanbu.

b) Investment Capital

Prior to the discovery of oil in 1938, Saudi Arabia's largest source of income was from the annual pilgrimage to Mecca, al-Hajj. Oil revenue increased gradually since the first shipment of crude oil in 1939 but it was not until 1970s that substantial revenues were received from oil-exports which enabled the government to stabilize the economy.

---

34 Saudi Arabia : Third Development Plan 1980-85, p. 175.

35 MEED, vol. 24, no. 45, 7 November 1980, p. 8.

Oil revenues rose from US $ 3 million in 1939 to US $ 333.7 million in 1960 and further reached US $ 1214 million in 1970- (table 2.5). According to Knauerhase during the period 1961-62 to 1969-70, the oil sector produced the largest amount of revenues, contributing between 76 and 87 per cent of the total current revenues.[36] In fact, the oil revenues increased as a sequel to the formation of the OPEC[37] in 1960, nevertheless this was so limited that the annual pilgrimage, al-Hajj remained a significant source of national income.[38]

The steep rise in oil prices of October 1973 brought vastly increased resources into Saudi Treasury that gave pace to the industrialization process so as to transform the structure of the economy. The oil revenues rose from US $ 1.214 billion in 1970 to US $ 29.7 billion in 1975 and reached the peak of US $ 113 billion in 1981. The total revenues received by the government during 1939-81 are given below in table 2.5.

---

36 Ramon Knaauerhase, "Saudi Arabia's Economy At the Beginning of the 1970s", Middle East Journal, vol. XXVIII, no. 2, Spring 74, p. 135.

37 Since 1960 almost all the changes in agreements for sharing profits from the exploration and exploitation of oil-resources were made within the framework of the Organization of Petroleum Exporting countries (OPEC) instead of bilateral agreements formerly made between the government and Aramco. The return per barrel to the government for 1971-73 rose considerably as a result of Tehran agreement of February 1971 and the Geneva agreement of January 1972 between the OPEC and the oil companies.

38 J.S. Birks and C.A. Sinclair, "The Domestic Political Economy of Development in Saudi Arabia" in Tim Niblock, ed., State, Society and Economy in Saudi Arabia (London: Croom Helm, 1982), p. 199.

TABLE 2.5

SAUDI GOVERNMENT OIL REVENUES, 1939-81 (US $ million)

Year	Total Revenue	Year	Total Revenues
1939	3.0	1964	523.2
1945	5.0	1965	662.6
1946	10.4	1966	789.7
1948	31.5	1967	999.1
1949	39.1	1968	926.8
1950	56.7	1969	949.0
1951	110.0	1970	1214.0
1952	212.2	1971	1884.9
1953	169.8	1972	2744.6
1954	236.3	1973	4340.0
1955	340.8	1974	31163.38
1956	290.2	1975	29719.126
1957	296.3	1976	38784.702
1958	297.6	1977	43964.71
1959	313.1	1978	37816.213
1960	333.7	1979	58652.701
1961	377.6	1980	102014.0
1962	409.7	1981	113226.51
1963	607.6		

Sources : Compiled from C.A. Cooper and S.S. Alexander, ed., Economic Development and Population Growth in the Middle East (N.Y.: Elsevier, 1972), Table 8-2, p. 373; Ramon Knauerhase, "The Economic Development of Saudi Arabia", Current History, vol. 2, no. 423, January 1977, table 1, p. 7; Yusif A. Sayigh, Economies of the Arab World (London: Croom Helm 1978), table 4.6, p. 144; I.M.F. Staff Papers, vol. XXI, no. 2, July 74, table 5, p. 262; Saudi Arabia : Third Development Plan 1980-85, table 1-2, p. 11; IMF: International Financial Statistics (Geneva), May 1982, pp. 348-349; MEES (Nicosia), vol. XXII, No. 39, 16 July 1979, table 4, p. III.

(c) Manpower

Saudi Arabia has relatively larger population than the other neighbouring states of the Arab-Gulf which makes it possible to meet the demand of industrialization indigenously. Yet it imports a large number of labour for its industrialization programme as the indigenous population lacks education, experience and skills.

TABLE 2.6

TOTAL POPULATION AND COMPONENTS OF POPULATION CHANGE, 1980

Country	Mid-year population estimate (defacto in thousands)	Natural increase (per cent)	Population growth (per cent)
Saudi Arabia	9361	3.0	5.6
National	7211	3.3	3.3
Non-National	2150	2.1	13.3

Source : UN : Population Bulletin of ECWA, (Beirut), no. 20, June 1981, table 3, p. 14.

The Saudi Arabian national population in 1980 was estimated to be 7.211 million (table 2.6), and about 83.8 per cent (age group of 15 years - and above) of them were illiterate.[39] The size of the active national labour force in 1980 was about 1.411 million and their average annual

39 United Nations: Population Bulletin of ECWA (Beirut), no. 20, June 1981, table 9, p. 31.

growth between 1975-80 was 2.4 per cent.[40]

The acute shortage of skilled and unskilled labour is a major bottleneck of the industrialization programme. The manpower deficiencies are both quantitative and qualitative. The quantitative deficiency can be attributed to their lack of skill and low participation in the labour force, whereas qualitatively the deficiency lies in inadequate education and training along with insufficient motivation and social mobility.

The historical, social and cultural factors have definite bearing in determining the size of the national labour force. Under a decree issued in May 1978 by the Ministry of Interior, employment of women is forbidden.[41] This has reduced the national force to half of its former strength. Besides they themselves are reluctant to work in the urban industrial centres as they earn more and enjoy freedom of activity in the rural sector.[42] In addition, the Saudis in general consider certain type of work below their dignity. As a result, the Saudi labour force is confined mostly to the management level desk jobs and to certain services such as road haulage, taxi driving and tea-making. There are very small number of Saudis who work in skilled, semi-skilled and unskilled labour sectors.

---

40 Saudi Arabia: Third Development Plan 1980-85, table 2-5, p. 35.

41 John Weir , "Foreign Labour a Worry", Financial Times, (London), 23 April 1979.

42 For details see J.S. Birks and C.A. Sinclair, Arab Manpower (London: CroomHelm, 1980), p. 110.

TABLE 2.7

SAUDI ARABIA : EMPLOYMENT OF NATIONALS AND NON-NATIONALS BY ECONOMIC SECTOR, 1974-75

Economic Sectors	Total		Nationals		Non-Nationals	
	Number	Percent	Number	percent	Number	percent
Agriculture and Fishing	585550	32.5	530650	51.7	54900	7.1
Mining and Petroleum	27000	1.5	15400	1.5	11600	1.5
Manufacturing	115900	6.4	21550	2.1	94350	12.2
Electricity, Gas and Water	20350	1.1	7200	0.7	13150	1.7
Construction	239300	13.3	35900	3.5	203400	26.3
Trade	192100	10.7	60600	5.9	131500	17.0
Transport, Storage and Communication	103800	5.8	72900	7.1	30900	4.0
Finance and Insurance	13100	0.7	5100	0.5	7000	0.9
Community services	443050	24.6	241200	23.5	201850	26.1
Miscellaneous	60650	3.4	35900	3.5	24750	3.2
Total	1800800	100.0	1026400	100.0	773400	100.0

Source : J.S. Birks and C.A. Sinclair, Arab Manpower, (London: Croom Helm, 1980), table 5.13, p. 108.

As table 2.7 indicates, over half (51.7 per cent) of its national labour force is engaged in the traditional agriculture and fishing sector, and another quarter in community services, and only a small portion of the indigenous labour force works

in the modern industrial sector for example, 2.1 per cent in manufacturing and 3.5 per cent in construction industries. Even the petroleum and mining sector, which play a significant role in the economy, account for only 1.5 per cent of its total indigenous labour force.

To meet the needs of industrialization, an additional 9000 foreign workers are estimated to be imported in the Third Development Plan, bringing the total number of non-Saudi segment of the labour force to be 1,068,800.[43] This has forced the Saudi government to lay special emphasis on the development of national labour force. Human resource development is one of the priority goals in the Third Plan. Its share in total plan outlay has increased to 18.5 per cent as against 15.9 per cent in the Second Plan.[44]

(d) Physical Infrastructure

Physical infrastructure is one of the basic factors in the determination of strategy for industrialization. Like the acute shortage of manpower and skill, lack of physical infrastructure is also a serious constraint in the industrialization process of the Kingdom. Particularly in Saudi Arabia where international transactions play very crucial

---

43 Saudi Arabia : Third Development Plan 1980-85 , p. 99.

44 Ibid., p. 88.

role both in exports of oil and in laying the foundation of industrialization which are largely export oriented, role of infrastructure becomes very important to determine the pace of development. Therefore, the government has given top priority to build up the physical infrastructure in its national development plans. In the plan period, considerable progress has been achieved in developing the physical infrastructure — transport, communication and electricity.

(1) Transport

Transportation sector play an important role in the process of industrial and economic development of a State. Firstly, the transportation facilitates the development of the industrial, agricultural and mining sectors, and secondly, it fosters an equitable distribution of government services.

In the 1960s, development of transport and communications were the most challenging problems before the government of Saudi Arabia so as to link the urban and rural areas of the sparsely populated kingdom. Inadequate transportation and communication facilities are obstacles in the industrial development programmes. In the First Plan, large amount of investments were made to develop the transportation and communication systems. In the Second Plan, substantial progress was achieved in providing the basic transport and communication facilities. A public-private joint venture, the Saudi Arabian Public Transport Company (SAPTCO) was

created in 1979. Its responsibilities include the operation of intercity and urban bus services in the Kingdom.[45] It is proposed that the transportation sector would further be expanded with particular emphasis on improving the quality of the existing facilities during the Third Plan period.

Roads

Inadequacy of roads was a great obstacle in the transportation of goods and raw-material needed for the industrialization programme. The government gave an appreciable importance to the construction of road network linking the ports, airports and cities to the industrial centres in its communication development plan. Modern roads were first constructed in the Hijaz to link Jeddah, Medina and Mecca; then in the Gulf area connecting the oil fields with the main ports; and then around the capital, Riyadh. This was followed by the linkage of the three axis regions by a highway connecting Jeddah, Mecca, Riyadh and Dammam. By 1961 Riyadh was linked to the Gulf region and to the Kuwait border.[46]

The first paved road in the kingdom was constructed in 1951. In 1963, when the first road development programme was launched, the kingdom had constructed 4147 km. of roads.

---

45 Ibid., p. 394.

46 "Development of Ports and Roads in Saudi Arabia", Africa/Middle East Business Digest (Beirut), vol. XIX, no. 242, January 1975, p. 8.

Prior to the First Development Plan in 1970, the Kingdoms paved road network exceeded 8000 km.[47]

At the end of the second Plan, the road system consisted of 11394 km. of main roads, 10053 km. of secondary roads and 23180 km. of rural roads connecting 6954 villages.[48] This led to connecting production to consumption areas, and facilitating the transportation of heavy commodities and equipment, necessitated by development projects.[49] A major achievement during the period has been the completion of 753 kms. Taif-Abha-Jizan highway which passes through difficult terrains and links one of the most fertile areas of the Kingdom. The completion of a number of other major roads has also interlinked other important areas and brought about a smoother and more economical movement of goods.[50] Fig. 3 shows the kingdom's road network.

A road programme of 28 road projects which were started during the Second Plan, will be completed in the

---

47 Saudi Arabia : Third Development Plan 1980-85, p. 397.

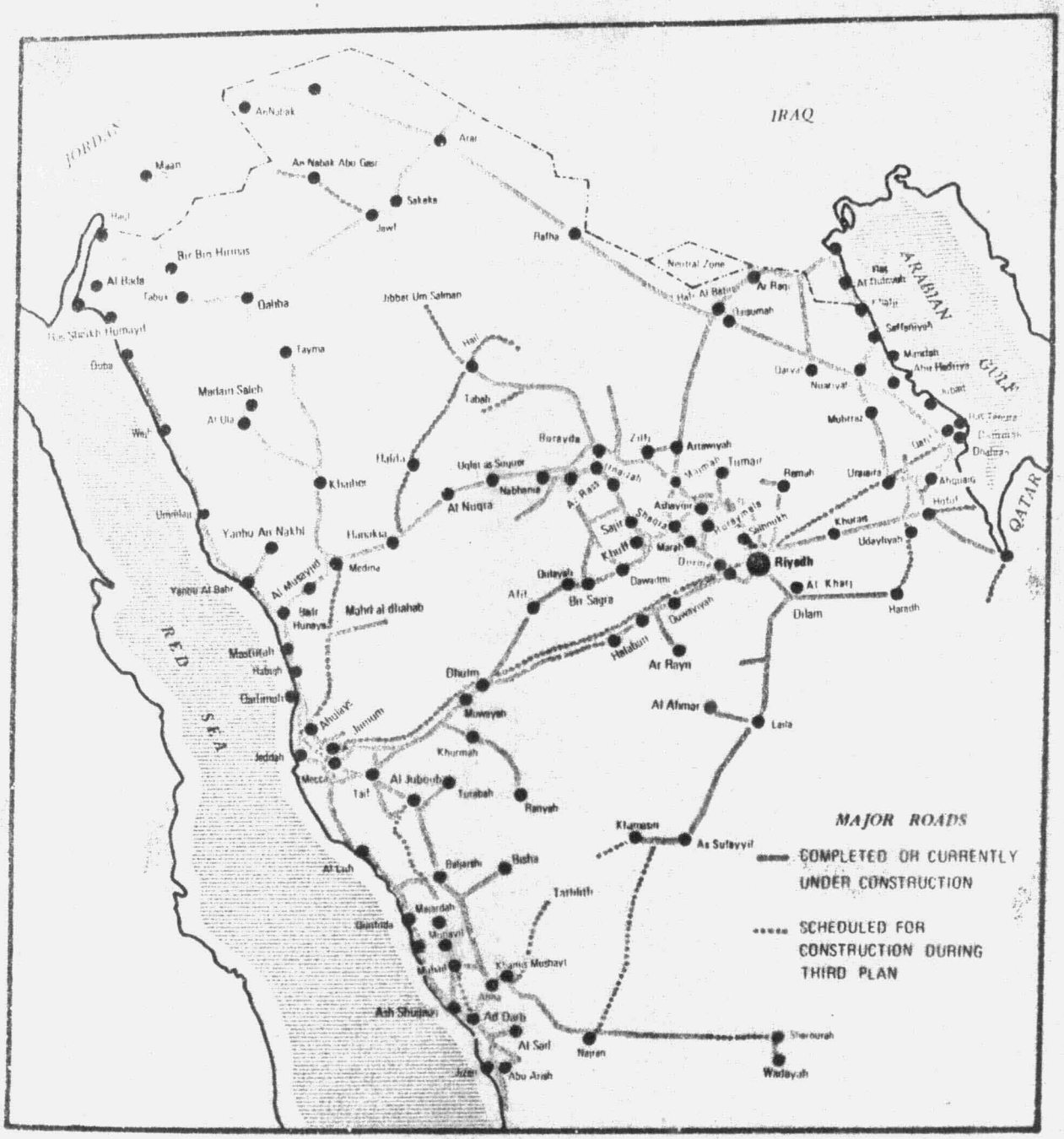
48 Ibid., p. 403.

49 "Third Plan to Harness Inflation", Arab Economist, vol. XIII, no. 142, July 1981, p. 21.

50 "Second Five Year Plan Achievements", Dawn (Karachi), 31 August 1980.

FIGURE-3

THE HIGHWAY NETWORK OF SAUDI ARABIA, 1400



Source: Saudi Arabia: Third Development Plan 1980-85, Fig. 13, p. 401.

Third Plan period. The new main road construction production programme include 25 projects which will provide an additional 4,048.7 kms. of new roads by 1985.[51] Besides, a number of main roads improvements are also planned which include the extension of roads already open to the traffic, the construction of over-passes, bridges and mountain passes, and road widening projects.[52] The most important schemes are the construction of highways linking Riyadh with each of Dammam, Hijaz, Qasim and Medina as well as executing the Second phase of circular line around Riyadh city.[53]

A Secondary road programme comprising two-laned paved roads will also be constructed which will increase the existing network by 1,421.6 km.[54] By the end of the Third Plan period, an additional 17,445 kms. of rural earth-surface roads will also be constructed connecting 4,579 villages.[55]

Railroads

Inadequate railroads is another bottleneck in transporting raw-materials and other necessities to the

---

51 Saudi Arabia: Third Development Plan 1980-85, p. 403.

52 Documents, MEED, vol. 24, no. 45, 7 November 1980, p. 54.

53 "Third Plan to Harness Inflation," Arab Economist, vol. XIII, no. 142, July 1981, p. 22.

54 Saudi Arabia: Third Development Plan 1980-85, p. 405.

55 Ibid., p. 406.

industrial centres needed for industrialization. The kingdom has only two railroads— one linking Medina with Amman in Jordan and the other Dammam with Riyadh.

The first, Medina— Amman line has not been in operation since the First world war mainly because of the fact that the rail gauges in the two countries are different.

The second railroad connecting Dammam with Riyadh (562 kms.) was built by Aramco in 1951 which was taken over by the government in 1961. There is another shorter railway line (17 kms.) linking Dammam city with Dammam port. In addition, there are a number of subsidiary lines that add 125 kms. in length.[56] These railroads are primarily used in transportation of freight from Dammam pier to various inland storages and distribution.

In recent years, the transportation of commodities between middle and eastern provinces through railroads has increased substantially. During the Second Plan period, more than 250 km. of track was replaced with an additional 95 km. project continuing into the Third Plan.[57] The government has made the provision in its Third Plan for the improvement of the existing facilities as well as the implementation of the new projects. The Saudi Government Railroads Authority would

---

56 Sayigh, n. 14, p. 163.

57 Saudi Arabia: Third Development Plan 1980-85, p. 423.

undertake the programme that includes the replacement of 345 kms. of track, the construction of an additional 150 kms. of second track, construction of a new 320 kms. Hofuf-Riyadh link. Other construction projects include a new freight terminal at Riyadh, new stations at Riyadh, Dammam and Hofuf, and new rolling stock maintenance facilities in Riyadh and Dammam.[58]

Airports

Insufficient road and railroad facilities have necessitated the expansion of internal aviation system for airlifting labour, and dwvelopmental goods and equipments to the industrial centres. Modernization of the kingdom's airports was started on a broad scale in the mid-1960s but most significant progress was initiated late in the First Development Plan.[59]

In the Second Plan, extensive investments were made to develop airport facilities throughout the Kingdom including new airports at Jeddah, Taif, Abha, and Tabuk, and substantial improvements at Riyadh, Dahran, Medina, Jizan, Najran, Hail and Badana.[60] The government established a network of 23 domestic airports in addition to the three international

---

58 Ibid., p. 427.

59 Ibid., p. 412.

60 Ibid., p. 412.

airports viz, Jeddah, Riyadh and Dahran which have the facilities to accommodate any type of airplane including fighter jets. Saudi Arabian airlines have now regular services between all major internal population centres, all major Middle Eastern cities and a number of European and African routes.[61]

In the Third Plan, the government has planned to complete the two major projects involving international airports. The construction of new Jeddah airport is scheduled to be completed by 1983 and that of a new airport in Riyadh will become fully operational by 1985.[62] Besides, to improve domestic air services, three new domestic airports are planned at Taif, Hofuf and Baha. In addition, the four domestic airports — Abha, Jizan, Medina and Taif are proposed to be further improved and upgraded enabling them to accommodate wide-bodied jets. The terminal buildings at Dahran airport will also be expanded along with other minor construction of the remaining domestic airports.[63]

Ports

Besides, the government paid due attention to the development of new ports and expansion of the existing ones.

---

61 Ramon Knauerhase, "Saudi Arabia's Economy At the Beginning of the 1970s", Middle East Journal, vol. XXVIII, no. 2, Spring 74, p. 135.

62 MEED, vol. 24, no. 45, 7 November 1980, p. 54.

63 Ibid., p. 54.

This has facilitated the transportation of the crude oil tankers to the international market and also removed the congestion of production goods and equipments imported heavily for industrial programmes.

Now there are five major and sixteen minor ports in the Kingdom. All of the major ports — Yanbu, Jeddah, Dammam, Jubail and Jizan — have been operated since 1976 by the Saudi Ports Authority (SPA). The SPA also operates four small ports on the Arabian Gulf and ten on the Red Sea. Figure 4 identifies the location of the Kingdom's port facilities.[64]

The most general cargo are handled by the three major ports — Jeddah and Yanbu on the Red Sea and Dammam on the Arab Gulf Coast. Jeddah is the oldest cargo port and has been the focal point, for centuries, for pilgrims and the trade through Red Sea, while Dammam is the second largest port for ordinary cargo and all imported goods in the Kingdom.

The other smaller ports like Ras Tanura, Al-Khafji, and Saud port have the facilities for leading crude petroleum and they also handle ordinary cargo.

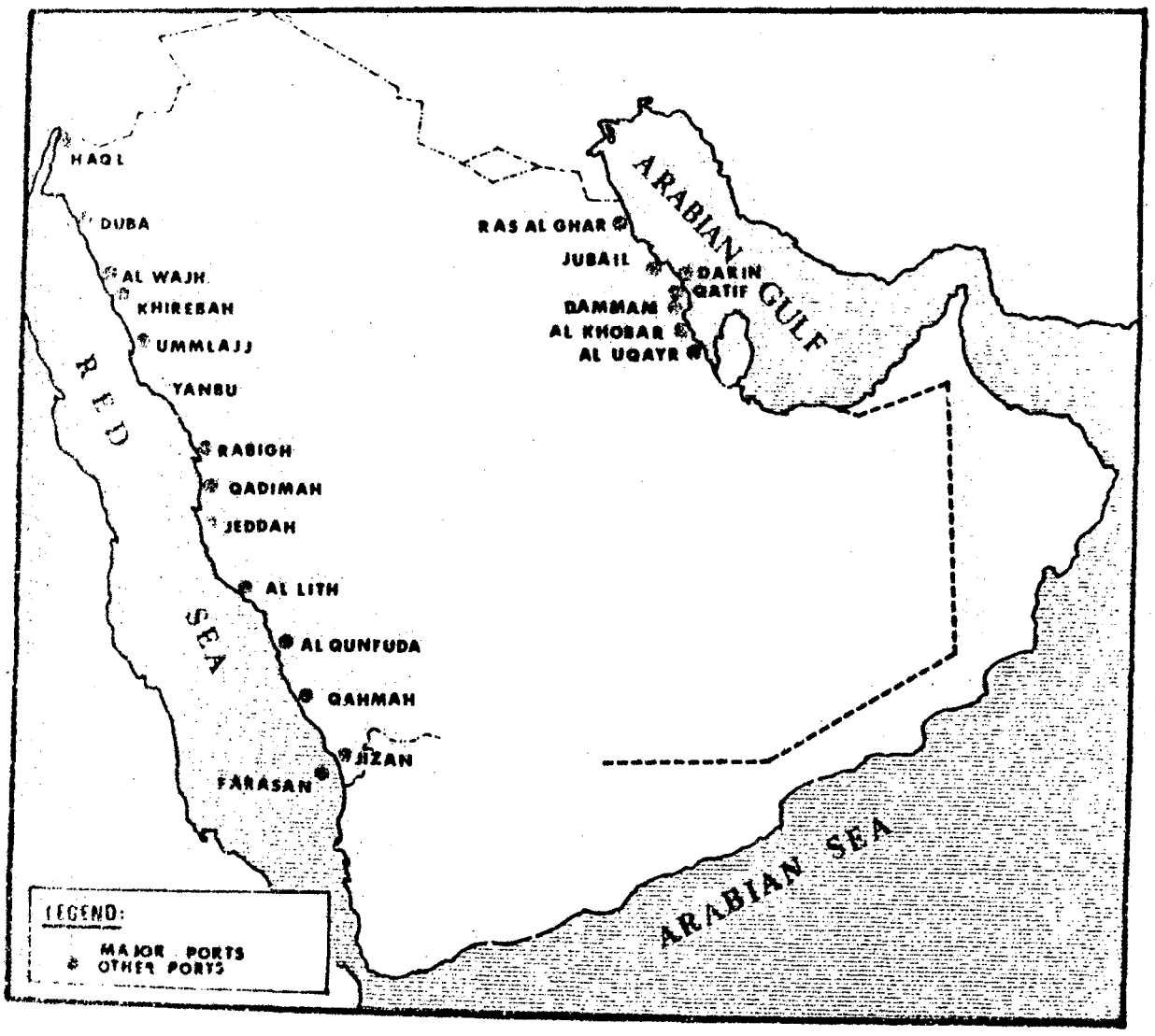
In view of the growing needs resulting from the industrialization programme of the Kingdom, two new ports were opened at Jubail and Yanbu. Furthermore, the government planned for the expansion of the existing facilities of major ports of

---

64 Saudi Arabia: Third Development Plan 1980-85, p. 406.

FIGURE-4

PORTS IN SAUDI ARABIA



Source: Saudi Arabia: Third Development Plan 1980-85, Fig. 14, p. 407.

Jeddah and Dammam and also those of the smaller ports like Qatif, and Jizan. Further, the development of six new ports on the Red Sea was also considered.

Besides, in a bid to reduce the congestion at Jeddah and divert the traffic from Jeddah to the new port Yanbu, the government has been providing with special incentives e.g. cement import was given exemption from certain duties and charges provided the cargo was off-loaded in Yanbu.

In addition to the completion of the four-phased expansion programmes for Jeddah and Dammam ports, new berths are planned to be constructed at Jeddah and railroad track to all berths at Dammam in the Third Plan period. At Yanbu both the pilgrims hall, begun in 1975, and the port expansion programmes are expected to be completed. Only a modest improvement to Jubail is needed during the third plan which is already a modern and well equipped port. It is expected that the ongoing port development programme for Jizan will be completed by 1985.[65]

The development projects of minor ports will also continue, which include construction work at Al-Khobar, Qatif and Darin, the completion of a master plan for Ras Abu Khamis and additional buildings at al-Khobar.[66]

It is estimated that the number of operating quays

---

65 Ibid., p. 411.

66 MEED, vol. 24, no. 45, November 1980, p. 54.

at the ports of the kingdom which had reached 116 at the end of the Second Plan would further increase to 144 by the end of the Third Plan. Consequently the cargo unloaded at these ports that had risen from a total weight of 2 million tons at the beginning of the First Plan to around 46 million tons at the end of the Second Plan,[67] would increase to 47 million tons by the end of the Third Plan.

Thus the development and expansion of ports in the Kingdom has improved the transportation facilities for imports of the raw-materials and heavy machinery and equipments needed for development of export-oriented industries. This would also facilitate the export of oil and also the industrial products to the international market.

(ii) Tele-Communication

The first step in the establishment of a modern telecommunication system was taken in 1955 when the high frequency radio communications for voice and teleprinters were established in the major cities of the Kingdom. Later a telephone service was also introduced. Major international service links using high frequency radio were completed in 1963 including a link between Dammam and Bahrain.[68]

---

67 "Saudi Arabia: Third Plan To Harness Inflation", Arab Economist, vol. XIII, no. 142, July 1981, p. 21.

68 Saudi Arabia : Third Development Plan 1980-85, p. 428.

In recent years, the government has expanded its coverage to a number of cities, towns and villages by developing the long-distance communications network. The development of telecommunication network programme was geared up during the plan period to provide modern telephones, telegraph, and telex facilities within and with other countries. Substantial progress in the development of telecommunication was achieved by the beginning of the Second Development Plan period. There was an exchange line capacity of 126000 and a modern long distance network comprising a coaxial cable connecting the cities of Jeddah, Riyadh and Dammam; a link between Jeddah Medina and Yanbu; and some international links with nearby countries.[69]

In the Third Plan, emphasis is laid on the improvement of the existing telecommunication facilities and expansion of long-distance network comprising the coaxial backbone system, the micro-wave network and the Satellite earth station system. The coaxial cable system is proposed to be extended to link Medina and Tabuk, Dammam and Bahrain, and additional capacity will be provided between Taif, Mecca, Jeddah and Medina. The micro-wave links will be extended to Gulf and other neighbouring countries, while the domestic micro-wave system will also be extended to make the following connections: Al-Oun-King Khalid city, Hofuf-Salva-Dawadene, Riyadh-Darmal-Zolaim, TV stations

---

69 Ibid., p. 428.

to network and to provide additional broadcast channels.[70] Satellite system will also be improved by providing an earth station at Jeddah.

It is estimated that the number of telephone exahange in the Kingdom reached 93, increasing the exchange line capacity from 126000 at the beginning of the Second Plan to 452000 by the end of the second Plan period.[71] In the Third Plan, 480000 telephone lines are proposed to be installed bringing the total to more than 1 million. Further 16,000 new mobile telephones will also be established.[72]

As far as the automatic telephone system is concerned it was first introduced in Jeddah and later on, extended to 10 major urban areas by 1971. It was planned that 470,000 automatic telephone lines operating on electronic exchange would be expanded to 72 cities and towns of the Kingdom by 1981.[73]

The telex services, which were not provided prior to the First Plan, have been made available in 19 cities and the number of telex lines has been expanded to 15286 by the end of the Second Plan.[74] It is proposed that the telex network would be expanded by 15000 lines bringing the total capacity to

---

70 MEED, vol. 24, no. 45, 7 November 1980, p. 57.
71 "Second Five Year Plan Achievements", Dawn, 31 August 1980.
72 MEED, vol. 24, no. 48, 28 November 1980, p. 9.
73 "Second Five Year Plan Achievements", Dawn, 31 August 1980.
74 Saudi Arabia : Third Development Plan 1980-85, p. 429.

30286 lines, all electronic by 1985.[75]

Postal Services

Postal services are very poor and inadequate due to inefficient management and lack of trained manpower. Prior to the First Development Plan only 210 localities had Post Offices.[76] The Postal Services Department significantly expanded during the Second Plan period. Mobile offices were introduced and many new post office buildings were constructed. The total number of post offices increased to 383 by the end of the Second Plan period. In addition, two new training institutes were introduced developing the provision of training facilities in Riyadh, Jeddah and Dammam.[77]

In the Third Plan, major emphasis will be laid on the expansion and improvement of existing postal services. While 325 Saudi cities and towns are now being served, upto 600 will be reached by the execution of the Third Plan.[78] A number of projects are also planned to improve the efficiency of the services which include the establishment of an operation control room at Riyadh, and the establishment of postal zones at Mecca,

---

75 MEED, vol. 24, no. 45, 7 November 1980, p. 57.

76 Saudi Arabia: Third Development Plan 1980-85, p. 428.

77 Ibid., p. 431.

78 "Third Plan to Harness Inflation", Arab Economist, vol. XIII, no. 142, July 1981, p. 22.

Tabuk, Hail and Baha. In addition, ten mobile post offices for use during the Hajj and in rural areas will also be purchased along with 850 other vehicles. Additional post boxes, franking machines, and stamp dispensing machines will be provided and one automatic sorting machine will be installed in the Third Plan period.[79]

(iii) Electricity

Electricity plant was first installed in Mecca in 1950. In addition, power generating plants were installed in and around the royal palace at Riyadh followed by installations at Jeddah and Taif. Most of the power generating plants were privately owned.

The government provides interest free loans as an incentive for generating and selling power in the cities. However, the government sponsored General Electric Corporation to supply electricity to rural and remote areas of the Kingdom.

To achieve economies in electricity generation, a consolidated electric company was established in the Eastern Province during the Second Plan period, followed by one in the Central Province involving amalgamation of the licensed power companies as well as projects of the General Electricity Corporation in Riyadh ad-Qasim areas. A similar consolidated Co.

---

79 Saudi Arabia: Third Development Plan 1980-85, p. 435, and MEED, vol. 24, no. 45, 7 November 1980, p. 57.

is being planned for the Southern Province.[80]

In recent years, electricity generation has been expanding substantially to cope with the ever growing demand resulting from the industrialization programme in the Kingdom. Gross generating capacity increased from around 244 MW in 1970 to 6527 MW in 1980. The Third Plan aims to raise the generating capacity to 15320 MW, to fulfil the needs of 1.3 million subscribers.[81] It is expected that more than 80 per cent population of the Kingdom will have electricity facility by the end of the Third Plan.

(e) Entrepreneurship and Management

Entrepreneurship is one of the important factors of production and its developmental role is closely tied with the industrialization process. With the low percentage of education shortage of manpower and skill, and inadequate science and technological capacity in the Kingdom, there is also scarcity of indigenous entrepreneurship which influences the pattern of industrialization and encourages the participation of foreign enterprises. The government adopted the laissez faire policy for encouraging the foreign enterprises to accelerate the pace of industrial development. One of the objectives of the

---

80 "Second Five Year Plan Achievements", Dawn, 31 August 1980.

81 "Saudi Arabia : Third Plan to Harness Inflation", Arab Economist, vol. XIII, no. 142, July 1981, p. 27.

government behind attracting the foreign investments and enterprises has been not only the needed technology, industrial know-how and management expertise that come with it but also to provide training and experience to the local Saudis. For instance, the Arabian-American Oil Company (Aramco)[82] has been giving technical advice and support to the existing centres in the vicinity of its installations, and new groups of Saudi entrepreneurs have developed from the example set and advice given by Aramco.[83] In fact, Aramco is playing very significant role in Saudi economy. It has been involved with the task of creating infrastructure for the two industrial poles around Jubail on the Gulf and Yanbu on the Red Sea, planned under the Second Development Plan.

After the hike in oil prices in 1973-74, a large number of foreign enterprises have entered into agreements with Saudi government to form joint enterprises. The government has given extraordinary incentives to foreign owned

---

82 The Arabian-American Oil Company (Aramco), which pumps 97 percent of the country's oil , is originally a consortium of four biggest United States oil companies viz., Mobil, Exxon, Texaco and Standard Oil of California. In 1973, Saudi Arabia acquired a 25 per cent interest in Aramco's crude oil, concession rights, facilities and production. In 1974, the government increased that interest to 60 per cent and in 1980 acquired the remaining 40 per cent. ("For the First Time, Saudi Search for Oil Appears Strained", International Herald Tribune (Hong Kong), 11 February 1982).

83 George A. Lipsky, Saudi Arabia: Its People, Its Society, Its Culture, (New Haven: Hraf Press, 1959), pp. 151, 227, 237.

enterprises, and has exempted them from restrictions on the movement of their funds into or out of the country, and also has given assurance to foreign investors that capital and earnings may be freely repatriated.

To encourage the indigenous entrepreneurs, the government has laid stress on the free enterprise system in its five-year development plans. Heavy emphasis has also been given to individual incentives, private ownership of production, capital diffusion, decentralization and privatization as a means to promote the free-enterprise system.[84] Among these five goals priority has been given to private enterprises — large and small companies, family business and individuals. The government designed a programme for small private enterprises to provide incentives to Saudis as an individual entrepreneur or as a member of a private cooperative by providing cheap energy. The incentives are given in the form of subsidies with hydrocarbon fuels at cost price, with interest free longterm loans upto 75 per cent of the capital cost. Remaining 25 per cent is obtained by government participation. Likewise, by encouraging small enterprises the government aims to widen the base of private ownership. The emphasis on decentralization is given to improve general environment to facilitate the transfer of ownership of the large enterprises

---

84 For details see Crane (R.D.), Planning the Future of Saudi Arabia (London: Praeger, 1978), pp. 66-78.

that the government develops and supports from its oil-revenues to the private sector.[85]

(f) Technology

Apart from investment capital and entrepreneurship, another factor that plays a significant role in the industrialization process is the technological base of the economy. Since Saudi Arabia possesses little technological capability,[86] the diversification of resource base depends to a great extent on the transfer of technology from the industrialized countries. So, government of Saudi Arabia has laid emphasis on the transfer of technology by "foreign collaboration involving the payment of royalties, expertise fees, design and engineering fees, the import of capital equipment, the training of technical cadres in industrialized

---

85 Ibid., p. 72.

86 "A national technological capability implies: the acquisition of knowledge and skills by national manpower, the establishment of appropriate institutions and facilities, and the formation and implementation of technology policies with respect to planning, designing, manufacturing, managing, operating, servicing, developing and researching whatever is deemed essential" (Dr A.B. Zahlan, "Constraints on the Acquisition of Technology", in May Ziwar-Daftari, ed., Issues in Development: The Arab Gulf States , (London: M.D. Research and Services, 1980), p. 76.

countries, and the luring of experts."[87]

This indirect transfer of technology through direct investments of foreign enterprises from the industrialized countries has mostly taken place in the post oil-boom period of 1973. In consequence of the industrial policy (1974), the number of foreign enterprises increased to a considerable extent through licensing agreements with local companies. Mostly technology is imported through turnkey contracts in a packaged form.[88] The foreign companies or agents of foreign companies conduct the technology identification, analysis and management. The foreign enterprises dictate their own terms often putting restrictions on the utilization, adaptation and improvement of technology. The continued dependence of the Kingdom on the import of technical know-how, technical management and technical innovations give a powerful and dominant position to the industrialized countries to influence the economy. Moreover, since the imported technology from the advanced industrial countries is not compatible with the

---

87 R. Van der Graaf, "The status of Science and Technology in the Western Asia Region" (NRST Division/ECWA) in A.B. Zahlan, ed., Technology Transfer and Change in the Arab World: The Proceedings of a Seminar of the United Nations Economic Commission for Western Asia (Beirut, 1977), (Oxford: Pergamon Press, 1978), p. 56.

88 Packaged technology constitutes not only the finished plant but also embodies the work that has gone into its design, the selection of parts, processes, purchasing, creation and commissioning (Zahlan, n. 87, p. 56).

resource endowment and the socio-economic structure of the Kingdom, much of it is either wholly or partly unsuited to its needs. Hence, in recent years Saudi Planners have laid stress on the development of appropriate science and technology as well as institutionalization of technology.

It was recommended in the Arab Oil Conferences started in 1959, that Arab Oil Producers should establish specialized institutions for training research and development in the oil industry. The same theme was repeated in subsequent conferences. A meeting on research coordination was also held in Riyadh in 1974 where-in a ministerial committee was formed to find out the feasibility of having a science Policy Planning Council with the following functions: (1) determine priorities for the development of science and technology in relation to developmental needs, (2) formulate and continuously update a science and technology plan, (3) initiate a grant programme to support research, (4) identify and appraise problems that hinder scientific technolcgical development, (5) upgrade and increase the level of the existing potential, and (6) formulate and coordinate science policy.[89]

Therefore, the Saudi-Arabian National Centre for Science and Technology (SANCST) was set up in cooperation

---

89 Joseph S. Szyliowicz, "The Prospects for Scientific and Technological Development in Saudi Arabia", International Journal of Middle East Studies, (Cambridge), vol. 10, no. 3, August 1979, p. 362.

with the US National Science Foundation and the US Department of Treasury in 1977, to implement national science and technology policies aimed at promoting and coordinating the scientific research in accordance with Kingdom's social and economic development requirements.[90]

In the Second Development Plan (1975-80), programme and project policies related to development of science and technology and the possible constraints thereto were outlined. Further, it was also proposed to utilize the solar energy. With that end in view, a solar energy group was set up in the University of Riyadh (College of Engineering).

In the third five year plan (1980-85), emphasis has been laid on improvement of scientific and technological information through science clubs, modern research laboratory facilities, university science and technology research programmes and applied research grants programmes.[91]

Hence at the Islamic solidarity conference on science and technology, held in Riyadh in January 1979, stress was laid on a scientific renaissance and scientific research linked with the indigenous technological capability without which the country's development goals cannot be realized.

---

90 Saudi Arabia : Third Development Plan 1980-85, p. 457.

91 MEED , vol. 24, no. 45, 7 November 1980, p. 58.

There is no doubt that Saudi diversification goal depends upon generating its own technology but it still lacks both scientific and technological infrastructure. The main constraints are the lack of interest among the indigenous population as they think that anything can be purchased with the oil income.

(g) Size of the Market

The size of market plays a vital role in determing the composition and nature of industrial production. The size of a market depends not only on the number of people and their disposable income, but also on their willingness to purchase a particular commodity. It also depends on such factors as the price and quality of the particular product.[92]

Saudi Arabia has small population but the purchasing power capacity of the indigenous population is very high. However, this high purchasing power does not have a favouring effect on the marketing of the industrial products because the established industries are largely export-oriented. Moreover, the free imports of foreign goods and high tendency of the local people for buying the imported goods of high quality also limits the marketing prospects of the industrial products in the domestic market.

---

92 For details see Gunnar Myrdal, Asian Drama: An Inquiry Into the Poverty of Nations, vol. I, (London: Penguin, 1968), p. 656, n. 1.

(2) Political Determinants

Like many developing societies, political factors play important role in influencing the industrialization process. In particular, the scope and role of the State in the process of industrialization is determined by the nature of political institutions. In Saudi Arabia, despite the commitment in favour of free market forces, the State retains the commanding height of the economy. This is true of not only oil sector but industrial sector also.

The government formed the General Organization for Petroleum and Minerals (Petromin) in November 1962 for the development of oil production and refining as also for the establishment of basic industries based on petroleum and minerals. It increasingly involved itself, in accordance with the policy outlined by the Ministry of Petroleum and Mineral Resources in May 1973, in international marketing of crude oil and gas and also negotiating for the overseas refining of Petromin crude. The main objective behind the creation of Petromin was to ensure the effective participation of the State in industrial promotion and in the channelling of foreign and domestic investment into vital and basic industries.[93]

---

93 United Nations: Industrial Development in the Arab Countries, (New York, 1967), p. 115.

In 1976, the Saudi government established a separate State Corporate, the Saudi Basic Industries Corporation (SABIC) to build up an industrial base in the kingdom. The SABIC tookover from Petromin the task that it had undertaken for hydrocarbon and basic metal industries, and concentrated on planning programmes and projects in joint ventures with the interested international companies to establish and operate hydrocarbon based industries, basic metal industries and any other basic industries which the private sector might be unwilling or unable to establish.[94] But in practice the decision making by the SABIC in regard to planning programmes, selecting joint venture projects, and marketing of products is in fact, more or less, subservient to the dictates of the ruling family. The non-participation of the masses in the decision making process of industrial planning and policies or in other words the imposition of industrial planning policies from the top created dissatisfaction, dissension and instability. Thus the political stability and commitment of the leadership for industrial planning and development are the major political factors shaping the pattern of industrialization.

(a) Political Stability

Political stability is a necessary precondition for any longterm process of industrialization. Stability can be

---

94 For details see Saudi Arabia: Third Development Plan 1980-85, p. 222.

achieved either through an elective political system or through autocracy. In elective system, industrialization can be of lasting nature because it enjoys popular support of the majority of the population thus engendering mobilization and participation of masses which promotes the industrialization process. On the contrary, the stability achieved through undemocratic means or autocracy cannot be a promotive factor of industrialization because due to the lack of popular will, support and non-participation of the masses can create unrest and instability.[95]

The political system of Saudi Arabia is patriarchal oligarchy. Political power is concentrated in the hands of the royal family, consisting of 4000-5000 direct descendants of the fertile King, Abd al-Aziz, the founder of the Kingdom who died in 1953. The King had adopted the strategy to strengthen his position by inter-marriage between al-Saud and the tribal leaders. Abd al-Aziz himself took wives from the leading families of each of the major tribal groupings.[97]

---

95 For details see Yusif A. Sayigh, The Determinants of Arab Economic Developments, vol. II, (London: Croom Helm, 1978), pp. 96-97.

96 "Obsense ways of Saudi Monarchy", Economic Times (New Delhi), 8 July 1977.

97 Nidlock, n. 1, p. 90.

Links were further strengthened by providing subsidies directly to the tribal leaders for their own use and for distribution within the tribe. The relationship between the King and the influential family — members of the great religious reformer, Mohammed Ibn Abd al-wahhab also played a crucial role in the strengthening and centralising of political power. The extent to which power is centralised is evident from the fact that the members of the royal family served a few years ago as ministers of Interiors, Defence, Finance, Foreign Affairs, as deputy ministers of the first two and of education, Petroleum, Information, and Petromin, as governors of the four provinces, and as deputy governors of Mecca and Riyadh. The National Guard was also commanded by a member of the family and his deputy was another relative.[98]

Since the high offices of the government are held by the members of the Royal family, the King and his royal kinsmen unquestionably have top-decision making power in the allocational pattern of the government revenues. But in practice the King takes decisions in consultation with the leading members of his family (known as the Lajnat al-Alya or higher committee), the Ulema, and the tribal leaders as well as other influential merchants.

The elite based decision making has affected the investment pattern and strategy of industrialization. A

---

98 Szyliowicz, n. 89, p. 368.

large part of the government revenue has been spent on security and subsidies to gain support and acceptance of the indigenous population. However, the government has never involved the masses into the State's affairs nor any of these groups has shown any interest in the long term industrial and economic development planning for the betterment of the indigenous poor population. The growing social discontent was fanned with the accumulation of oil-revenues and its misutilization on luxury projects such as the two palaces which the King Saud had constructed for himself in al-Riyadh and Jeddah at a cost of $ 50 million.[99] As a result of this lavish unproductive expenditure the Kingdom had been indebted to the tune of $ 310 million in 1958.[100] The deteriorating economic and social conditions necessitated the government to adopt a fundamental change in its domestic policy that may defuse the social discontent and satisfy the majority of the indigenous population and give stability to the regime. As a result the change in the leadership of the government with crown Prince Faisal as a head of the government (during the crisis of 1958 and again in 1961, and finally the King in

---

99 Niblock, n. 1, p. 96.

100 Yusif A. Sayigh, "Problems and Prospects of Development in the Arabian Peninsula", International Journal of Middle East Studies, vol. 2, April 1971, p. 46.

1964 in place of Saud)[101] brought political stability in the Kingdom, and paved the way for industrialization. But later on, during the plan period much investment has been made on industrialization with a view to gain political support which, however, proved otherwise and brought a sense of insecurity and political instability.

(b) Leadership's Commitment to Industrialization

In a society like Saudi Arabia where the processes of industrialization have been significantly inhibited by social and political factors, commitment of leadership to industrial culture has decisive influence in making of any society of industrialization. In this context, in fact, the role of King Faisal and his predecessors provide brilliant illustrations. Under the leadership of King Faisal, the Saudi government made the commitment to expand the industrial development alongwith the extension of infrastructure, building of administrative institutions as well as the autonomous organizations, establishment and improvement of education and technical training centres, development of water resources and generation of power, and also a general survey to search the mineral resources of the Kingdom. His leadership's commitment as a determinant of industrialization is manifested from his ten

---

101 W.A. Beling, "Introduction" in W.A. Beling, King Faisal and the Modernization of Saudi Arabia. (London: Croom Helm, 1980), p. 11.

point programme, announced on 6 November 1962, in which he pledged the country's resources and economy, in particular roads, water -resources, heavy and light industries, and self-sufficient agriculture.[102] Faisal curbed the reckless spending of King Saud and members of the royal family, and thus made a distinction between the ruler's private purse and the public treasury that was unknown till then. He repaid the domestic and foreign debts and stabilized the economy.

Faisal's commitment to industrialization is also expressed from the direction of investments allocated to the public sector as well as the private sector. The investments made in the public sector include the programme of building of institutions, establishment and improvement of educational and research facilities, development of manpower training and modernisation of administrative machinery, while the investments in the private sector are allocated in the form of subsidies and other related facilities as an incentive to promote Saudi individual entrepreneurs and small private enterprises.

Another manifestation of the leadership's commitment to industrialization is expressed from the longterm perspective

---

102 For details see Ramon Knauerhase, The Saudi Arabian Economy, (New York : Praeger, 1975), pp. 52-53; and Gerald De Gaury, Faisal, King of Saudi Arabia (London : Barker, 1966), pp. 147-55.

industrial planning of Saudi Arabia. First as a Prime Minister, Faisal established a Committee for Economic Development at the end of 1959 and a supreme council for Planning in January 1961. Lateron as a King in 1964, he reorganized the committee for Economic Development, and likewise formed the Central Planning Organization (CPO) to gear up the process of industrialization.

The Planning policies elaborated under the leadership of King Faisal, set the pattern of industrialization of Saudi Arabia. The role of the planning as a determinant of industrialization can be examined from its strategy to set the industrialization target with the identification of the sector capable of leading industrialization drive along the specified priorities. The planners of the Kingdom so devised the industrial development planning as to diversify the resource base of the economy in order to reduce its exclusive dependence on oil. They gave first priority to the development of social and physical infrastructure to build up a framework of the industrialization target. The basic objective of the industrial planning is to modernize the economy while strictly preserving the traditional social and cultural values of the Saudi Society. They adopted the strategy to familiarize the people of Saudi Arabia to the modern technological society rather than its exposure to them at a large scale. Educational institutions, training centres as well as the communication network were planned to be expanded on priority basis in a drive to mobilize and

involve the indigenous population towards the industrialization.

(3) Socio-Cultural Determinants

In a tribal society like Saudi Arabia, socio-cultural factors play equally important role in influencing the process of industrialisation. The pattern of industrialization is determined by the interaction between economic and socio-cultural changes. This is a two-way process. Not only the change in the mode of production brings about a change in the socio-cultural environment of a society, the socio-cultural factors also influence the shape and direction of the economic development. Many of the problems in the process of industrialization are rooted in its social structure.

(a) Social Structure

The structure of the Saudi Society lies in its historical and contemporary nomadic and tribal social behaviour influenced by the teachings of the religious reformer, Sheikh Mohd Ibn Abd al-Wahhab.[103] The economic life of most of the nomads were depended either on herding or on subsistence

---

103 In the 18th century, when the first Saudi state was established, an alliance was made between the religious reformer Sheikh Mohd. Ibn Abd al-Wahhab and the Bedouin chief Mohammed Ibn Saud. This alliance was based on the Ibn Saud's commitment to use his military prowess to realise the rigorous religious reform advocated by Abd-al-Wahhab.

agriculture as the kingdom had only 0.2 per cent cultivable land until the 1940s.[104] The Hijaz was the only developed region as a centre of international trade through the Red sea and also the annual pilgrimage, Al-Haj. They had purely formal relations with the foreigners and did not adopt any of their social and cultural values but rather strictly adhered to their own traditions and social customs of yore. Still they have very strong sentiments for the loyalties to the family, inter-marrying and tribal caste systems.

In the Saudi nomad society, the main concern of the tribe was to look after the economic, military and political affairs. Tribes were defined by kinship, by real or imagined descent from a common anscestor through the male line, and consisted of groups of families who inter-married and cooperated in economic activities."[105] Power within the tribe rested solely with the head of the male leaders of certain families, called the Sheikh. The concept of property was not fully developed and the members of the tribe had almost equal right to share the land and water resources as traditionally defined. Movable property like animals, tents and furnishings were owned either by the individual family

---

104 Middle East Year Book, 1980, p. 214.

105 Fred Halliday, "Saudi Arabia: Bonanza and Repression", New Left Review (Bondon), no. 80, July-August 1973, p. 6.

or by the tribe as a whole.

It is evident from above that tribals were generally accustomed to share equally the benefits of the available natural resources like pasturing, fishing etc. This right of equal opportunity was based on traditional practices as well as the religious tradition that people are sharers of water, pasture and fire.[106]

Thus, when the oil revenues began to accumulate the tribal people with a belief in their right to share the oil wealth, and with the nomadic concept of the role of the government demanded for the direct distribution of oil revenues.[107] The nomads did not regard the state as an institution meant to undertake the long term social and economic development of the Kingdom. This new concept of state as an agent of economic development was foreign to them mainly because of their being isolated from other parts of the world and illiteracy enmass.

Therefore, it is easy to understand why Saudi government is giving priority to provide other basic facilities like health, sanitation, water and power at free or at subsidized rates in a desire to satisfy the indigenous population for their share of benefit from the oil revenues.

---

106 Kuwairi, n. 25, p. 164.

107 Kuwairi, n. 25, pp. 164-5.

(b) Education

Education plays a significant role in the process of industrialization as it influences the degree of adequacy of manpower resources. The relevance of education as a means of industrialization is to be viewed in terms of vocational-technical training catering to a variety of skills — technical, professional, supervisory, administrative and executive — needed to achieve the industrialization objectives. But since the educational system — curriculum, institutions and methodology — is closely linked with the socio-cultural environment of the society, Saudi Arabia has laid more emphasis on religious education than the development oriented scientific and technical education so as to preserve the traditional social and cultural values.

The first educational institution for higher learning was the Shariah Islamic Law College of Mecca established in 1949. The education system was only concerned with the study of classical Arabic and Arab history, and memorizing the Quran and the Hadith. Moreover, girls education was practically non-existent.

The first girls educational school "Dar al-Hanan", was created at the behest of Princess Iffat in Buraida in 1956. Boy's educational institutions have also been expanded considerably. While this has broadened the educational base in the Kingdom, the curricula especially in case of girl's

education has remained restricted to the courses in religion, language, history and home-economics at the expense of science, mathematics and foreign languages or that the methods of instruction still rely heavily on learning by rote and the 'imparting of knowledge by teachers' rather than analysis, experimentation, participation and dialogue.[108]

The first five year development plan was partially successful, particularly in the field of education and technical training. And therefore, in the Second Development Plan greater emphasis was laid on providing free education at all levels and by almost doubling the number of schools and training Institutes. At the end of the First Five Year Plan more than 500000 students were enrolled in Public schools and Training Institutes.[109] In a drive to expand education, the government created more technical training institutes at different places to meet the needs of the industrial sector particularly the oil industry, for example, the Royal Technical Institute in Riyadh, the Industrial Institute at Jeddah, the secondary vocational school at Medina, and the secondary vocational school at Hofuf.

During the last three decades, the government has

---

108 Sayigh, n. 14, p. 175.

109 "Saudi Arabia: Education - A Top Priority", Arab Economist, vol. X, no. 110, November 1978, pp. 27-28.

substantially expanded educational institutes, upgraded the curricula, and improved teaching methods and techniques, but a large number of Saudis especially belonging to the more elderly generations have remained illiterate. They have not acquired adequate knowledge and skills, analytical power and capability to understand the new environment created by industrial development.

(c) Social Attitude And Technological Change

Majority of the indigenous population, because of the limited exposure to modern civilization, lack a sense of understanding and acceptance of modern ways of life and new technology.[110] Although the nomads, who form the backbone of the tribal structure, have abondoned their traditional life style and their members have decreased during the past half century from 50 per cent of the population to less than 10 per cent[111] as they have settled or semi-settled in villages and towns yet they still have strong ties with tribal mentality. Ironically, present ingrained social habits militate against any radical change towards modernization. The resistance to the modernity or advanceness of technology influences the process of industrialization. This may be

---

110 Technology refers to the level of knowledge in a system about how to control and manipulate the environment.

111 Middle East Year Book 1980, p. 214.

illustrated by strong resistance of the religious tribal community to such innovations as the telephone, radio or TV etc. and condemnation of these scientific innovations as an instrument of devil. The tribal attitude towards the technological change is reflected in another incident when King Faisal had to bring out army to curb the large-scale violence in protest against the establishment of the first girls school in Buraidah in 1956. But the expansion of education, communication, and speedy industrial and economic development are indisputably leaving a deep impact on the traditional social structure and eroding the resistance appreciably. The government is trying to speed up the process of transition by importing advanced technology at large-scale and attempting to familiarise them with modern scientific environment. But this alone cannot bring a change in their outlook and attitude towards technology though they may feel the impact of this vast exposure to the new technology.[112]

(d) Social Discontent

The imbalanced industrial development and rapid technological change in a tradition bound society causes a regional disparity and income inequality. The social distress thus generated deeply affects the industrialization process as economic progress can never be achieved without a social and political stability.

---

112 Sayigh, n. 94, p. 118.

In case of Saudi Arabia, the rapid change from a traditional economy based on herding to a modern economy based on imported advanced technology has caused a serious social discontent which in turn has influenced the process of industrialization.

The social discontent as a determinant of industrialization is obvious from the incident of November 1979 when the Grand Mosque of Mecca was besieged by the Islamic fundamentalists under the leadership of Juhaiman al-Otaibi.[113] In consequence, the Saudi government had to slowdown the pace of industrial development at the end of the Second Development Plan. Likewise, the large influx of labour and experts is also considered a great threat to their social and cultural values. In view of the growing social tension, great emphasis is laid, in the Third Development Plan, on the reduction in the number of expatriates by allocating lesser amount of investments for the construction sector.

In the light of the above discussion it is concluded that all the determinants are interdependent and their cumulative interaction shapes the pattern of industrialization. Each of the determinants is equally important but is not sufficient enough to influence the process of industrialization

---

113 For details see James Buchan, "The Mecca Siege: Government Prestige Suffers A Severe Blow", Financial Times, 28 April 1980. Reproduced in Strategic Digest, vol. X, no. 6, June 1980, pp. 303-6.

independently. The economic determinants no doubt play a primary role in determining the strategy of industrialization. Next in importance are the political factors which create political stability and influence some crucial decisions like channelization and utilization of economic resources in accordance with the factor endowments. Finally, the socio-cultural determinants deeply affect and retard the pace of industrialization.

The factors within the three determinants influence the industrialization process in varying degrees. Of the economic determinants, the most important is the hydrocarbon though of late the manpowers and physical infrastructure have acquired greater significance in determining the strategy of industrialization. Of the political determinants the commitment of leadership to industrialization is more powerful factor because of the concentration of political power in the hands of the royal family which plays a crucial role in making investment decisions, planning appropriate industrial programmes and policy, and mobilizing popular support and will for industrial development. Lastly, of the socio-cultural determinants, education acquires greater significance in view of the mounting pressure of industrialization on existing social institutions. It is only through education that the awakening could be created to accommodate the social needs of industrialization in an orderly way which is the objective of Saudi planning.

Chapter III

INDUSTRIALIZATION UNDER PLANS

From the preceding account of various determinants — economic and non-economic — influencing the development pattern in general, and industrialization in particular, it becomes clear that comparedto other developing countries industrialization has to play more vital role in Saudi Economy. In particular the dominant presence of oil sector in the economy, puts additional burden on industrial policy. Evidently the task before the industrial policy is to build a non-oil economy on the strength of oil-sector itself. And this has to be obtained in a specific time frame because oil is a non-renewable resource. It is very delicate task because there are all possibilities that in the process of developing the industrial structure around the hydrocarbon sector, the economy might become more dependent on it and the non-oil sector might fail to register the requisite growth. In other words, the probability of the oil sector inhibiting the growth of non-oil sector cannot be ruled out.

Apparently it seems that the rulers of Saudi Arabia are seized of the situation. It becomes clear from the Saudi Plan declarations that the government is keen to diversify the economic base of the society and develop a self-reliant economy before oil is exhausted. It intends to take maximum advantage of its economic position and wants to make Saudi Arabia a leading member in the field of petrochemical industries. It is expected that hydrocarbons will act as a

leading sector in export oriented growth strategy. It will generate requisite forward and backward linkages thereby producing necessary spread-effects. It is also assumed that hydrocarbon-based growth will trickle down to other sectors and regions. This will reduce regional disparities and unleash the process of development. Saudi Arabia has completed two five year development plans and is in the mid of the Third Plan. During last ten or twelve years of planning Saudi economy has undergone basic changes. Though it is early, yet signs of these changes have started appearing in the horizon of Saudi society. To understand the role of industrialization in the process of development, it would be relevant to have a brief survey of Saudi industrialization during the plan period.

First Development Plan (1970-75):

The First Five Year Development Plan covers a period from 1970 to 1975. It was submitted to the King on 16 August 1970. The development plan was prepared at a time when the country was facing severe financial constraints. Its balance of payment was in deficit in the previous two years because of lavish expenditures of the royal family. The 1967 Arab-Israeli war also contributed in depleting the treasury. The total planned expenditure for the First Plan period was set at SR 41.3 billion out of which total allocations proposed for the industrial sector amounted to SR 1098.5 million, as shown in Table 3-1.

TABLE 3.1

FIRST PLAN : ESTIMATED FINANCIAL ALLOCATIONS

Functions of Expenditure	SR Millions (current prices)	Percent
Administration	7,717.4	18.6
Defence	9,555.0	23.1
Education, Vocational Training and Cultural Affairs	7,377.7	17.8
~~Cultural Affairs~~	1,921.1	4.7
Health and Social Affairs	4,572.3	11.1
Public Utilities and Urban Development	7,476.5	18.1
Transport and Communications		
Industry	1,098.5	2.7
Agriculture	1,467.7	3.6
Trade and Services	127.3	0.3
Total	41,313.5	100.0

Source : Kingdom of Saudi Arabia : Central Planning Organization, First Development Plan 1970-75, (Riyadh, 1970), Table 2, p. 43.

As the following Table 3.2 shows the percentage share of financial allocations for industry was likely to increase from 1.4 percent in 1969-70 to 2.7 percent towards the end of the Plan.

TABLE 3.2

CHANGE IN PERCENTAGE SHARES OF FINANCIAL ALLOCATIONS FROM 1969-70 TO THE LAST YEAR OF THE PLAN

	Percentage share 1969-70	Percentage share Last year of Plan
Administration	22.3	18.3
Defence	30.7	21.3
Education, Vocational Training and Cultural Affairs	12.0	21.7
Health and social Affairs	4.4	5.0
Public Utilities and Urban Development	9.7	10.9
Transport and communications	15.7	16.0
Industry	1.4	2.7
Agriculture	3.6	3.8
Trade and Services	0.2	0.3
Total	100.0	100.0

Source : Kingdom of Saudi Arabia, Central Planning Organization, First Development Plan 1970-75, (Riyadh, 1970), Table 3, p. 44.

First priority was given to the expansion of education, vocational training and cultural affairs. Emphasis was laid on the improvement of administration, and development of transport and communications. The government was aware that

the industrialization requires certain preconditions without which industrial planning cannot be implemented successfully. Lack of adequate physical infrastructure as well as efficient government services, management and administrative bodies can impede the developmental process, and can lag behind the desired industrial goals.

The prime objective of the industrial planning, in the First Plan, was to realize the economic potential of the Kingdom for industrial development in order to attain sustained growth and diversification of the economy. More specifically the objectives as documented in the First Development Plan for industrialization were as follows:[1]

1) Diversify the economic activities to reduce the dependence on petroleum as a major earner of foreign exchange, thereby leading to a more balanced economic activity,

2) Secure regional balanced development of industry consistent with the economic well-being of the Kingdom,

3) Increase the sale of petroleum products and fertilizers, and initiate the sale of petrochemicals and minerals in world markets,

4) Encourage industrial development by announcing an explicit pricing policy for refined petroleum products and natural gas based on the existence of surplus reserves, and supply them to domestic industrial users at actual cost,

5) Promote exploitation of the mineral prospects already identified and investment in exploration of other mineral

---

1 Kingdom of Saudi Arabia: Central Planning Organization, First Development Plan 1970-75, (Riyadh, 1970), p. 217.

deposits by encouraging foreign mining companies and national private capital to participate in new mining ventures,

6) Continue accumulating information on the geological characteristics of the areas of mineral potential in the Kingdom and on the occurrence and extent of mineral deposits by proceeding with geological surveys and explorations,

7) Expand the capacity of Government and Quasi-government agencies to assume responsibility for geological surveys and explorations now being performed by foreign missions,

8) Replace imports through local production and thus conserve foreign exchange earnings,

9) Encourage fuller utilization of capacity existing in the private manufacturing sector,

10) Increase productivity through closer approach to optimal size of factories and promotion of interdependence of industries, and adopt the principal of integration in their operations,

11) Improve the productivity of the construction industry and raise the standards of construction,

12) Reduce dependency on foreigners by on-the-job training, training in vocational schools and in other institutions,

To achieve these goals for the industrial development, the First Development Plan for industry envisaged a programme for the completion of construction operations at the industrial

estates in Jeddah, Riyadh and Dammam. It planned to expand the crude oil refineries in accordance with the world and domestic demands. Petromin was accorded the responsibility for building two oil refineries — a new refinery in Riyadh and a second refinery in Jeddah. In addition, it had further to set up new bulk plants in Tabuk, Jaizan, Qasim and Khamis Mushayt to improve the distribution of petroleum products. Besides, it also had to construct a pipeline (with an initial capacity of 19 million cubic feet per day) from Uthmania to Riyadh to supply natural gas for domestic as well as industrial consumption. This was expected to be operational by 1973.

The Plan further proposed to set up ~~petrochemical plants~~ a plant for the extraction of sulphur in Abqaiq and other petrochemical plants and ~~intermediates~~ in Dammam. Other projects for production of Ammonia, Urea, Phosphoric acid & Potash were also proposed to be established for the expansion of fertilizer industry.

So far as the mineral based industries are concerned, mineral exploration and exploitation programs have been planned to be carried out by the Directorate General of Mineral Resources (DGMR) and the related agencies such as United States Geological Survey (USGS), Bureau de Recherches Geologiques et Minieres (BRGM), Japanese Geological Mission (JGM), Arabian Geological and Surveying Co. (ARGAS), Arabian Drilling Co. (ADC), and Saudi Arabian Mineral Exploration

Co. (SAMEX) for geological mapping, basic geological research and marine geology to investigate and collect information of mineral deposits in the Kingdom.[2] To increase the pace for rapid mineral explorations, a Saudi Mineral Exploration Company was proposed to be established during the first year of the Plan, and that its power would be transferred to the DGMR by the end of the plan period.

Besides, the feasibility of developing the basic metal industries like iron and steel as well as aluminium have been envisaged to broaden the base of the Kingdom's economy. Petromin was executed to expand the steel rolling mill which was established in Jeddah in 1967, and also to develop an integrated iron ore mining and steel manufacturing industry during the plan period.

In the field of manufacturing (excluding petrochemicals, fertilizers, and basic metal industries) proposals were made to encourage the private manufacturing sector. The plan also provided guidelines to the private sector for investment opportunities in various plants like cotton textiles, plumbing tools, batteries, canning vegetables, packing and shipment of fish, a plant for the production of medical tablets, and paper-product industry in the Western Province.[3]

---

2 Saudi Arabia: First Development Plan, 1970-75, p. 222.

3 Mallakh(Ragaei El), Saudi Arabia: Rush to Development, (London: Groom Helm , 1982) p. 147.

The planners prepared a draft for a National Industrial Policy[4] to provide information and technical assistance to encourage and support the private enterprises for their greater participation in the industrialization process, and thereby to improve its efficiency and productivity.

In order to implement the programme effectively, the Saudi planners adopted the strategy to create three industrial estates — one each in Riyadh, Jeddah and Dammam. The estates in Riyadh and Jeddah were to be completed by 1970 and in Dammam by 1971. The plan proposed to ~~form~~ expand the Industrial studies and Development centres (ISDC)[5] to carry out feasibility studies and to study the desirability of additional industrial estates, and also to provide technical assistance to the private sector. It was further proposed that I.S.D.C. would organize a ~~committee~~ management training unit for the promotion of industrial activities. In addition, an Industrial Bank[6] was planned to be established in joint venture with minority foreign participation so as to provide strong and efficient management, and also to attract foreign capital into the Kingdom. The Bank was aimed at providing financial assistance for large and medium scale industries, and subsidized credit for small scale industries.

---

4 Saudi Arabia: First Development Plan, 1970-75, p. 239.

5 Ibid., p. 242.

6 For details see Saudi Arabia : First Development Plan 1970-75, p. 243.

Further in the First Plan, Labour Legislation,[7] Mining Code and Foreign Capital Investment[8] Regulations were to be formulated and the old ones to be reviewed to expand the volume of the construction industry, and also to promote the investments by private and quasi-government sectors. A draft was prepared to encourage the expansion of industries and attract foreign enterprises for their participation in joint venture projects like Petrochemical , fertilizer and basic metal processing plants. The draft statement outlines the following forms of encouragement :[9]

1) The government will supply available information to investors and industrialists, such as results of industrial surveys, feasibility studies and similar economic data.

2) Imported equipment and raw materials for industry will continue to be duty-free.

3) Tariffs will be established whenever sufficient economic and social causes exist to protect domestic industries from comparable imported finished products.

4) The government, whenever rational justification exists, will partially subsidize training for Saudi employees.

---

7 For details see George M. Baroody, "The Practice of Law in Saudi Arabia", in Willard A. Beling, ed., King Faisal and the Modernization of Saudi Arabia, (London: Croom Helm, 1980), p. 122.

8 Ibid., p. 120; and Saudi Arabia : First Development Plan 1970-75, p. 239.

9 Saudi Arabia: First Development Plan 1970-75, p. 239.

5) Land will be provided in industrial estates and elsewhere on nominal rentals.

6) Tax holidays will be offered for company income.

7) Low-cost loans and operating subsidies will be made available under certain conditions.

8) The government will give preference to locally manufactured products in its purchasing policies.

9) Quantitative restrictions or price control will be avoided except where competition cannot be effective as in the instance of a natural monopoly.

It is obvious from above that the government considered to provide various facilities to the private enterprises to promote the manufacturing industries. But the major constraint in the implementation of the industrial plan was the shortage of manpower — both skilled and unskilled, which the government decided to import from abroad. It was estimated that during the plan period the number of skilled and semi-skilled workers which will have to be recruited from outside the country, would be from 30000 to 35000.[10] Simultaneously the plan laid emphasis on the development programme for education and training of Saudi nationals. Hence the First Development Plan for industry was devised to lay a foundation for sustained economic growth.

Second Development Plan (1975-80):

In July 1975 when world economy was in great crisis

---

10 Saudi Arabia: First Development Plan 1970-75, p. 86.

due to sudden and steep oil price hike, Saudi Arabia launched the Second Five Year Development Plan (1975-80). The plan envisaged a total investment of SR 498.2302 billion at 1974-75 constant prices. Of the total outlay the petroleum sector account for SR 1000.9 million, mining sector SR 777.4 million, manufacturing sector SR 1306.2 million, and construction sector SR 539.7 million. The allocations of the main development programmes are shown below in table 3.3.

TABLE 3.3

SECOND PLAN'S ESTIMATED COSTS OF MAIN DEVELOPMENT PROGRAMMES

Development Programmes	SR millions
Water and Desalination	34,065
Agriculture(@)	4,685
Electricity	6,240
Manufacturing and Minerals	45,058
Education	74,161
Health	17,302
Social Programmes and Youth Welfare	14,649
Roads, Ports and Railroads	21,283
Civil Aviation and SAUDIA	14,845
Telecommunications and Post	4,225
Municipalities	53,328
Housing	14,263
Holy cities and the Hajj	5,000
Other Development	9,312
Sub-total Development	318,416
Defence	78,157
General Administration	38,179
Funds	63,478
Subtotal Other	179,814
Total Plan	498,230

@ Does not include provision for regional development.

Source: Kingdom of Saudi Arabia: Ministry of Planning, Second Development Plan 1975-80 (Riyadh, 1975), p. 530.

Such a huge investment was primarily aimed at diversifying the Kingdom's economic resource base to achieve a balanced economic development. The main ~~objects~~ objectives of the Second Development Plan for industry were to:[11]

1) Maintain a high rate of economic growth by developing economic resources, maximizing earnings from oil over the longterm, and conserving depletable resources.

2) Reduce economic dependence on export of crude oil.

3) Develop human resources by education, training and raising standards of health.

4) Increase the well-being of all groups within the society and foster social stability under circumstances of rapid social change.

5) Develop the physical infrastructure to support achievement of the above goals.

The long-term policy of the industrial planning is to reduce the overwhelming dependence of the economy on the export of single depletable asset, Oil - which "constituted 70 per cent of the GNP, 99 per cent of exports and 200 per cent of the State's revenue"[12] that time.

---

11 Kingdom of Saudi Arabia : Ministry of Planning, Second Development Plan 1975-80 (Riyadh, 1975), p. 4.

12 "Saudi Arabia : Second Five Year Plan", Economic Review of the Arab World, (Beirut), vol. IX, no. 7, July 75, p. 35.

The principal thrust for diversification, as weapon to counter dependence of the economy on oil exports, was to develop the non-oil manufacturing industries. The Second Plan stressed the need of developing the economic resources together with the industrial coordination[13] among various existing industries. The strategy for industrial planning was adopted to develop hydrocarbons and energy-intensive industries in which the Kingdom enjoys a comparative advantage. The Plan envisaged the seismic exploration of the new oil fields throughout the Kingdom, including the Rab al-Khali to collect information regarding oil reserves and production potentials, to meet both world energy needs and of domestic hydrocarbon industrial development.

Development of the mineral sector was also planned largely to increase the commercial potential of the Kingdom's metallic and non-metallic resources. Basic geological studies and mapping programmes were proposed to help the mineral exploration programme in the Precambrian shield and other probable mineral deposit areas. Special programmes were devised to study the Uranium prospects and the

---

13 Industrial Coordination implies surveying, assessing and determining economic potentialities and available natural resources --- with a view to ascertaining the extent to which those resources are utilized and exploring the possibilities of exploiting those resources in the best possible manner. /United Nations: Industrial Development in the Arab Countries (New York, 1967), p. 15/

availability of water for minerals industry.

In the plan, heavy emphasis was laid on the expansion and diversification of the manufacturing sector to reduce the dependence of the Kingdom's economy on oil exports. In this field, regional manufacturing industries were planned with the intention of distributing the oil wealth to all sectors of the growing Saudi population, and to increase the employment opportunities and real incomes.

In the development of productive sectors, a major role was assigned to private enterprise, with all possible government assistance and financial stimulation. Individual and joint investments have also been planned for construction industry with special incentives, credits, and provision of infrastructure and support services. It was proposed to give priority to the development of manpower resources in order to reduce dependency on expatriate workers by national skill creation through education and training which was expected to generate a production work environment in support of the industrial development plan. The number of foreign workers was estimated to reach 812600 by 1980, a net increase of 498600 over the plan period.[14]

To realize the planning goal, the planners adopted the strategy of creating growth poles in different regions of the economy. The government planned to expand and improve

---

14 Saudi Arabia : Second Development Plan 1975-80, p. 63.

the existing Jeddah, Riyadh, and Dammam industrial estates, and complete the plans for new industrial estates at Mecca, Hofuf, and Qasim. Besides, two other gigantic industrial centres were planned - one at Jubail in the Eastern Province on the Gulf coast and the other at Yanbu in the Western Province on the Red Sea linked together by two pipelines, one for transport of crude oil and other for liquid natural gas.

The master plan for the Jubail industrial complex was drawn up by Bechtel Corporation of the U.S., whose subsidiary the Saudi Arabian Bechtel Company (SABCO) was held responsible for overall management. The SABCO has been working for the royal Commission for Jubail and Yanbu (RCJY), which was set up in ~~September~~ December 1975 for implementing the master plans for the two sites, setting up and operating the infrastructure and community facilities, providing manpower and also training Saudi nationals. In the plan, SR 50690 million was allocated for the development of the two industrial complexes. The RCJY was held responsible for building the infrastructure - roads, houses, communications, schools, telephones, electricity etc. - necessary for the development of the two industrial sites.

In the oil producing Eastern Region, the plan envisaged to set up a natural gas-gathering and treatment plant, three petrochemical complexes, two refineries for export of petroleum products, a lube oil refinery, two ammonia and urea plants, and steel and

aluminium smelter plants, grain silos, flour mills and a cement factory at an estimated cost of SR 39840 million.[15]

In the Western Region, a further investment of SR 10850 million was proposed to set up an oil refinery for export (of 250000 b/d production capacity) in addition to the Jeddah Oil refinery (of 170000 b/d production capacity), and a petrochemical complex, a shipping terminal and fractionating plant for liquid natural gas (LNG), a cement, car-tyre and car assembling plants.[16] The major development programmes for hydrocarbon - based industries proposed in the second plan are as shown in table 3.4 given below.

The major projects planned in the two industrial complexes include four petrochemical complexes, three in the Eastern Region and one in the Western, estimated to produce equivalent ethylene of about 2 million tons per annum at a cost of SR 11250 million, and three oil refineries for export with a capacity of 750000 b/d at an estimated cost of SR 6700 million. The three projected oil refineries were proposed to be established in joint ventures between foreign oil companies and the Saudi General Petroleum and Minerals Organization (Petromin).

---

15 Saudi Arabia : Second Development Plan 1975-80, p. 92.

16 Ibid., p. 92.

TABLE 3.4

MAJOR DEVELOPMENT PROGRAMMES FOR HYDROCARBON-BASED INDUSTRIES, 1975-80.

Programmes and Projects	Investment (SR millions)	Capacity	Peak Employment
Eastern Region			
Gas gathering and treatment	16000	1600 million cu. ft. per day	2300
Petrochemical Complexes (4, of which 3 to be initiated, 1975-80)	9000	2.0 million tons per year equivalent ethylene	6800
Export refineries (2)	4600	500 thousand bbls. per day	1700
Lube Oil refinery	2040	107 thousand bbls. per day	550
Fertilizer Plants (4, of which 2 to be initiated 1975-80)	1400	2 million tons per year	2000
Aluminium Plant	1300	210 thousand tons per year	1900
Steel Plant	5500	3.5 million tons per year	8600
Sub Total	39840		23850
Western Region			
Crude Line to West	5300	2.4 million bbls. per day	550
NGL line to West	1200	356 thousand bbls. per day	
Export refinery	2100	250 thousand bbls. per day	850
Petrochemical Complex	2250	500 thousand tons per year equivalent ethylene	1700
Sub Total	10850		3100
Total	50690		26950

Source : Saudi Arabia: Second Development Plan 1975-80 Table IV-18, p. 182.

Besides, the natural gas-gathering and treatment project planned in Jubail at a cost of SR 16000 million was expected to be completed by 1983. The plant was proposed to gather 1600 million cubic feet of dry fuel gas a day to provide energy for Jubail and Yanbu both. Yanbu, which is in the Western Province, is at a far off distance from oil fields of the Eastern Province on whose oil and gas its industries are based. A near 1270 Km long East-West Pipeline System will ~~It will be connected to the Abqaiq oil field in the East by 1270 Km. pipeline for the transport of oil,~~ be constructed to transport crude oil from Ghawar fields near Abqaiq to Yanbu on the Red Sea coast and another ~~and another parallel pipeline for liquified Petroleum Gas (LPG) to feed the petrochemical complexes. These two pipelines were proposed to be built with a capacity of 2.4 million b/d at an expenditure of SR 5300 m.~~ parallel pipeline of 1168 Km. for Natural Gas Liquids (NGL), 40 per cent of which will provide feedstock for the petrochemical industry at Jubail and Yanbu and 60 per cent for export purposes.

Further, two new fertilizer plants in the Eastern Region with a combined capacity of 220000 tons of ammonia and 800000 tons of urea was planned to be completed by the end of the second plan period.

Finally, the plan provides for the establishment of Steel plant in the Jubail area of the Eastern Region, in addition to the Jeddah Steel-rolling mill, to produce with an annual capacity of 3.5 million tons of metal pellets, basic shapes and bar, and plants and pipes at an estimated cost of SR 5500 million. Further, an aluminium smelting plant was also planned to be set up, in 1976, in the Eastern Region producing 210000 tons per year at a cost of SR 1300 million.

In the Second Plan, it was planned to expand other non-oil based manufacturing industries. It envisaged an increase in cement production capacity from 1.15 million tons annually to 10 million tons - the construction of three large integrated grain-silos, flour milling and feed-milling complexes, and a wide variety of other activities including food processing, construction materials and products, automobile assembly and parts production, and manufacturing of fabrics, carpets, and other consumer and health products.[17]

Petromin was planned to retain primary responsibility for the development of hydrocarbon - based industries, while the Ministry of Commerce and Industry, and the Industrial studies and Development Centre were to encourage and support the growth and diversification of other manufacturing industries. Major development in the second plan projected for hydrocarbon based industries are as summarized below 18:

1) New refineries and expansions to existing ones to meet both domestic and export demands for petroleum products.

2) Construction of gas_gathering and treatment facilities in the Eastern Region, and design of petroleum and gas pipelines to the Central and Western regions.

3) Designs and construction of major new plants to manufacture petrochemicals, fertilizers, and steel and aluminimm intermediate and finished products.

Major planned developments for industries not based

---

17. Saudi Arabia: Second Development Plan 1975-80, p. 93.

18. Ibid., p. 176.

on hydrocarbons include[19] —

1) Ten fold expansion of cement production, to meet the Kingdom's construction requirements and to provide some surplus for export.

2) New and expanded plants to produce a wide variety of products, including construction materials, household and commercial equipments, and inputs to the industries based on hydrocarbons.

Implementation of the industrial projects for the two huge industrial complexes, Jubail and Yanbu was of great concern to the planners. Although the prime task of the First Plan was to provide the basic physical means, implementation of the Second Plan had to face certain major constraints like acute shortage of water and power supplies, scarcity of skilled and unskilled manpower, lack of technical know-how and management, and poor port facilities leading to congestion and delays in import deliveries for industrial purposes.

Industrial Policy 1974 :

In order to overcome the obstacles hindering the industrialization plan and also to apprise the interested government departments, industrial enterprises and business community within and outside the Kingdom with the basic policy

---

19 Ibid., p. 176.

of the government regarding industrial development, a comprehensive industrial policy and incentive measures were announced in 1974 as given below:[20]

1) The Government aims at encouraging and expanding manufacturing industries, including agricultural industries, which can effectively contribute to increase of national income, to raising the standard of living and of employment and to diversification of the economy of the Kingdom. For diversifying the economy, the Government will work towards the adoption of plans which, besides increasing the national income, will reduce the effect of outside economic disturbances on the Kingdom and diversify the opportunities open to the increasing abilities and technical capabilities of the people of Saudi Arabia.

2) In view of the fact that the economy of the Kingdom is based on competition between the private commercial and industrial enterprises, the Government realises that the objectives of industrial development may be more effectively attained if the business community bear in the long run the responsibility of implementing industrial projects.

Accordingly businessmen who are prepared to take the risks of success and failure, motivated by prospects of profit,

---

20 "Saudi Arabia: Industrial Policy and Objectives", Africa/Middle East Business Digest, vol. XIX, no. 244, March 1975, pp. 4-6.

will enjoy the full support of the Government during all stages of preparation, establishment and operation of industrial projects which are beneficial for the Kingdom. The Government is also ready to supplement the efforts of businessmen in the private sector by establishing, financing and participating in the management of the large industrial projects or those requiring wide technical experiences and which the private sector cannot undertake alone.

3) The Government considers that competition serving the interests of local consumers is the best means of influencing the business community in the industrial field towards beneficial manufacturing and market-oriented projects.

The Government also considers that competition is the most effective means for selecting the investment schemes which suit the market requirements, for encouraging low cost production and for fixing fair prices for both consumer and producer. However, the Government will not permit harmful foreign competition, such as dumping.

4) To ensure that businessmen who are ready to participate in the industrial development of the Kingdom are acquainted with the information required for identification, impelementation and successful operation of feasibility projects, the Government shall, from time to time, familiarize them with the industrial and feasibility studies and other useful information that may be available. The Government

shall also provide existing industrial establishments with the services available in the management and technical fields.

5) In order to encourage businessmen to invest in projects of prospective benefit to the national economy, the Government is prepared to offer encouraging and financial incentives to all industrial sectors so as to make it possible for every well-conceived and well-managed project within this sector to realize reasonable profits for the investors. The government will grant the same incentives to all projects set up within the sector, it being understood that these incentives shall be given in accordance with the regulations without delay.

The incentives may include the following:

6) To enable organizing the assistance granted by the Government to industry and make it more effective, and appreciating the necessity of providing an atmosphere of security to industrial investors ensuring that they would realize the hoped-for benefit from the projects set by them in the light of the available market demand, the state is adopting the principle of licensing of industrial projects which exceed a specified size of invested capital, employment or production capacity. An application for license shall not be refused except for practical considerations relating to the supreme national interest or to national economy.

7) When the Government establishes large and important industrial projects which the private sector cannot undertake,

it shall make efforts for the private sector to participate in them as much as possible. In such cases and in cases where the Government participates in the capital of private projects to supplement the investments of the private sector in them, it is the policy of the Government - in respect of industries other than those relating to national security - to sell the shares owned by it to the public in due course if this serves the public interest.

In the cases in which the Government finds it necessary to assume the responsibilities of management of an enterprise because of the inability of businessmen to operate it, the Govt. will hand back these responsibilities to the businessmen as soon as possible. In all cases the policy of the Government is that it shall be partner and not a competitor of the producers in the private sector.

8) The Government shall do its utmost to avoid imposition of quantitative restriction or of control on prices as means for implementing its industrial policy. The Government shall not impose restrictions except in the cases in which competition cannot have an effective role, as in the case of commodities which by their nature are characterized by monopoly.

9) The Government recognizes the right of the business community in the industrial fields to select, utilize and manage the economic resources, including industrial workers, in so far as this does not contravene statutes in force, in order to raise the productive efficiency of industry to the maximum.

10) The Government welcomes foreign capitals as well as foreign expertize and invites their participation in industrial development projects in cooperation with Saudi businessmen. The Government, recognizing the benefits to the industrial development of the Kingdom of the entry of foreign capital accompanied by administrative and technical capability and ability for international marketing, assures investors that it will always avoid imposing any restrictions on the entry and exist of money to and from the Kingdom and that it shall continue its policy based on the respect of private ownership in the Islamic Law (Sharia),

11) The government shall provide the public utilities and make the basic arrangements necessary for the setting up of economically feasible studies. Appreciating the dependence of industry on the general development of the Kingdom, the government will promote the growth of all economic sectors in order to make available for the producers suitable local resources in sufficient quantities and increase purchasing power of consumers within a framework of ever growing national economy.

Third Development Plan (1980-85)

The Third Development Plan, covering the five year period from 1980 to 1985, was approved by the Council of Ministers on 4 May 1980 which postulated a total outlay of

SR 782.7 billion estimated at 1979-80 constant prices.[21] The Third Plan, which has been launched from 1 July 1980, aims at changing the structure of the economy in order to extend the production base. The Plan will continue to base strategy for industrial development on the fundamental objective of accelerating the process of diversification so as to reduce the economy's dependence on export oil as a source of revenue. However, the significance of oil and natural gas has been recognized and stressed to increase the oil exploration and maintain its productive capacity with a view to safeguard the availability of oil wealth for a longer period of time. The Plan aimed to expand the oil refineries and gas-gathering programme, and also to establish as well as to begin operations of hydrocarbon based industrial plants. A policy has been adopted to divert a major portion of the investment capital generated from oil exports to the productive sectors like mining and industry to ensure diversification of the economic base.

Heavy emphasis has been laid on the further development of the Kingdom's manpower resources through education and training programmes particularly for blue-collar jobs with a view to lessen dependence on expatriate manpower and to replace foreign labour with local talents. The

---

21 Saudi Arabia : Third Development Plan 1980-85, p. 88.

policy is aimed at developing Saudi manpower to undertake the responsibilities of managing, operating and maintaining the industrial plants within a period of five years and to encourage employment in such sectors where the individual Saudi worker's production abilities are utilized to the maximum. As it would be very difficult to attract sufficient number of Saudis in the required sectors, it has been decided to review the situation periodically in order to check rise in labour cost.[22]

To curtail the growth of expatriate manpower from 7 per cent a year to 1,2 per cent,[23] the plan has reduced the volume of investment on infrastructure in relation to other sectors and to prevent the wastage of resources in the construction of complexes not capable of sustained development. The objectives for the development of physical infrastructure are to complete the projects which were actually commenced during the Second Plan period and to those productive sectors which have the capacity to absorb more and more productive schemes. The policy for the development of physical infrastructure is to select those areas which can be identified as having potential to become growth centres

---

22 "A Capital Outlay for Over 782 Billion Riyals", Dawn, 31 August 1980.

23 MEED, Special Report, July 1980, p. 9.

for productive economic activities, capable of attracting and absorbing the population from other areas which lack such potential. Emphasis has been given to the development of infrastructure for the support of the hydrocarbon - based industrial projects in the two industrial zones of Jubail and Yanbu.

Finally, the Plan has a stronger commitment for a balanced industrial growth so as to distribute the benefits of modernization throughout the Saudi society.

In the Third Plan, the larger increases in the financial allocations indicate the priorities for industrial development plan. Broadly, while the allocations for the Economic Resource Development has been envisaged for SR 261.8 billion (37.3 per cent) of the total outlay, the expenditure on physical infrastructure account for SR 249.1 billion (35.5 per cent) as shown below in Table 3.5.

TABLE 3.5

THIRD PLAN: ESTIMATED TOTAL FINANCIAL ALLOCATIONS

Functions of Expenditure	S.R. Billion (Current Prices)	Percent
Economic Resource Development	261.8	37.3
Human Development	129.6	18.5
Social Development	61.2	8.7
Physical Infrastructure	249.1	35.5
Subtotal : Development	701.7	100.0
Administration	31.4	4.5
Emergency Reserves, Subsidies	49.6	7.1
Total Civilian Expenditure	782.7	111.6

Source : Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan, 1980-85 (Riyadh, 1980) Table 3-1, p. 88.

On the sectoral basis, the Plan has allocated a total of SR 93, 522.6 million for the development of Energy and Mineral resources, SR 95,601 million for manufacturing and commerce,[24] and SR 4,40,000 million for construction expenditure at 1979-80 constant prices.[25]

The Plan envisaged the programmes for maintenance of the existing productive capacity and enhancement of the oil exploration activities by geological studies, seismic surveys and exploratory drilling.

Further, it was planned that the construction of the 1,200 km. pipeline with an initial capacity of 1.85 million barrels per day under the supervision of the Petromin would be completed by the end of 1981. The pipeline was proposed to be extended from the Eastern oil fields to the newly constructed storage and shipping terminal located on the Red Sea at Yanbu. It will provide the Kingdom an alternative and shorter crude oil export route for northern destinations than the Arabian - Gulf Shipping points or the Tapline. The East-West crude oil pipeline will also supply the crude oil for domestic and export-refineries which will be completed during the Third Plan period at Yanbu.[26]

---

24 Saudi Arabia: Third Development Plan 1980-85, Table 4-56, p. 284.

25 Ibid., p. 258.

26. Ibid, p. 173.

The Berri NGL centre with

It also proposed to fully integrate the gas-gathering scheme and to complete the Shedgum NGL Centre and the Juaymah fractionation plant by the end of the first year of the Third Development Plan and the Uthmaniyah NGL Centre and Yanbu fractionation plants during the third year of the Third Development Plan.[27] The largest gas pipeline, the 1168 Kms. East-West NGL pipeline linking the Yanbu fractionation plant to the Shedgum NGL centre, construction of which had begun in 1978, was also proposed to be completed in 1982.[28]

Further, a programme was designed to raise substantially the oil refinery production capacity for both export and domestic markets. Petromin was executed to construct unilaterally a domestic refinery at Yanbu and to develop in joint venture partnership the export refineries at Jubail on the East coast, and at Yanbu and Rabigh on the West coast.

The construction of a new refinery at Yanbu in addition to the expansion of the existing refineries at Jeddah, Riyadh and Yanbu is expected to increase the domestic refinery capacity from 120000 barrels a day in 1980 to

---

27 Ibid., p. 179.

28 Ibid., p. 175.

640000 barrles a day in 1985, while the construction of the three large scale new export refineries at Jubail, Yanbu and Rabigh will add 750000 barrels a day to the existing export refinery capacity.[29]

Besides, five lubricating projects were planned for increasing the lubrication oil productivity to attain self-sufficiency and enter the export market. Two lubricating projects were proposed to be established at Jeddah, and the third at Jubail which were expected to be completed in 1981, and rest of the two to be set up on the West coast and at Jubail on the East-coast for export.

As regards the mineral sector, intensive investigations, general and specific both, were planned to discover new mineral deposits and to gather information for actual and potential reserves of non-hydrocarbon mineral resources. The geophysical and geochemical programmes will be expanded to strengthen the search for economic mineral deposits. A permanent seismic observatory will be established, airborne geographical surveys will continue and geochemical methods will be used extensively to support the exploration for mineral deposits.

A comprehensive programme to assess the Uranium potential in the Kingdom will be intensified. Further, the programme for exploration for high alumina clays and the ornamental stone industry in the Kingdom will also be increased.

---

29 Ibid., pp. 184-185.

Two new stone dressing plants will be opened, one in the central and the other in the south-western Regions.

The evaluation of the wadi Sawwawin iron ore deposit will also be completed alongwith the preliminary mining evaluation of the Jabal Idsas.

Petromin in conjuction with foreign companies was further proposed to continue its search for commercially viable mineral deposits. The government will provide all the necessary facilities to implement the research exploration and development aspects of the plan, which include the provision of laboratories, specialist equipment, office and storage accommodation, and air and land transport facilities.

In the field of manufacturing, the Third Plan has made commitment to widen industrial development by integrating the oil sector with non-oil sectors to achieve a balanced self-sustained growth.

In the hydrocarbon-based manufacturing the Third Plan envisaged to convert and utilize the associated-gas as a fuel and feedstock in the basic petrochemical plants to be established by the SABIC in collaboration with international companies for export and domestic use.

It was also proposed to establish a methanol plant with a production capacity of 6,00,000 metric tons a year and an urea plant of 5,00,000 metric tons a year by 1984 for export purposes. Besides, three very large ethylene complexes, two located at Jubail and one at Yanbu with a combined capacity of

about 1.5 million tons a year will also be completed by 1984-85 which will provide a basis for the production of a wider variety of ethylene based petrochemical products such as plastic, resins, and other ethylene derivatives.

In the manufacturing not based on hydrocarbons, three steel projects for local market ~~was~~ were planned to be completed by SABIC in partnership with Korf-Stahl of West Germany by 1983. This will provide self-sufficiency to the Kingdom in basic steel bars for construction industry. Besides, five new cement plants were also planned to be established along with major expansions of the existing plants at Riyadh, Hofuf and Jeddah.

A policy was adopted to continue assigning a major role to the private sector in the implementation of both the hydrocarbon and non-hydrocarbon manufacturing projects. Loan funds upto 50 per cent will be provided to support the private investors for viable projects.

In the construction sector, the Third Plan envisaged to encourage the local construction companies so as to reduce its entire dependence on the foreign companies. It was further undertaken to increase substantially the domestic cement and reinforcement bar production. Besides, it was also proposed to provide the managerial technical and marketing advice as well as financial assistance to the manufacturing firms in the construction material industry.

To implement the industrial programme of the Third

Development Plan, the government adopted the strategy to induce the private sector to primarily undertake the development of producing sector by providing information for investment and all necessary support with infrastructure and services, and setting priorities for investments. Encouragement will continue to be given to foreign companies in participation with local companies for industrial projects. Financial assistance will also be provided to the industrial investors to attract well managed companies with foreign capital, skills and technology. The incentives proposed to be given to the industrial investors are as follows:[30]

1) Loans on favourable terms from the SIDF;

2) Tariff exemption on imported equipment and materials;

3) Selective Tariff protection from imported products;

4) Tax incentives;

5) Assistance in studies and operations;

6) Provision of low cost utilities and funds;

7) Provision of infrastructure, including industrial estates;

8) Training subsidies for manpower;

9) Adoption of government procurement policies giving prefere-preference to Saudi producers.

The small size of the domestic market and similar productions in the neighbouring oil producing countries havelent considerable importance and desirability to coordinate industrial development policies both to widen the market opportunities for

---

30 Ibid., pp. 217-18.

Saudi industry, and to avoid unnecessary duplication. As such, the Third Development Plan has emphasized the desirability of economic cooperation among the neighbouring oil producers of the Arab-Gulf.[31]

Industrialization Under the Plans : Comparative Analysis

At the beginning of the First Development Plan (1970-75) lack of financial resources was a major constreint which restricted the development of the new projects. However, the persistent increase in oil revenues owing to the steep rise in oil prices since 1973-74 eased the financial position and facilitated the industrialization plan. The revenues actually received during the five year plan period, 1970-75 great-ly exceeded the amount estimated under the Plan. The phenomenal increase in revenues towards the end of the Plan period is shown below in Table 3.6.

TABLE 3.6

SAUDI ARABIA: TRENDS IN OIL REVENUES, 1970-75 (SR millions)

Plan years	Oil	Percent	All Other	Percent	Total
1970-71	7122	89.7	818	10.3	7940
1971-72	9685	87.1	1435	12.9	11120
1972-73	13206	85.9	2162	14.1	15368
1973-74	38400	93.0	2900	7.0	41300
1974-75	94432	96.1	3815	3.9	98247
Total plan period	162845	93.6	11130	6.4	173975

Source: Kingdom of Saudi Arabia: Ministry of Planning, Second Development Plan 1975-80 (Riyadh, 1975), p. 39.

31. Ibid, pp. 110-12.

The large influx of oil revenues enabled the government to enhance the developmental investment targets with new programmes and projects and also to accelerate the implementation of the industrial development plan. Consequently, both budget estimates and actual expenditures during the five year plan period, 1970-75 by far exceeded the sectoral allocations projected under the First Development Plan. It was proposed to spend SR 41.3 billion during the First Plan period but the actual expenditures rose to SR 78.2 billion at the end of it.[32]

Unlike the First Development Plan, the Saudi planners had no financial constraints at the time of preparing the Second Development Plan (1975-80). Instead, there was another problem before them as to how large the industrial plan be made to absorb the huge surplus funds. So, the government projected for the Second Plan a total outlay of SR 498.2302 billion which was nine times higher than the total outlay of the First Plan (at 1974-75 prices). However, the actual expenditure, according to Hisham Nazer, exceeded the projected total outlay by SR. 201.7698 billion[33] largely due to the high rate of

---

32 Mallakh, n. 5, p. 152.

33 Anthony Mc.Dermott, "Development Plan: Expenditure on New Plan May Exceed $ 300 Bn.", Financial Times, 28 April 1980. Reproduced in Strategic Digest, vol. X, no. 6, June 1980, p. 337.

inflation.[34]

The comparable figure in the Third Development Plan (1980-85) is the total outlay of SR 782.7 billion. But it is estimated that the total expenditure might actually go beyond SR 1000 billion.[35]

The First Development Plan had to begin from the fiscal year 1970-71, but it could start functioning only in 1971-72. The delay was caused due to the lack of physical infrastructure, scarcity of labour and technical know-how, and shortage of local entrepreneurs ready to undertake industrial projects.[36] Moreover, nearly the whole plan period was spent in experimentation over applying it, and preparation for the Second Development Plan.

The Second Development Plan was prepared in time but its implementation, like the First Plan, was also delayed by about six months mainly because of the inadequacy of the available physical infrastructure, whether of ports, airports, roads, railways or communication facilities. Against the very high demand for imports of goods and services, the inadequate transportation facilities for example, the congestion of ports with ships waiting for about 120 days, led to severe delays

---

34 For trends in inflation see Saudi Arabia: Third Development Plan 1980-85, pp. 43-45.

35 McDermott, n. 33, p. 338.

36 A. Khamis, "Industrial Development and Skilled Labour Problems in Saudi Arabia", Arab Economist, vol. VII, no. 74, March 1975, p. 24.

in the implementation of the industrial plan.[37] Other major constraints inhibiting the industrialization process were scarcity of manpower, shortage of maintenance services and lack of coordination of Government services in the planning and implementation of projects.[38]

The first two Development Plans serve as guidelines for identifying the constraints in the future industrial development plans. The planning policy reflects the government's consciousness of the need for rapid industrialization as a means of overall economic development to diversify the economy's resource base and to counter balance potential risks related to the almost sole dependence on oil revenues. This is evident from the continuity in the development to base the strategy for industrialization on the same three key objectives — diversification of the economic resource base, development of indigenous manpower resources and distribution of benefits of national wealth to all sections of the Saudi society.[39]

---

37 Saudi Arabia : Third Development Plan 1980-85, pp. 25.

38 Ibid., p. 26.

39 "Saudi Arabia : Third Development Plan Gives support to Oil Sector", Arab Economist, vol. XIII, no. 139, April 1981, p. 33.

The most important innovation in the Second Plan was the introduction of 20 years perspective planning for the development of the two industrial cities — Jubail and Yanbu. The government planned for capital-intensive labour-saving projects extending the long-term planning period over 20 years instead of the original five years. The Royal Commission for Jubail and Yanbu (RCJY) has been assigned to provide, within a time-frame of 20 years, adequate and timely infrastructure and trained manpower at the two industrial complexes.[40]

However, there are fundamental differences in the strategies for implementing the plan objectives. While the First Plan was essentially directed towards creating a base for industrialization with the steady expansion of physical infrastructure, and improvement of government services and the management of the economy, the Second Plan laid stress on further expanding and improving efficiency and quality of the physical infrastructure, especially road networks and posts in order to eliminate the major bottlenecks in establishing the industries and to increase the volume of absorptive capacity of the economy. Unlike the first two plans, the objectives of the Third Plan shifted from the physical infrastructure towards increasing the output capacities in

---

40 Saudi Arabia : Third Development Plan 1980-85, p. 241.

the productive sectors to limit the large dependence on oil export earnings and raising the efficiency and performance of the indigenous manpower to reduce foreign labour force.

TABLE 3.7

COMPARISON OF ESTIMATED FINANCIAL ALLOCATIONS OF FIRST, SECOND AND THIRD PLANS

Function of Expenditure	First Plan(a)		Second Plan(b)		Third Plan(c)	
	SR Billion	Percent	SR Billion	Per-cent	SR Billion	Per-cent
Economic Resource Development	6.0	18.3	92.1	28.9	261.8	37.3
Human Resource Development	10.2	31.2	80.1	25.2	129.6	18.5
Social Development	2.4	7.3	33.2	10.4	61.2	8.7
Physical Infrastructure	14.1	43.1	112.9	35.5	249.1	35.5
Total Development Expenditure	32.7	100.0	318.3	100.0	701.7	100.0

Notes : (a) First Plan values have been adjusted to 1974-75 prices.

(b) Based on 1974-75 prices.

(c) Based on 1979-80 prices.

Source : Compiled from Saudi Arabia : Second Development Plan, 1975-80, Table VIII-1, p. 529; Saudi Arabia : Third Development Plan 1980-85, Table 3-1, p. 88.

The pattern of financial allocations in the plans

indicates the changing strategy for realizing the industrial development goals. Table 3.7 shows that the development of physical infrastructure, which received top priority in the first two Development Plans, has been given less emphasis in the Third Plan. The relatively high investments on the development of physical infrastructure and human resources imply their significance needed to improve the absorptive capacity of the economy and also to build up a framework for future industrialization.

As adequate physical framework, while not yet fully sufficient to meet the demands of industrialization, was developed by the end of the Second Plan period, the Third Plan has given due emphasis on the economic resource development. Sectoral allocations for the development of economic resources such as industry and mining increased from 183 percent of the total development expenditures in the First Plan to 28.9 percent in the Second Plan and 37.3 per cent in the Third Plan.

Another remarkable feature of the industrial planning is reflected in the programme for industrial development which laid great emphasis on the development of all regions of the Kingdom in a concerted effort to eliminate regional disparities and to achieve a more balanced economic development.[41]

For this, the Kingdom has been divided into five main regions — Northern, Western, Eastern, South-Western and the

---

41 For details see: Saudi Arabia: Third Development Plan 1980-85 p. 59.

Central — each of which was planned to be developed through the creation of industrial growth poles. Accordingly, six industrial estates have been established at Riyadh, Jeddah, Dammam, Mecca, Hofuf and Qasim. Besides, two major industrial cities have also been created — one at Jubail in the North-Eastern and the other at Yanbu in the North-Western regions. The most advanced planning so far has been envisaged for Jubail, a fishing village north of the Aramco oil fields in the eastern province, near Dammam.

The First Plan envisaged utilization of the existing human, technical and financial potentials to realize the industrial goals with the emphasis on the development of oil refineries, oil marketing as well as industries based on energy and capital intensive methods. In continuity, the Second Plan further extended the industrial programme with the establishment of industries based on hydrocarbons which involve new oil refineries, gas-gathering schemes, petrochemicals, fertilizers, iron and steel, and aluminium plants.

The industrial development programme for establishing huge petrochemicals and mineral schemes in the industrial estates have been executed by SABIC while oil refineries and the pipeline projects has been executed by Petromin.[42] The industries in the two giant industrial complexes at Jubail

---

42 "Saudi Arabia: Third Plan to Harness Inflation", Arab Economist, vol. XIII, no. 142, July 1981, p. 22.

and Yanbu have been supported with the creation of basic infrastructure supervised by the Royal Commission of Jubail and Yanbu (RCJY).

Achievement in the industrial sector during the First Plan was poor. The petroleum refining and hydrocarbon based industry failed to achieve the targets set in the First Plan, whereas the manufacturing not based on hydrocarbons exceeded it. The average annual rate of growth in the petroleum refining during the First Plan period has been estimated at 4.1 per cent against a target of 9 per cent. The growth rate estimated for other hydrocarbon based manufacturing was 11.4 percent, while the target was 14 per cent. This shows that the growth in manufacturing has fallen below expectation with the major exception of cement ~~On the other hand, manufacturing not based on hydrocarbons achieved very rapid progress, particularly cement~~ production estimated to have grown at a ~~a growth~~ rate of 16.7 per cent annually. The industrial infrastructure has been improved considerably though some programmes such as national health and road construction network have fallen behind schedule. The construction activity more than doubled over the Plan period alongwith a significant increase in the number of Saudi Construction and Building Companies.

Substantial progress was made in crude oil exploration and drilling activities, installing new pipelines, and adding new gas-oil separator capacity, water injection facilities and natural gas liquid processing

plants.[43] Further, in addition to the establishment of a refinery ~~was established~~ in Riyadh, a lubricating oil blending plant was completed, and a Fertilizer company became operative, steel bar production expanded, cement production more than doubled, and many new small scale industries for domestic consumption were also set up during the plan period. Besides, the government issued the Saudi Arabian Industrial Policy (1974), and established the Industrial Development Bank Fund and provided interest free loans to the private industrial enterprises for supporting the growth of manufacturing industries in the Kingdom. During the First Development Plan period the major developments within the hydrocarbon-based manufacturing sector were:[44]

1) Output of the Ras Tanura refinery increased from 156 million barrels in 1969 to over 224 million barrels in 1974, whereas output from the Jeddah refinery declined from 2.6. million to 1.1 million barrels per year over the same period. A new refinery at Riyadh with a capacity of 15000 barrels per day was brought onstream in 1974.

2) The Jeddah lubricating oil blending plant was completed in 1972 and is now producing 75000 barrels annually.

---

43 Saudi Arabia: Second Development Plan 1975-80, p. 141.

44 Ibid., p. 174.

3) Fertilizer production by the new SAFCO commenced in 1971 and is approaching its capacity of 300000 tons of urea annually.

4) Steel reinforcing bar production at the Jeddah rolling mill reached about 22000 tons annually as two shift operations commenced in late 1974.

Major developments within industries not based on hydrocarbons were:[45]

1) Cement production, the second largest industry in the Kingdom, expanded from 575000 tons in 1969 to over 1150000 tons in 1974.

2) Several new industries were founded and others expanded such as basic construction materials & products, furniture, glass containers, textiles and apparel, paper products, plastic products, industrial gases, paints, household detergents, printing and publishing.

3) Studies, engineering design, and site investigation were completed for the three industrial complexes at Jeddah, Riyadh and Dammam.

In all, the achievements of the industrial diversification program set in the First Five Year Development Plan was not satisfactory. Apart from major domestic constraints like the lack of physical infrastructure, inefficiency of

---

45 Saudi Arabia: Second Development Plan 1975-80, pp. 174-175.

administrative and managerial machineries, the external factors for the slow progress of the industrial planning was the poor quality of assistance provided by the foreign experts, and also because of the fact that the foreign governments were more interested in the benefits than the qualitative developments of the economy.[46]

In the post oil boom period, the experience of the three years (1974-76) development operations revealed that absorptive capacity of the economy was not large enough for huge expenditures. Therefore, the government in the Second Development Plan lowered its industrial targets for a broad diversification of the economy. Instead the Saudi planners decided to invest on the establishment of industries in which the economy has a resource specialization alongwith the stress on the expansion of infrastructural development to support the industrialization plan. Table 3.8 and Table 3.9 indicate some of the main Second Development Plan achievements at the two giant industrial complexes, Jubail and Yanbu at the end of 1979-80.

---

46 Tom Little, "Saudi Arabia on the Move", Middle East International (London), no. 36, June 1974, p. 10.

TABLE 3.8

JUBAIL FACILITIES AND PROGRESS

Area/Project Type		Activity/Status[1]
1.	Site Survey/ Preparation	Comprehensive surveys underway Industrial sites 60% completed
2.	Materials Handling Systems	Design 40% completed work underway in 5 packages.
3.	Self-supporting Camps	9 construction camps completed, 1 under construction.
4.	Transport: Airport	4,000 meter runway completed; other facilities under construction.
	Roads	129 km of roads and 25 km. of modular pathways designed; 63 km. of roads completed.
5.	Industrial Parks: Support industries	Development plan completed and one development contract let.
	Secondary industry	Master Plan completed
6.	Electric Power	Design of power system completed
7.	Water: Potable	15,650 m^3/day treatment capacity; 37,000 m^3/day of storage tankage; 66 km. of conveyance lines; 19,000 m^3/day of desalination capacity.
	Cooling	Seawater system design completed; some contracts let.
8.	Waste Treatment	Initial phases in operation with capacity of 6,200 m^3/day.
9.	Public & Community Facilities:	
	Mosque; warehouses; various service communityaand recreation facilities	Design underway, Mosques with an area of 2,450 m^2 complete. 4 warehouses of 8,000 m^2 completed.
10.	Training	Design completed for 74,000 m^2 facility.

1 At end of 1399/1400 (1979/80)

Source : Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85 (Riyadh, 1980), Table 4-39, p. 242.

TABLE 3.9

YANBU FACILITIES AND PROGRESS

Area/Project Type	Activity/Status[1]
1. Site Survey/Preparation	Comprehensive surveys underway
2. Housing	Prefabricated temporary housing completed.
3. Offices	12,600 m^2 complex completed.
4. Water	2,040 m^3/day barge mounted desalination plant operating. 2,850 m^3/day ground water supply.
5. Electric Power	Initial generation capacity/ distribution installed.
6. Transport:	
Airport	Airport facilities with B-707/ DC-8 capability completed.
Roads	20 km. completed.
Port	2 berths completed.
7. Telecommunications	2,000 telephone lines and other facilities installed.

(1) At the end of 1979/80.

Source: Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85, (Riyadh, 1980), Table 4-40, p. 243.

During the plan period substantial achievements have been made in the development of a strong and comprehensive physical infrastructure, especially the improvement of roads,

ports, transports, power generation and water supply system. At the same time, industrial programme for diversifying the economy of the Kingdom have also been expanded considerably. While the heavy industries, including petro-chemicals and steel re-rolling mills, have been established and improved, light industries have also not been overlooked. The industrial estates at Riyadh, Jeddah and Dammam expanded concomitantly with the industrial activities which for the first time started at Hofuf, Qasim and Mecca industrial estates on a limited scale. But the industrial activities, either based on hydrocarbons or not based on hydrocarbons, remained concentrated in the two industrial zones — Jubail and Yanbu.

During the plan period industrial manufacturing sector has been pushed with vigor and several steps have been taken for the exploitation of the Kingdom's oil and mineral wealth in addition to the gas-gathering scheme for utilizing the natural gas which was mostly flared and wasted till then.

In the hydrocarbon-based manufacturing, the government in 1975 commenced the design and construction of the world's largest gas-gathering programme for the collection, fractionation, and distribution of 34 billion cubic meters of 'wetgas' per year.[47] The construction scheme for an

---

47 Saudi Arabia: Third Development Plan 1980-85, p. 64.

East-West NGL pipeline with a capacity of 6.2. billion cubic meters a year was inaugurated at the Beri field in 1978.

Although no change occurred in the capacity of the existing export oriented refinery at Ras Tanura, production increased to 1,00,000 barrels a day between 1974 and 1979 in the two domestic oil refineries at Riyadh and Jeddah in addition to its existing capacity. This increase in production was, however, below the target set in the Second Plan. At the end of the Second Plan, agreements were signed between Petromin and its joint venture partners for the establishment of export refineries at Jubail and Yanbu. Another agreement was reached for a third export oriented refinery to be set up at Rabigh.

Further, a lubricating oil refinery with a capacity of 3,000 barrels a day came on-stream at Jeddah in 1978. Construction of a new lubricating oil blending plant with an initial capacity of 1370 barrels per day also commenced at Riyadh.[48]

Besides, the largest Fertilizer manufacturing plant in the Middle East, located at Dammam i.e. the Saudi Arabian Fertilizer Company (SAFCO) increased the production of urea to 3,00,000 tons in 1979, and the capacity of petroacid increased by 1,00,000 tons a year.[49]

---

48. Saudi Arabia: Third Development Plan 1980-85, p. 183.

49. Ibid., p. 65.

In 1979-80, SABIC commenced construction of a basic steel plant and linked rolling mill at Jubail and also the expansion and modernization of the Jeddah Steel mill.[50]

The industries not based on hydrocarbons have also achieved substantial progress notably in the Cement industry during the plan period. Three cement factories were set up during the Second Plan period which would provide self-sufficiency in the cement production to meet the needs of the construction industry at home as also provide substantial quantity for export.

Besides, many non-oil manufacturing industries were established to produce consumption goods such as paints, plastic pipes, electrical goods, assembled vehicles and carpets.

Generally, however, the growth was dominated by industries manufacturing products for the rapidly growing construction sector, and no production was made in the petrochemicals manufacturing industry by the end of the Second Plan period.

Although the Saudi Industrial Development Fund (SIDF) disbursed interest free loans of about SR 5500 million during the Second Plan period to encourage the private industrial investors, the industrial activity for diversifying the economy has been too slow to increase the absorptive capacity.[51] On

---

50 Ibid., p. 66.

51 "High Finance Favours the Big Firms", MEED, vol. 25, no. 12, 20-26 March 1981, p. 39.

the contrary, the tremendous government expenditures resulted in a high rate of inflation which further impeded the industrial development programme.

Chapter IV

INDUSTRIALIZATION AND DEVELOPMENT

The objectives of Saudi industrial planning clearly suggest that it does not want to remain as mere exporter of crude-oil. Like many other developing countries it has conceived its development strategy on the strength of industrialization. Aware of the fact that oil is a non-renewable resource, Saudi Arabia has planned its development within a time-frame. In its economic planning, industrialization is viewed as the basic instrument of economic development and diversification of the economy. It is assumed that the process of industrialization would ensure stability and self-sufficiency, and thereby reduce the dependency of the economy on the single expert product i.e. oil. It is also believed that the industrialization process would not only involve full utilization of indigenous productive resources but it would also provide greater employment opportunities, high standard of living and a more balanced economic growth.

It would be relevant to examine as to how far industrialization in Saudi Arabia has been able to achieve its targets. This would necessitate the study of industrialization in the context of development. The new wealth has no doubt created a favourable condition for industrialization by solving some basic problems like scarcity of capital, but at the same time cheap and abundant supply of capital can lead industrial process to wrong direction by choosing a path which might appear easy. It needs to be stated at the outset that industrialization

demands its own cost from the society. Therefore, it remains a question whether the industrialization, which is based on easily available but non-renewable natural resource, will be completed before the exhaustion of the oil reserves. Will it be of a lasting nature, will it be able to create a climate to incorporate all sections of the Saudi society, and lastly, will it be compatible with the religious sentiments of the Saudi masses – all this depends upon the strategy of industrialization.

Growth-Pole Strategy: An Evaluation

The strategy for industrialization of Saudi Arabia is based on the theory of development poles. Perrous was the first to evolve the concept of development poles in 1955 on the basis of his observations of the fact that "development does not appear everywhere and all at once; it appears in points or development poles with variable intensities; it spreads along diverse channels and has varying terminal effects for the whole of the economy."[1] Perrous was particularly "concerned with economic growth, and primarily with firms and industries and their interactions, and not with the geographical pattern of economic activity, or the geographical implications of economic growth, and intra inter-regional shifts".[2] However, in course of

1 Tormod Hermansen, "Development Poles and Development Centres in National and Regional Development: Elements of a Theoretical Framework" in Antoni Kuklinski, ed., Growth Poles and Growth Centres in Regional Planning, (Geneva : United Nations Research Institute for Social Development, 1972), p. 3.

2 Ibid., p. 21.

time the concept itself has been broadened and subjected to such a diverse interpretation that its original content has been changed and a number of similar concepts have arisen. Various authors have used different terms like 'Pole', 'Centre', 'zone', 'estate' etc. for the same phenomenon.[3]

The commonly accepted definition of growth pole is "an urban Centre of economic activity which can achieve self-sustaining growth to the point that growth is diffused outward into the pole region and eventually beyond into the less developed region of the nation."[4] Recently the development of growth-poles has received greater popularity in the developing countries as a strategy for accelerating the pace of economic growth and achieving a balanced economic development by inter-regional integration. To implement the industrial planning and programmes, Saudi Arabia has also adopted the strategy of creating industrial growth-poles in different regions of the economy in order to eradicate regional disparity and to achieve a balanced economic development. It was assumed

---

3 Some authors have, however, tried to distinguish growth poles of national significance, in-as-much as their development affects not only the structure of regions in which they are located but also inter-regional correlations and the country as a whole, and growth centres which are basically intra-regional in character--, V.M. Gokhan and L.N. Karpov, "Growth Poles and Growth Centres", in Antoni Kuklinski, ed., Growth Poles and Growth Centres in Regional Planning (Geneva: United Nations Research Institute for Social Development, 1972), p. 126.

4 Niles M. Hansen, "Criteria for a Growth Centre Policy" in Antoni Kulinski, ed., Growth Poles and Growth Centres in Regional Planning (Geneva: United Nations Research Institute for Social Development, 1972), p. 105.

that the creation of industrial growth--poles would generate spread-effects on its periphery that would lead to the corresponding development in all sectors of the economy. Thus, the structural transformation of the economy would increase employment opportunities, improve standard of living and sustain equitable distribution of its benefits to all sections of the Saudi society.

But it cannot be categorically stated that the creation of growth-pole would necessarily serve as an incentive to the economic development of its periphery. On the contrary, it may barely affect at all or may adversely affect its periphery by attracting a part of the working force from other productive sectors outside the region. It has generally been experienced that the creation of growth-poles has "led to hyper-urbanization and to the creation of a dualistic economic structure in the underdeveloped countries."[5] One may raise the question why Saudi Arabia adopted the strategy of industrial growth-poles for achieving a balanced economic development when it has already been proved ineffective in case of developing countries in generating spread-effects to its periphery? It appears that Saudi Arabia has chosen the growth-pole strategy because of economic as well as non-economic factors like political, social and security considerations. The major economic factors lie in the structure of the Saudi economy that

---

5 S.M. Shah, "Growth Pole or Agropolitan Approach"? Economic Times, 10 January 1976.

has the following features:[6] (i) the large size of the kingdom with sparse population, and extremely long distances between the cities, (ii) lack of adequate infrastructure for transportation and communication, (iii) heavy dependence of industrial development on import of raw-material, and (iv) lack of water with unsuitable climatic conditions.

The above factors are partly responsible for concentration of industries in few selected regions where power, water and other facilities required for industrialization are easily available. The other reasons for concentration of industries are socio-economic and political conditions within the country and also strategic considerations. At the internal level, to avoid recurrence of social and political tensions arising out of industrialization, new growth-poles were created in far off remote areas so as to segregate expatriate workers from local population, thereby minimizing interaction of ideas between them. At the external level, it appears that behind the growth-pole strategy lay the assumption to safeguard the economy, of late, against the external threat. The development of Yanbu on the Red Sea might eventually minimize the Saudi dependency on the strait of Hormuz the only export route which has been under constant security pressure.

The above factors, most probably, influenced Saudi Arabia to adopt growth-pole strategy for industrialization

---

6 Ragaei El Mallakh, Saudi Arabia : Rush to Development, (London: Croom Helm, 1982), p. 120.

which led to the establishment/planning of nine industrial estates in different regions viz., Jeddah, Mecca and Medina in the Western Region; Riyadh, Qasim and Buraidah in the Central Region; Dammam, Hofuf, ~~Qasim~~, and Al-Khobar in the Eastern Region; and Abha in the South-Western Region. In the First Development Plan economic activities were limited to the development of the three industrial estates — Riyadh, Jeddah and Dammam.

During the Second Plan period heavy emphasis was laid on the development of new industrial estates and expansion of the existing ones. Major expansions were at Riyadh, Jeddah and Dammam while new industrial estates were created in Hofuf, Qasim and Mecca. In total, the industrial estate areas were expanded from 2.5 million square meters to 14.0 million square meters at the end of 1980-81, as shown below in Table 4.1.

TABLE 4.1

SAUDI ARABIA : EXPANSION OF INDUSTRIAL AREAS UNDER FIRST AND SECOND PLANS (Million m^2)

Location	1974-75	1980-81
Riyadh	0.45	4.95
Jeddah	1.04	4.04
Dammam	1.00	3.60
Mecca	-	0.42[a]
Qasim	-	0.50
Hofuf	-	0.50
Total	2.49	14.01

● Not fully developed.

Source: Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85 (Riyadh, 1980), p. 233.

The most striking feature of the industrialization strategy of Saudi Arabia is the creation of the two giant industrial complexes[7] — Jubail and Yanbu. The Jubail industrial area comprises 900 sq. km. on the Arabian Gulf, about 80 km. north of Dammam. The Yanbu industrial area is 150 sq. km. in size on the Red Sea littoral, 350 km. north of Jeddah.[8]

In the two giant industrial complexes —Jubail and Yanbu — the major programme for industrialization is the development of large-scale export oriented hydrocarbon-based and energy intensive industries to convert the Kingdom's petroleum resources into high value processed products.[9] The major industries set up in the two industrial complexes were: five petrochemical complexes, four fertilizer plants, a steel mill and an aluminium smelting plant. In order to generate forward and backward linkages, a system of secondary and supportive facilities was also planned by providing two export refineries, a gas-gathering and treatment plant, and two East-West pipelines.

---

7 An industrial complex may be defined — in a very wide sense — as an ensemble of technologically and economically interconnected industrial units usually located on a given territory. Such a complex is normally a planned one, based on common physical infrastructure and developed around one major industry, which forms the core or the focal point of the complex. (Hermansen, n. 1, p. 26).

8 Kingdom of Saudi Arabia : Ministry of Planning, Third Development Plan 1980-85 (Riyadh, 1980), p.241.

9 Ibid., p. 240.

The key factor in the industrialization programme is the setting up of the gas-gathering and treatment plant to feed the planned petrochemicals and energy-intensive projects, and also the distribution system by constructing two East-West pipelines — one for transport of crude oil and the other for ~~Liquid~~ Natural Gas Liquids (NGL) ~~(LNG)~~ linking the Eastern Region with the Western Region. The significance of the scheme is evident, as pointed out by Turner and Bedore, that the oil pipeline would reduce Saudi dependency on the use of the Gulf and the strait of Hormuz, the route through which all oil carriers must pass before reaching the open sea. The oil pipeline to the Western Province would have the advantage of increasing Saudi exporting options by giving access to the Red Sea without leaving Saudi territory. This will also shorten sea routes to the West by some 3000 miles.[10]

Role of State and Private Sector in Industrialization

State plays very crucial role in the industrialization process in Saudi Arabia. The government participates directly in the establishment of basic heavy industry because of its "close connection to hydrocarbon policies and projects, the large-scale capital and other resource requirements, and the

---

10 Louis Turner and James Bedore, Middle East Industrialization : A Study of Saudi and Iranian Downstream Investments (England, Hants : Saxon House, 1979), p. 11.

long gestation period from planning to profitable operation of basic industry project."[11] At the same time the government has placed equal emphasis on the promotion of the private sector in the process of industrialization. In the non-hydrocarbon based manufacturing, the basic implementation role i.e. the detailed planning, construction, and operation of manufacturing plants, has always been assigned to the private sector with general guidance, supervision, and encouragement from the government.[12] It transpires from the above that the responsibility of the government centres around the establishment and development of the oil sector as well as of the oil based manufacturing industries whereas that of the non-hydrocarbon based manufacturing is entrusted to the private sector. While Petromin, a State owned corporation, directly participates in the field of oil production and SABIC, also a government corporation, undertakes the promotion of oil-based industries, SIDF has been created to provide all the necessary incentives for the growth of the private sector. State has been playing a dominating role in the Saudi economy from the very beginning but it was only during the First Plan period that its role was conceptualized at the institutional level.

In October 1975, there was a general reorganization in the country's central administration. The Central Planning Organization (CPO) created in January 1965 was transformed

---

11 Saudi Arabia : Third Development Plan 1980-85, p. 218.

12 Ibid., p. 226.

into the Ministry of Planning and a new Ministry of Industry and Electricity was created.[12a] In December, a Royal Commission for Jubail and Yanbu (RCJY) was formed for the sole purpose of eliminating red-tapism and providing basic infrastructural facilities necessary for the two industrial sites. Finally in August 1976 the Saudi Basic Industries Corporation (SABIC) was created with an initial capital of SR 10 billion for the establishment and operation of capital intensive basic industrial projects. So, by late 1976, it became clear that Petromin is responsible, in participation with foreign companies, for oil and gas sectors.[13] The Royal Commission (RCJY) would primarily be responsible for providing the basic infrastructure that includes housing, roads and other transport, public utilities, telecommunications, commercial markets, schools, medical facilities, training centres, and recreational facilities.[14] And SABIC would be responsible for all the major hydrocarbon-based projects. In all, the primary industries to be established through joint ventures with the private sector are the responsibility of the SABIC and Petromin.

These export-oriented heavy primary industries are surrounded by non-oil manufacturing, mainly light industries

---

12a Turner and Bedore, n. 10, p. 8.

13 Ibid., p. 9.

14 Saudi Arabia: Third Development Plan 1980-85, p. 241.

established basically to expand the industrial base of the economy. The medium manufacturing industries are primarily established to provide producer goods for supporting the infrastructural industries. One of the most prominent of these is the building material industry to meet the increasing demand of many construction projects which include manufacturing of red bricks, cement, wire mesh, asbestos, glass-fibre, pipes, etc.

Of lesser importance are the light industries designed for manufacturing consumer goods like food and beverages, soft drink, dairy, furniture, textile, printing, chemicals, and chemical related products including polyethelene bags, foam, and metallic and non-metallic products etc. for which the Kingdom depends mostly on imports. With the exception of cement and cement blocks, which are manufactured close to the raw materials, almost all of the medium and light producer goods industries in Saudi Arabia are located in the five industrial parks in Jeddah, Riyadh, Dammam, Buraidah and Mecca.[15] The newly developing industrial estates at Qasim, Hofuf, Medina and Abha are planned to further expand the production of the medium and light industries in the Kingdom.

Strong support is given to the private enterprises for the rapid development of these non-oil manufacturing industries. The government offered various incentives and

---

15 R.D. Crane , Planning the Future of Saudi Arabia (New York, Praeger, 1978), p. 18.

subsidies to attract the private investments. While the Ministry of Industry and Electricity is responsible for the execution of industrial policies and licensing of new manufacturing projects, the Industrial Studies and Development Centre (ISDC)[16] under the Ministry provides assistance in identifying viable projects through market research and feasibility studies. Private investments are further encouraged by providing industrial sites on long-term lease at nominal rent, interest-free medium and long-term loans from the Saudi Industrial Development Fund (SIDF)[17], and other indirect subsidies in the form of tax-exemption on imported machinery and equipment, spare parts and raw materials and tariff-protection on competing imports. Since its inception, the SIDF has played a major role in promoting the development of private non-oil manufacturing sector. More than 85 per cent of manufacturing companies licensed during the period 1974-75 to 1978-79 applied to the Fund

---

16 Mallakh, n. 6, p. 110.

17 The SIDF provides interest free loans of up to 50 per cent and 100 per cent of capital to manufacturing and electric companies respectively. At present, a service charge of between 2 and 3 per cent is levidd on industrial loans to cover administration costs. (Saudi Arabia : Third Development Plan 1980-85 p. 249).

for loans. It has been estimated that in 1976-77 the Fund disbursements alone accounted for over 50 per cent of private non-oil manufacturing investments. Fifty-four per cent of loans made during the period were for construction sector related projects. Recently consumer oriented, particularly food related projects, have consistently increased their share of Fund lending. Other major developments in which the Fund has been involved include paper products, textiles, furniture, and electrical products.[18] The structure of the SIDF loans approved for non-oil manufacturing industries during the period 1974-75 to 1979-80 is given in the following table 4.2.

The Third Development Plan envisaged the disbursement of SR 10,000 million from the Fund (SIDF) for industrial projects, compared with SR 5,500 million to the end of the Second Plan.[19]

The excessive incentives and subsidies offered to the private enterprises helped in improving the physical infrastructure to a great extent. The infrastructural framework in the major industrial estates was adequate at the

---

18 For details see Saudi Arabia : Third Development Plan 1980-85, p. 250.

19 "High Finance Favours the Big Firms", MEED (London), vol. 25, no. 12, 20-26 March 1981, p. 39.

TABLE 4.2

SIDF APPROVED LOANS BY SECTOR
(In millions of Saudi riyals)

Sector	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	Total
Foods	10	94	9	202	107	126	548
Beverages	-	7	22	16	52	126	223
Textiles	-	47	3	-	21	34	105
Leather & Substitutes	-	-	-	-	-	8	8
Carpentry Products	4	5	6	1	-	-	16
Wood Furniture	12	7	25	5	6	19	74
Paper Products	-	-	28	23	12	23	86
Printing	-	6	19	51	29	15	120
Chemicals	12	39	170	26	168	45	460
Oil & Gas Products	-	-	88	-	-	29	117
Rubber Products	-	-	14	3	-	-	17
Plastic Products	1	27	49	46	26	65	214
Ceramic Products	-	-	52	10	-	-	62
Glass Products	-	-	20	21	11	16	68
Cement	-	360	-	863	-	400	1623
Other Building Mats.	87	174	506	484	404	179	1834
Metal Products	7	202	88	183	124	145	749
Machinery	5	9	35	10	13	80	152
Electrical Equip't.	12	30	18	52	12	14	138
Transport Equip't.	-	21	24	92	-	13	150
Other Manufacturing	-	-	5	1	2	2	10
Shipping	-	-	68	-	-	-	68
Total	150	1028	1249	2089	987	1339	6842

Source : "Saudi Arabia: Industrialization Main Policy Objective", Arab Economist, (Beirut), vol. XIII, no. 145, October 1981, p. 16.

end of the Second Plan though it is not fully sufficient for the growing demands of large-scale industrial development. The development of physical infrastructure has brought a significant structural change in the extensive programme for exploration and exploitation of mineral resources — metallic and non-metallic needed to develop the non-oil manufacturing industries while at the same time, it has shown the way for successful implementation of the programme of expanding the hydrocarbon-based industries for accelerating economic productivity.

Impact of Industrialization

Growth-pole strategy has no doubt changed the economic landscape of Saudi society but at the same time it has unleashed new sets of issues. The logic of expanding and changing material base has its own demand. Thus after the two plans, the industrialization process in Saudi Arabia is facing its critical moments. This can be seen by the fact that in the Third Plan it has been decided to slow-down the pace of industrialization so that the gap between economic base and social values could be bridged by orderly way. A brief survey of the various issues emerging out of the process of industrialization, would provide the magnitude of the task faced by the Saudi planners in bringing the change in an orderly manner.

A vigorous programme to expand oil sector was implemented by increasing exploration and drilling activities, installing new pipelines, and adding new gas-oil separator

capacity, water injection facilities, natural gas liquid processing plants and supporting facilities.[20] Besides, the establishment of a number of oil refineries and petrochemical industries in joint ventures with foreign enterprises, has further improved the resource specialization of the economy.

Evidently diversification of the economy essentially depends upon the growth of the non-oil sectors. But as it will be argued, the oil-sector has been growing, over the years, faster than the non-oil sector thereby increasing a sectoral imbalance in the economy.

The changing weight of the oil sector in the economy as shown by the official data given in table 4.3 suggests that the contribution of the oil sector in total GDP has declined as compared to non-oil sector during the Second Plan period regardless of the price base. However, this table does not indicate the real growth of the oil sector. The oil sector in the table includes only oil production and refineries. It does not include industries based on oil and natural gas as a feedstock. Conceptually it will not be correct to assess the dependency on hydrocarbon sector in Saudi Arabia by excluding the manufacturing based on oil

---

20 Kingdom of Saudi Arabia : Ministry of Planning, Second Development Plan, 1975-80, (Riyadh, 1975), p. 141.

TABLE 4.3

SAUDI ARABIA : THE CHANGING WEIGHT OF THE OIL SECTOR

	Gross Domestic Product (SR billion)		Annual Growth Rate	Percentage shares in GDP	
	1974-75	1979-80	Percent	1974-75	1979-80
In Current Prices of the year concerned					
Oil	110.5	222.4		79.3	62.2
Non-oil	28.5	135.0		20.7	37.8
Total	139.3	357.4	20.7	100.0	100.0
In Constant 1979-80 Prices					
Oil	176.1	222.4		72.5	62.2
Non-oil	66.7	135.0		27.5	37.8
Total	242.8	357.4	8.0	100.0	100.0
In Constant 1969-70 Prices					
Oil	18.6	23.4		59.1	47.2
Non-oil	12.9	26.2		40.9	52.8
Total	31.5	49.6	9.5	100.0	100.0

Source : Kingdom of Saudi Arabia; Ministry of Planning Third Development Plan, 1980-85, (Riyadh, 1980), Table 2-2, p. 29.

feedstock. Though in the absence of sufficient data it is not possible to seggregate the share of such hydrocarbon manufacturing industries which are included in the non-oil sector, yet the predominance of the hydrocarbon based industries in the economy can be seen from the following Table 4.4.

TABLE 4.4

SAUDI ARABIA : MACRO ECONOMIC INDICATORS FOR NON-HYDROCARBON BASED MANUFACTURING

	Percent					
	1964-65	1970-71	1975-76	1976-77	1977-78	1978-79
Total Contribution to GDP						
Current Prices	1.9	2.1	1.3	1.5	1.8	2.1
Constant Prices(1969-70)	1.8	2.4	2.4	2.4	2.6	2.8
Total Contribution to Non-oil GDP						
Current Prices	3.8	5.5	4.5	4.4	4.4	4.7
Constant Prices(1969-70)	3.6	5.6	5.3	5.2	5.4	5.5

Source : Kingdom of Saudi Arabia: Ministry of Planning Third Development Plan 1980-85 (Riyadh, 1980), Table 4-34, p. 228.

Table 4.4 indicates that between 1964-65 and 1978-79 the contribution of non-hydrocarbon based manufacturing in

GDP has been showing a very marginal increase from 1.9 per cent to 2.1 per cent at current prices. But between 1970-71 and 1977-78, the share of the non-hydrocarbon manufacturing has declined from 2.1 per cent to 1.8 per cent. This means that there has been no increase in the share of the non-hydrocarbon based manufacturing in GDP between 1970-71 and 1978-79 because it remains constant at the figure of 2.1 per cent. This reveals the fact that the share of the hydrocarbon based industries in total GDP remains significant, thereby showing greater degree of dependency on the oil-sector.

The small contribution of the non-hydrocarbon manufacturing to the GDP indicates very low level of development of the regions related to non-hydrocarbon manufacturing activities while those concerned with hydrocarbon-based manufacturing have expanded considerably. The regional disparity thus created is, in fact, the result of wrong industrial planning and investment policies. By the beginning of the Second Development Plan the five regional socio-economic studies sponsored by the Ministry of Planning had been completed. These studies and similar works by other agencies indicate that there were significant regional imbalances both in terms of the structure of the economic activity and of employment. These studies further pointed out that the Northern and South-Western Regions had very low share of productivity in the economy.[21] Nonetheless, the Second Plan envisaged a very large

---

21 Saudi Arabia : Third Development Plan 1980-85, pp. 59, 61.

share of developmental investments for the Eastern and Western Regions regardless of the above findings. The heavy investments on the development of hydrocarbon-based manufacturing industries in Jubail in the Eastern Region and Yanbu in the Western Region have further widened the regional imbalances in the economy.

TABLE 4.5

PERCENTAGE DISTRIBUTION OF REGIONAL GDP BY MAJOR ACTIVITY, 1976-77

Activity	Region				
	Western	Eastern	Central	South-western	Northern
Oil and Oil Taxes	0.8	90.7	0.3	-	-
Non-oil	99.2	9.3	99.7	100.0	100.0
Total	100.0	100.0	100.0	100.0	100.0
Composition of non-oil GDP					
Agriculture	3.1	4.9	5.6	33.2	32.2
Manufacturing, Mining & utilities	6.7	6.5	6.2	3.1	2.6
Construction	25.9	26.5	25.1	16.3	16.7
Distribution	26.6	21.7	21.7	11.8	8.0
Transport and communications	4.9	8.8	4.3	4.3	8.3
Other services	22.7	21.7	24.5	15.5	16.5
Government services	10.2	9.8	12.6	16.0	15.8
Total non-oil GDP	100.0	100.0	100.0	100.0	100.8

Note : The imputed values of consumption of own production and rent of owner-occupiers have been included in the calculation of the table. The figures do not add up to 100 per cent due to rounding.

Source: Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85 (Riyadh, 1980), Table 2-21, p.60.

Table 4.5 indicates the uneven growth of economy in different regions of Saudi Arabia. The poorest and the most deprived are the South-Western and Northern Regions which is manifest from the relative share of growth in the regional GDP. It appears that the highly technology oriented hydrocarbon-based industrial centres located in the Eastern and Western Regions are surrounded by vast backwardness and poverty. The expansion of the secondary and supportive primary industries has, no doubt, increased substantially the economic growth of the Kingdom but only marginally affected the overall economic development. A large part of the Saudi population has remained backward and poor as they have not been involved in the industrialization process. Obviously, the developmental strategy has not benefited the majority of the Saudi society as pointed out by Sayigh, "the high income achieved is not a product of the performance of the society and its productive forces, the oil sector is an island of advanced technology and organization, and intensive capital investment and backwardness."[22]

The question arises who enjoys the benefits out of these national income and growth? The maximum benefit would naturally be in favour of those who have been involved in the

---

22 Yusif A. Sayigh, "Problems and Prospects of Development in the Arabian Peninsula", International Journal of Middle East Studies, (Cambridge), vol. 2, April 1971, p. 50.

developmental processes. In the words of Waterbury and Mallakh, "The real participants in the oil-based economy have been the small royal and urban bourgeois elites that make up the highest echelons of the government apparatus, the officers' corps, and the small (but rich) trading and business sector."[23] In consequence, majority of the masses belonging to lower class such as Bedouin herdsmen, craftmen, pearl divers and fishers etc. continue to live in poverty. The regional imbalance and growing inequality has further intensified the social and political tensions. Tribal and population groupings in the backward South-Western and Northern regions envy their counterparts in Central (Nejd), Eastern (Dahran-Dammam), and Western (Jeddah-Mecca-Medina) provinces. But even inhabitants of both the Eastern and Western provinces envy their central counterparts, not only for their greater share of the Kingdom's wealth, but also for their near monopoly of political power.[24]

Due to the rapid growth of oil based industrial sector in the development process, the agricultural sector could not grow equally though the increase in the agricultural development and production has been regarded as an integral part of the economic

---

23 John Waterbury and Ragaei El Mallakh, The Middle East in the Coming Decade : From Wellhead to Well-Being? (New York : McGrawHill, 1978), p. 77.

24 Saad Eddin Ibrahim, The New Arab Social Order : A Study of the Social Impact of Oil Wealth (London : Croom Helm, 1982), p. 113.

diversification programme.

TABLE 4.6

SAUDI ARABIA: THE GROWTH OF GDP IN THE PERIOD 1966/77 to 1984/85

ANNUAL COMPOUND GROWTH PER CENT PER YEAR
(In 1969/70 prices)

	1966-67 to 1969-70	First Plan 1970-71 to 1974-75	Second Plan@ 1975-76 to 1979-80	Third Plan 1980-81 to 1984-85
Producing Sectors				
Agriculture	3.62	3.59	5.40	5.35
Other mining	5.56	21.07	17.14	9.78
Other manufacturing	11.76	11.39	15.37	18.83
Utilities	11.31	10.93	24.41	29.46
Construction	3.32	18.57	17.78	(2.48)*
Service Sectors				
Trade	10.09	13.94	22.06	8.42
Transport	10.58	16.97	21.13	12.93
Finance	7.94	8.16	12.99	7.29
Other services	9.76	7.09	13.91	2.95
Government	4.39	7.75	5.96	7.16
Non-oil Economy	6.96	11.66	15.13	6.19
Total Economy	8.75	13.41	8.04	3.28

@ MOP Estimate * Negative Growth Rate.

Note : Sectoral date for the Ist Plan period shown above include the old constant price system, the 2nd and the 3rd Plan figures, however, use the revised price system for each sector. Values for the non-oil economy, the oil sector and the total economy for the second and Third Plans are in 1979-80 prices, partly because the 1984-85 composition of the oil sectors output has no equivalent in 1969-70.

Source: Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan 1980-85 (Riyadh, 1980), Table 1-4, p. 20.

Table 4.6 shows that the share of agriculture to the GDP even in the non-oil producing sectors has been relatively lowest over a thirteen year period from 1966-67 to 1979-80. The contribution of agricultural growth to the GDP in the First Development Plan period remained nearabout the same as was estimated prior to the development planning. It slightly increased from 3.59 per cent estimated in the First Development Plan to 5.40 per cent in the Second Development Plan and is projected 5.35 per cent for the Third Development Plan. The low share of growth to the GDP indicates the underdevelopment and backwardness of the agricultural sector. One of the reasons for its slow growth is the adverse impact of rapid growth of large-scale industrialization. As industrialization proceeded at a rapid pace, immigrants poured in from the countryside, depleting the rural areas and leaving agriculture, the traditional employer of millions, in a state of stagnation.[25] In 1980, 54 per cent of the total population live in town and cities — 42 per cent in metropolitan centres with the population over 100000 — while 46 per cent live in the rural areas. In 1970 approximately 36 per cent of the population was living in Urban areas.[26]

Moreover, the accelerating development of export-oriented industries has not only affected adversely the

---

25 Middle East Year Book 1980 (London, 1980), p. 67.

26 Saudi Arabia: Third Development Plan 1980-85, p. 14.

agricultural production but it has also retarded the traditional fishing and handicraft[27] industries. In consequence, a large part of the Saudi population has been deprived of their earnings from the traditional occupations which has added further problems to the already existing unemployment and backwardness.[28]

Though increase in employment opportunities, as declared by Hisham Nazir, head of the CPD at the beginning of the development planning, was one of the objectives of industrialization programme, but industrialization strategy could create a very small number of employment ppportunities. The adoption of capital-intensive approach for the development of hydrocarbon-based industries provided employment to a relatively small portion of Saudi labour force.[29] The nature of hydrocarbon-based industries necessitates highly sophisticated technology and skilled trained manpower which Saudi Arabia is short of, and hence a large number of foreign workers

---

27 The traditional handicraft industries of Saudi Arabia include the weaving, dyeing, and embro-idery of cloth, mat and basket weaving, pottery making, particularly the large porous water jugs used by pilgrims, the working of gold, silver and lesser metals into ornaments or daggers with sheaths studded with semi-precious stones, and some wood-carving and leather-working. Black tent cloths made from goat's hair, occasionally combined with roughwool, and rings in natural colours of brown, white and black are woven by most Bedouin families. For further details see G.A.Lipsky, Saudi Arabia: Its People, Its Society, Its Culture, (New Haven : Hraf Press, 1959), p. 232.

28 For details of the process of decline of craft guilds caused by the impact of western technology see Raphael Patai, "The Dynamics of Westernization in the Middle East", Middle East Journal (Washington, D.C.), vol. 9, no.1, Winter 1955, pp. 9-12.

29 Mallakh, n. 6, p. 73.

had to be imported at high costs to complete the industrialization programme. It has been estimated that "the capital-intensive plants being built, will need at least 65 per cent expatriate labour, 15 per cent of that being of the expensive 'western' variety".[30]

Though the detailed data of sectorwise employment of Saudis and non-Saudis population or work-force is not available for the Second Plan period, however on the basis of the aggregate figures it can be inferred that with the increasing pace of industrialization Saudi dependence on expatriate labour force has enhanced. During the Second Plan period the civilian labour force grew by 7.2 per cent as against 3.8 per cent in the First Plan period. However, the share of the Saudi nationals has declined from 72 per cent in 1975 to 57 per cent in 1980

TABLE 4.7

SAUDI ARABIA : GROWTH OF THE CIVILIAN LABOUR FORCE AND PROJECTED EMPLOYMENT

Nationality/Sex	Thousands			Annual Average Growth (Percent)	
	1975	1980	1980-85@	1975-80	1980-85@
Male	1651	2323	2461.3	7.1	1.2
Female	96	148	164.9	9.0	2.2
Total	1747	2471	2626.2	7.2	1.2
of which					
Saudi	1253	1411	1557.4	2.4	1.9
Non-Saudi	494	1060	1068.8	16.5	0.2

Note : @ Projected

Source: Kingdom of Saudi Arabia: Ministry of Planning Third Development Plan 1980-85 (Riyadh, 1980), Table 2-5, p. 35 and Table 3-7, p. 98.

30. Turner and Bedore, n.10, p.89.

As Table 4.7 shows, during the Second Plan period the Saudi national element grew by 2.4 per cent per year whereas the non-Saudi element registered a growth rate of 16.5 per cent. This clearly indicates that the participation of the Saudi indigenous population has not grown up correspondingly to the growth of the economy. Furthermore, in the Third Plan the participation of Saudi males and females in the labour force would continue to decline from an annual average growth rate of 2.4 per cent to 1.9 per cent.

The non-oil manufacturing industries, specifically the construction industry did create a large demand of labour for building of roads, ports, airports, houses, hospitals, schools and in various other developmental projects. A large number of Saudi nationals immigrated from the rural areas to the industrial centres in the hope of getting better jobs. But since the Saudi nationals have little interest in mannual jobs as it is considered low status jobs, the increased job opportunities were mostly filled in with expatriates from neighbouring Arab and non-Arab countries. The increased dependency on foreign labours isreflected from their large scale imports as shown in Table 4.8 given below:

Table 4.8 shows that in 1975 Arabs accounted for 90.6 per cent of the total expatriate work force in

TABLE 4.8

SAUDI ARABIA : EMPLOYMENT OF NON-NATIONALS BY NATIONALITY, 1975

Nationality	Number	Percent
Yemenis (North)	280400	36.3
Jordanian (including Palestinians)	175000	22.7
Egyptians	95000	12.3
Yemenis (South)	55000	7.1
Sudanese	35000	4.5
Lebanese	20000	2.6
Omanis	17500	2.3
Syrians	15000	1.9
Somalis	5000	0.6
Iraqi	2000	0.3
(Sub-total : Arabs)	(699900)	(90.6)
Pakistanis	15000	1.9
Indians	15000	1.9
Other Asian	8000	1.0
(Sub-total : Asians)	(38000)	(4.8)
European and American	15000	1.9
African and other	10000	1.3
Iranian	10000	1.3
Turks	500	0.1
Grand Total	773400	100.0

Source: J.S. Birks and C.A. Sinclair, International Migration and Development in the Arab Region (ILO, Geneva, 1980), Table 50, p. 159.

Saudi Arabia while Asians accounted for 4.8 per cent, Europeans 1.9 per cent and Africans 1.3 per cent.

The large inflow of foreign labours created social and political problems as "the immigrant from other Arab countries often represent a potential threat; they may hold progressive political beliefs and their loyalties may be to countries antagonistic to Saudi Arabia. Westerners in turn present an insidious cultural and social threat to the strict observance of the Islamic code".[31] However 1975 onwards, the trend of immigrants suggest that the number of Asians and Far-eastern work forces has increased compared to neighbouring Arab-countries. In the five years to 1980, the import of foreign labour from various countries include some 8,00,000 Yemenis, some 4,00,000 Filipinos, some 2,50,000 Palestinians, some 2,50,000 Koreans, some 2,00,000 Pakistanis, some 1,50,000 Indians and may be 1,00,000 Thais to do the dogsbody jobs. About 2,00,000 Syrians and Lebanese, and perhaps 45,000 Americans and 40,000 Britons do more exalted works.[32] Moreover, the movement of these foreign workers are restricted to labour camps located in isolated and remote industrial areas and they are not allowed to mix up with the local population just to avoid the interaction of ideas with the outside cultural values.[33]

---

31 Middle East Year Book 1980, p. 215.

32 Economist (London), vol. 282, no. 7224, 13-19 Feb.1982, p.33.

33 Middle East Year Book 1980, p. 215; J.S. Birks and C.A. Sinclair, "Economic and Social Implications of Current Development in the Arab Gulf: The Oriental Connection" in Tim Niblock, ed., Social and Economic Development in the Arab Gulf, (London: Croom Helm, 1980), p. 151.

However, the rapidly changing human and physical character of the kingdom stimulated strong feelings among the large portions of the illiterate population[34] of the Saudi society. "Historically, rapid development", as pointed out by McHale, "has always been at the expense of traditional cultural values, and almost by definition, modern development has increased secularization, promoted individualism and depreciated the value of the family and traditional religious commitments."[35] Likewise, the Saudis realize that the influence of foreign workers coming from different cultures and environments would destroy their own cultural values. The real danger to their traditional culture and society is from the rapid industrialization which inevitably leads to Westernization. It is generally believed that Westernization has brought cultural decadence to the Muslim society. The scientific development and technology, which is an integral and vital part of industrialization process, is an instrument of eradicating their roots by diverting the mind of a person from the Islamic moral values. They realize that the industrialisation would produce scientific devices like

---

34 The total Illiterates (of an age group of 15 and over) in Saudi Arabia was 97.7 per cent (Females 97.7 per cent and Males 70.1 per cent in 1980. (United Nations: Population Bulletin of ECWA(Beirut), no. 20, June 1981, Table 9, p. 31.)

35 T.R. McHale, "A Prospect of Saudi Arabia", International Affairs, (Oxford), vol.56, no. 4, Autumn 1980, p. 641.

Radio, T.V., VCR, Movie Films etc. which would degenerate the ignorant Saudi masses by broadcasting indecent and vulgar songs, and showing belly dances etc. So the impact of Western culture on their puritanical social system through the electronic media is viewed in reality an attack on Islam itself. Their growing resentment against westernization i.e. industrialization, urbanization, modern communications, bureaucracy, is evident from the incident of the seizure of Grand Mosque of Mecca in December 1979 by Tribal Islamic fundamentalists under the leadership of Juhaiman al-Otaibi, who had the basic demand for the restoration of the social and cultural values based on true principles of Islam.[36]

As a result the government had to slowdown the pace of industrial development. The Third Plan accorded top priority to the rapid development of indigenous manpower and allocated relatively less investments on the development of infrastructure and construction industries where the maximum number of expatriates are employed. Because of the limitations on the import of expatriates the non-Saudi segment of the labour force is likely to decline by the average annual growth rate of employment from 16.5 per cent in the Second Plan to 9.2 per cent during the Third Plan. (see Table 4.7.).

Hence, the government rectified its policy for rapid pace of transformation as against the low pace of social

---

36 For details see Ibrahim, n.24, pp. 115-18.

transformation of the sparsely populated tribal society, not yet able to"-------absorb the huge investments, the techniques, the processes, and generally all the 'newness' involved in as short a span of time as that which is planned and expected."[37] It planned to proceed causiously with the industrialization programme so as to avoid "the dangerous over exposure of Saudi national to foreign cultural influence through too rapid adoptation to the externals of modern economic life."[38]

This change in the industrial policy raised a number of issues: whether the Saudi industrialization programme can be carried on alongside with its theocratic tribal social system, or in other words, can Saudi Arabia become a Modern Industrial State without impairing Wahhabi values? Will the task of industrialization be completed before the exhaustion of oil reserves? This slow industrial progress is definitely causing a great concern to the decision makers and the ruling royal family. Because this might delay in achieving self- sufficiency before the oil-reserves are exhausted. However, the go-slow policy of the Saudi government seems to be the most appropriate step in diffiusing the social and political tensions among the illiterate tribal people against modernization. In the long run it might help to mobilize the popular will and energy for the drive of

---

37 Yusif A. Sayigh, The Determinants of Arab Economic Development, vol. II (London: Croom Helm, 1978), p. 164.

38 Crane, n. 15, p. 88.

industrial development. Furthermore, the industrialization will inevitably bring not only changes in the economic structure of the Kingdom but also in the traditional social modes of the society. The modern communication system will bridge the gap between the industrial centres and under-developed remote areas, and also will bring the historically secluded society in cont-act with the outside world permeating new ideas and radical change in the outlook.

The rapid urbanization i.e. rehabilitation of nomads in modern settlement dwellings, migration of rural population to industrial centres and modern secular education all will dissolve the tribal bonds and weaken its base. Thousands of youngmen, and even some women, who had gone abroad for study, will return imbued with modern secular ideas. In time, the foreign educated intelligentsia would acquire important positions in the bureaucracy and elsewhere, often replacing expatriates, with a desire for social reform.

It is observed that many upper middle class Saudis who have been educated abroad depart from the age old custom of marrying within the tribe, and marry non-Saudi girls because they want better educated wives than they can find among Saudis.[39] The shattering puritanical tribal system (the monopoly of a small elite over a large inarticulate mass)

---

39 William Rugh, "Emergence of a New Middle Class in Saudi Arabia", Middle East Journal, vol. 27, no. 1, Winter 1973, pp. 17-18.

has become a great threat to the existence of the royal family itself because the power of the ruling family is mainly based on the combined support of the Saudi tribes and Wahhabis.

Most probably this is the main reason that government has accorded above all top priority to preservation of spiritual values of the Saudi society. The higher emphasis on religious and moral education in place of scientific and technological education has consequently increased dependency on foreign labour needed for industrialization. This has further increased the dependency on imported technology as the nature of hydrocarbon based industries necessitates highly sophisticated technology. But at the same time foreign countries are reluctant to provide the required appropriate technology or transfer of technology because the Saudi Arabian petrochemical products are expected to compete with their own products. When most of the refining and petrochemical projects become operational, "around 70 per cent of the products would make their way to Western Europe, which is obviously the closest developed market open to them."[40] It seems that the export-oriented industrialization has further

---

40 Louis Turner and James Bedore, "The Trade Politics of Middle Eastern Industrialization", Foreign Affairs (New York), vol. 57, no. 2, Winter 1978-79, p. 316.

increased the dependency of the economy on the Western market.

It can be concluded that the export-oriented hydrocarbon based industrialization has increased greater dependency of the economy as a whole on oil sector and thereby on imported labours, technology and foreign markets than it was in the pre-industrialization phase.

Chapter V

CONCLUSION

The industrialization of Saudi Arabia presents a mixed picture. Like many developing economies it shows a high growth in a few selected sectors but a marginal growth in other vital sectors of the economy. It becomes clear from the preceeding study that the industrial planning has not been able to provide requisite cohesion to the economic system. On the contrary it has increased regional disparities, economic inequalities and unemployment thus adding pressure on the puritanical tribal social structure which might destabilize the political system in future. The growth-pole strategy has resulted in the concentration of economic activities to a few industrial centres. So far, it has not brought about adequate structural changes which could lead the economy towards self-reliance as proposed in the plans.

Nonetheless impressive progress has been achieved in the transformation of the physical structure of the economy. During the Plan period a network of tele-communications (telephone, telegraph, radio, television, etc.) have been built, transportation improved and municipalties (power generation, water supply and sewerage system) expanded, and a number of modern dwellings erected. Social welfare schemes have also been introduced by creating educational and training institutions and hospitals to provide free education and

medical facilities for all the inhabitants of the Kingdom.

The rapid development of the physical infrastructure has to some extent diversified the economic resource base. The existing industries such as cement, steel and desalination plants have been expanded. A number of light industries have been developed as a drive for import substitution. These industries are located in the nine industrial estates (namely Riyadh, Jeddah, Dammam, Buraidah, Mecca, Hofuf, Qasim, Medina and Abha) near major urban cities for manufacturing consumer goods to meet the consumption demand of the local market. Besides, the large-scale export oriented industries based on oil and natural gas have been pushed with vigour in the two industrial complexes at Yanbu and Jubail.

However, as the study suggests, the process of industrialization has revealed a number of conflicts and contradictions affecting the Saudi Society, and the process of industrialization itself. As has been pointed out earlier, due to the social pressure the Saudi planners have to change the whole industrial strategy from the maximization of resource specialization in the Second Plan to increase the resource productivity in the Third Plan.

Though the industrial planning has significantly increased the absorptive capacity of the economy, still a number of factors continue to inhibit the pace of industrial progress. First, the narrowness of the economic base of the

sparsely populated and vast deserted Kingdom drastically limits the range of industrial production. Still there is the shortage of water and power supply, scarcity of managerial, supervisory manpower, and primitive nature of indigenous entrepreneurship, institution and organizations essential to industrial development. Second, traditionalism and tribalism, both as social realities and as cultural traits, continue to dominate the Saudi Society thus creating major obstacle in the acceptance of technological change. Third, the inflation in the industrialized countries has also adversely affected the Saudi industrialization process. Inflated prices of raw materials, machinery, equipments, technology and also relatively high rate of wages to the foreign labours and experts imported from Western countries have largely contributed to the high cost of industrial production. Fourth, scarcity of administrative and professional talent as well as technical know-how, lack of interest in education and low participation of Saudi population in the production process has slackened the pace of industrialization.

Although the educational and professional training institutions have been vastly expanded, it will have its own gestation period. The relatively low emphasis on scientific and technological education restricts the growth of adequate manpower to the growing developmental demand. Hence, shortage of manpower still remains a major constraint inhibiting the industrial progress. The industrial programme continues to be

largely dependent on foreign labour in every sphere from high technology to manual labour. It is estimated that the number of expatriates increased from 4,94,000 in 1975 to 10,60,000 in 1980 and is likely to be 1068800 by 1984-85.[1]

To placate the feeling of resentment among the Saudis, the government has not only decided to curtail the strength of expatriates but has taken a number of measures to improve the growth of indigenous manpower. Simultaneously, a number of steps have been taken to provide various facilities and incentives. This includes subsidies of staple food items, free medical services and education, stipends to students attending technical training institutes, social payments and pensions to disabled and widows.[2] However, it remains to be seen whether the policies to promote development with the help of subsidies can be of lasting nature. The policy provides an impressive system of producer subsidies and investment incentives to encourage the private enterprises.[3] Some of the important subsidies and incentives provided directly to the

---

1 See Chapter IV, Table 4.7.

2 Ramon Knauerhase, "Economic Development of Saudi Arabia: An Overview", Current History (Philadelphia), vol. 72, no. 423, January 1977, p. 10.

3 For details see R.D. Crane, Planning the Future of Saudi Arabia (London : Praeger, 1978), pp. 186, 192.

local private entrepreneurs as well as to the foreign entrepremeurs undertaking joint ventures are as follows: i) long-term leasing of industrial cities including industrial parks, site development and roads at nominal rents; ii) supply of energy at a cost below posted prices, (iii) exemption of custom duties on imported machinery and equipments, and raw or semi-processed materials; (iv) income-tax exemption of foreign staff for a limited period; v) assistance in identification of viable projects through market research and feasibility studies; (vi) interest-free medium and long-term loans to small entrepreneurs by the Saudi Industrial Development Fund (SIDF), and (vii) free movement of funds into or out of country or permitting unlimited repatriation of capital and profits.

The extraordinary subsidies and incentives have, no doubt, attracted foreign investors from all over the world. But the increasing dependence ~~for~~ of industrialization on private sector in a tribal based economy will probably increase inequality and exploitation in the long run. Moreover, the policy of free-enterprise would strengthen the hold of large foreign enterprises over the economy and weakening the base of the local entrepreneurs as they will not be able to compete with them. This would defeat the objective of promoting indigenous private sectors. On the whole it will strengthen the control of foreign enterprises which would create its own economic and social and political problems.

Another crucial problem faced by Saudi industrial planning is the viability of the industrial structure itself. The industrial planning laying heavy stress on hydrocarbon based industries and the energy intensive industries, entirely depends on crude oil and natural gas which is mostly produced in conjunction with the crude oil production. Any reduction in crude oil production would slash drastically the production of the associated natural gas which in turn will cripple the dependent industrial projects.[4] However, if the government maintains oil production at the present level, the oil reserves will deplete at much faster pace, and with the exhaustion of crude oil the entire industrialization plan would collapse, "unless" as Mallakh has pointed out, "the oil-based manufacturing industry has been established so strongly that it continues to reap other locational advantages to make it profitable even after the comparative advantage which Saudi Arabia currently enjoys in the field ceases to exist".[5] In other words, the heavy dependence of Saudi industrialization on oil and natural gas has its own contradictions. The process of industrialization can be sustained only if the current rate of oil production is

---

4 Louis Turner and James Bedore, "The Trade Politics of Middle Eastern Industrialization", Foreign Affairs (New York), vol. 57 , no. 2, Winter 1978-79, pp. 313-14.

5 Ragaei El Mallakh, Saudi Arabia : Rush to Development, (London: Croom Helm, 1982), p. 165.

maintained. It is estimated that the Saudi oil production declined to its lowest level in a decade, bringing it to 5.9 billion barrels per day (bpd) against its official ceiling of 7 million bpd and a record high of 10.3 million b.p.d.[6]

Another impact of Saudi industrialization is likely to be on the world industrial and monetary systems. It is assumed that the source of income being augmented by industrial production would lessen the dependency of Saudi economy on oil-revenues and may eventually affect a change in its present oil production policy. As Saudi Arabia has the greatest proven oil reserves, the largest exportable surplus and massive reserves of petrodollars, it holds a unique position to set the trend of pricing and supply of the life blood of the world industrial system. Similarly, unilateral actions in Saudi foreign investment policy can even upset the structure of international monetary system.[7] Thus a relative change in oil production and pricing, and investment policies of Saudi Arabia can affect the World's longterm energy requirements and the World's monetary system.

However, Turner and Bedore has pointed out that every extra-billion dollar spent on the capital-intensive industries

---

6 OPEC Panel Meets Tomorrow, Economic Times, 19 August 1982, p. 8.

7 S.J. Rosen and H. Shaked, "Arms and the Saudi Connection", Commentary (New York), vol. 66, June 1978, p. 33.

makes an added dent in the fast-falling petro-dollar surplus reducing its ability to slash oil production drastically which would contribute to the world monetary stability.[8] But the other aspect of this diminishing petro-dollar surplus is more serious as in that case Saudi Arabia would be able to lend lesser amount of financial assistance that would hamper the economic development of many developing countries.

In the circumstances Saudi Arabia is likely to adopt a moderate oil production and pricing policy to avoid a drastic disruption of the World economy especially that of non-Socialist industrialized countries, as its own future prospects of industrial success are closely tied up with them. The nature of the hydrocarbon based industries necessitates highly sophisticated technology, equipments and knowhow that only the industrially advanced Western countries can provide. Besides, when the industrial production would come on stream, it would need Western World which is the closest market where such products can be sold. However, Saudi Arabia can compete only if they develop their own technological base so as its products of the newly installed industries such as petro-chemicals could compete with that of the advanced western countries in the international market.

The problem of marketing gets further complicated

---

8 Turner and Bedore, n. 4, p. 313.

as all the neighbouring states of the Arab-Gulf having similar resource endowments are also developing their own export-oriented hydrocarbon-based industries, many of which are not very far-off from those of Saudis. Duplication of industrial projects such as petrochemicals, fertilizers, steel and aluminium have given rise to fears that competition in marketing of their products would escalate within the Arab-Gulf region itself by the mid-1980s when most of these projects are expected to be completed.

In recent years the Arab-Gulf states have shown keen interest for regional economic cooperation and planning to resolve the forthcoming problem of duplication industries and marketing of their industrial products. Saudi Arabia, for example, ~~had~~ decided to cancel the huge aluminium smelter project at Jubail in the hope of avoiding more duplication of those in Bahrain and Dubai. Abu Dhabi also halted the construction of its massive industrial complex at Ruwais pending further coordination with other Gulf-States.[9] But many other states of the Arab-Gulf continued their own industrialization programme threatening the future profitability of the area as a whole.

Realizing this divergence as ~~determined~~ detrimental to their own economic interests Saudi Arabia, Bahrain, Qatar and the UAE

---

9 Smith, P.A., "Industrialization and Development", Middle East Year Book 1980, p. 67.

formed the Gulf Organization for Industrial Consultation (GOIC),[10] with the main object of coordinating their industrial planning. At its conference held in Qatar in the Summer of 1979 the newly formed GOIC undertook the study of how to coordinate the production and marketing of polyethylene and other plastic products, while the rulers of Bahrain, Qatar and Kuwait pressed ahead with moves to encourage more joint planning in the region as a whole.[11] Despite the continued insistence and efforts for an agreement on regional economic coordination, the Arab-Gulf states continue to go ahead on their own without considering the longterm mutual interests of their industrial programmes because all parties, as explained by Knauerhase, "are unwilling to forego any benefit that can be derived from the development of their own economies."[12]

It shows that if Saudi Arabia succeeds in reaching an agreement on a regional economic coordination with other states of the Arab-Gulf, it will increase its capacity to compete in the industrialized countries of the West and in the

---

10 For details see H.G. Hambleton, "The Saudi Arabian Petrochemical Industry: Its Rationale and Effectiveness", in Tim Niblock, ed., State, Society and Economy in Saudi Arabia (London: CroomHelm, 1982), p. 267.

11 P.A. Smith, "Industrialization and Development", Middle East Yearbook 1980, p. 67.

12 Ramon Knauerhase, "Oil Producing Middle East States", Current History, vol. 76, no. 443, January 1979, p. 12.

international market because of the comparative advantage.

Apart from the necessity for strengthening the base of the regional economic coordination to promote future marketing prospects, there remains much more to be done in order to achieve better developmental results. The experience of the industrial planning stretching over a period of more than a decade suggests the following points to be taken into account.

1. The abundance of capital and shortage of labour has made Saudi Arabia to give preference to export-oriented capital-intensive technique for its industrialization. Actually the economy should have not adhered strictly to one developmental technique by neglecting the other but the reconciling of the two approaches is the best for achieving a balanced growth. While capital intensive methods should be applied for basic heavy industries, labour-intensive methods be used for light industries manufacturing consumer goods. Emphasis should be laid ~~given that these industries generate~~ on generating adequate forward and backward linkages, of these industries.

2) The emphasis from growth-pole strategy needs to be shifted in favour of decentralization by integrating new industries in other sectors of the economy in order to reduce growing imbalance between relatively rich and backward areas.

3) The conception of free-enterprise system based on high subsidies has encouraged profiteering and growth of rentier class. The role of private sector needs to be

redefined and restrictions be imposed on the total freedom enjoyed by the foreign enterprises. This will help in checking further exploitation and achieving faster industrial growth and self-reliance.

4) The development of a network of mass-media communications together with enormous financial subsidies has, as of late, facilitated the acceptance of the technological change in the kingdom. But its industrial plans still heavily depend on the imports of capital goods and technology from industrialized Western countries in exchange of oil-exports. Therefore, Saudi Arabia should make sustained efforts to develop advance science and technology in its own research and training institutes to man the growing industrial complexes.

5) It appears that there is a predominent feeling among the Saudi decision makers that the unlimited oil-revenues are adequate to buy every kind of consumer goods and also to import from sophisticated technological equipments to manual labours needed for industrialization, but an economy cannot live for long by purchases abroad alone. To achieve a self-sustained economy Saudi Arabia has to develop its own resources by mobilizing the indigenous population to participate on a large scale in the industrial productive activities lest it ~~be~~ remains ~~turned~~ only as a consumers' and rentier's society.

6) So far Saudi Arabia has been exploiting its natural resources — mainly crude oil and natural gas and minerals —

in response to the needs of the international market, particularly the Western world. The production and export of the mineral resources has to be governed by the indigenous needs instead of exporting them as raw material. Besides, crude oil export may also be tied-up with the marketing of its industrial products in future.

The study of industrialization in oil-based economies like Saudi Arabia lead to the conclusion that despite being in the position of advantage — cheap availability of energy and capital - the process of industrialization has not been able to respond to the problems of underdevelopment adequately. These economies too need to review and revise the role of industrialization in the development process. It seems so long the process of industrialization draws its growth inducement from external environment, it will have very limited role in unleashing the creative potentialities of a society, on the contrary it might create new distortions.

BIBLIOGRAPHY

PRIMARY SOURCES

Birks, J.S. and Sinclair, C.A., International Migration and Development in the Arab Region (Geneva: ILO, 1980).

Food and Agricultural Organization: Production Year Book (Rome).

International Labour Office: Year Book of Labour Statistics, (Geneva).

International Labour Office: Manpower and Employment in Arab Countries (Geneva, 1977).

International Monetary Fund: International Financial Statistics, (Washington, D.C.)

Kingdom of Saudi Arabia: Central Planning Organization, First Development Plan 1970-75 (Riyadh, 1970).

Kingdom of Saudi Arabia: Ministry of Planning, Second Development Plan 1975-80, (Riyadh, 1975).

Kingdom of Saudi Arabia: Ministry of Planning, Third Development Plan, 1980-85 (Riyadh, 1980).

United Nations: Industrial Development in the Arab Countries (New York, 1967).

United Nations: Population Bulletin of ECWA (Beirut), no. 20, June 1981.

United Nations: Regional Plan of Action for the Application of Science and Technology to Development in the Middle East (New York, 1974).

United Nations: Studies on Development Problems in Countries of Western Asia, 1974 (New York, 1975).

World Bank: World Development Report (Washington, D.C.)

World Bank: World Tables (London: Johns Hopkins).

SECONDARY SOURCES

Books

Ajami (Riad A.), Arab Response to the Multinationals (New York: Praeger, 1979).

Aliboni, Roberto, ed., Arab-Industrialization and Economic Integration (London: Croom Helm, 1979).

Alsagoff, Dato Al-Syed Ibrahim Bin Omar, An Introduction to Saudi Arabia: Twentieth Centuries Miracle of Progress (n.d., 1967).

Amin, Golal A., Modernization of Poverty: A Study in the Political Economy of Growth in Nine Arab Countries 1945-70 (Leiden: E.J. Brill, 1974).

Anthony, John Duke, ed., The Middle East: Oil Politics and Development (Washington, D.C. : American Enterprise Institute for Public Policy Research, 1975).

Badr, Fayez Ibrahim, Development Planning in Saudi Arabia: A Multinational Study (Ann Arbor : University Microfilms, 1968).

Al-Bashir, Faisal Safooq, Structural Econometric Model of the Saudi Arabian Economy, 1960-70 (New York: John Wiley, 1977).

Becker, A.S., Hansen, Bent, and Kerr, M.K., The Economics and Politics of the Middle East, (New York: Elsevier, 1975).

Beling, Willard A., ed. King Faisal and the Modernization of Saudi Arabia (London: Croom Helm, 1980).

Birks, J.S. and Sinclair, C.A., Arab Manpower: The Crisis of Development (London: Croom Helm, 1980).

Casadio, Gian Paolo, Economic Challenge of the Arabs (Lexington: Lexington Books, 1976).

Clarke, John I., and Bowen-Jones, H. ed., Change and Development in Middle East (London: Methuen, 1981).

Cleron, Jean Paul, Saudi Arabia 2000 : A Strategy for Growth (London: Croom Helm, 1978).

Cook, M.A., ed., Studies in the Economic History of the Middle East (London: Oxford University Press, 1970).

Cooper, C.A. and Alexander, S.S., ed., Economic Development and Population Growth in the Middle East, (New York: Elsevier, 1972).

Crane, Robert D., Planning the Future of Saudi Arabia: A Model for Achieving National Priorities (New York: Praeger, 1978).

Diab, M.A., Inter-Arab Economic Cooperation, 1951-60 (Beirut: Economic Research Institute, American University of Beirut, 1963).

Edens, David G., Oil and Development in the Middle East, (New York: Praeger, 1979).

Al-Farsy, Fouad, Saudi Arabia: A Case Study in Development (London: Kegan Paul International, 1982).

Fenelon, K.G., The United Arab Emirates: An Economic and Social Survey (London: Longman, 1974).

Fenelon, K.G., The Trucial States : A Brief Economic Survey, 2nd Edn., (Beirut: Khayats, 1969).

Grunwald, K. and Ronall J., Industrialization in the Middle East (New York: Council for Middle Eastern Affairs Press, 1960).

Haider, M.N.H., Economic Process in Selected Arab Countries — Prospects and Fulfilment (Ann Arbor, University Microfilms, 1979).

Halliday, Fred, Arabia Without Sultans (England: Penguin Books, 1974).

Hallwood, Paul and Sinclair, Stuart, Oil, Debt and Development (Allen & Unwin, London, 1981).

Hassanain, M.A., Economic Review of the Saudi Arabian Planning Framework (Ann Arbor: University Microfilms, 1979).

Hawley, Donald, The Trucial States (London: Allen and Unwin, 1971).

Herfindahl, Orris C., Natural Resource Information for Economic Development (Maryland; Baltimore: Johns Hopkins, 1969).

Hershlag, Z.Y., The Economic Structure of the Middle East (Leiden: E.J. Brill, 1975).

Hobday, Peter, Saudi Arabia Today: An Introduction to the Richest Oil Power (London: Macmillan, 1978).

Ibrahim, Saad Eddin, The New Arab Social Order: A Study of the Social Impact of Oil Wealth (London: Croom Helm, 1982).

Katanani, A.K., Policies and Model for Planning: The Economic Development of the Non-Oil Sector in Saudi Arabia (Ann Arbor: University Microfilms, 1979).

Khouja, M.W. and Sadler, P.G., The Economy of Kuwait: Development and Role in International Finance (London: Macmillan, 1979).

Knauerhase, Ramon, The Saudi Arabian Economy (New York: Praeger, 1975).

Kuklinski, Antoni, ed., Growth-Poles and Growth Centres in Regional Planning / (Geneva: United Nations Research Institute for Social Development, 1972).

Al-Kuwari, Ali Khalifa, Oil Revenues in the Gulf Emirates: Patterns of Allocation and Impact on Economic Development (Boulder, Colo.: Westview, 1978).

Laqueur, Walter Z., ed. The Middle East in Transition: Studies in Contemporary History (New York: Frederick A Praeger, 1958).

Lipsky, George A., Saudi Arabia: Its People, Its Society, Its Culture (New Haven: Hraf Press, 1959).

Long, David E., Saudi Arabia (California: Sage Publications, 1976).

Mallakh, Ragaei El.; Kadhim, Mihssen; and Poulson, Barry, Capital Investment in the Middle East: The Use of Surplus Funds for Regional Development (New York: Praeger, 1977).

Mallakh, Ragaei El., Qatar : Development of an Oil Economy (London: Croom Helm, 1979).

_____, Economic Development of the UAE (London: Croom Helm, 1980).

_____, OPEC: Twenty Years and Beyond (London: Croom Helm, 1981).

Mallakh, Ragaei El., and Atta, Jacob K., The Absorptive Capacity of Kuwait, (Toronto, Mass.: Lexington, 1981).

Mallakh, Ragaei El., Saudi Arabia: Rush to Development, (London: Croom Helm, 1982).

Mallakh, Ragaei El. and Mallakh, Dorotha H.L., Saudi Arabia: Energy, Development Planning and Industrialization (Toronto: Lexington, 1982).

Meier, G.M., ed., Leading Issues in Economic Development, 3 edn. (New York: Oxford University Press, 1976).

Myrdal, Gunnar, Asian Drama: An Inquiry Into the Poverty of Nations, 3 vols. (London: Penguin, 1968).

Niblock, Tim, ed., Social and Economic Development in the Arab Gulf (London: Croom Helm, 1980).

Niblock, Tim, ed., State, Society and Economy in Saudi Arabia (London: Croom Helm, 1982).

Odell, Peter R. and Vallenilla, Luis, The Pressures of Oil: A Strategy for Economic Revival (New York: Harper and Row, 1978).

al-Otaiba, Mana Saeed, Petroleum and the Economy of the United Arab Emirates, (London: Croom Helm, 1977).

al-Otaiba, M.S., OPEC and the Petroleum Industry (London: Croom Helm, 1976).

Philby, Harry St. John B., Arabia of the Wahhabis (New York: Arno Press, 1973).

Rustam Ali, Sheikh, Saudi Arabia and Oil Diplomacy (New York: Praeger, 1976).

Sadik, M.T. and Snavely, W.P., Bahrain, Qatar and the United Arab Emirates, (London: Lexington, 1972).

Sayigh, Yusif A., The Economics of the Arab World : Development Since 1945, vol. I, (London: Croom Helm, 1978).

_____, The Determinants of Arab Economic Development vol. II (London: Croom Helm, 1978).

_____, The Arab Economy : Past Performance and Future Prospects (London: Oxford University Press, 1982).

Sherbiny, N.A. and Tessler, M.A., ed., Arab Oil: Domestic Transformation and International Implications, (New York: Praeger, 1976).

Stone, Russel, A., ed. OPEC and the Middle East: The Impact of Oil on Societal Development (New York: Praeger, 1977).

Turner, Louis and Bedore, James M., Middle East Industrialization: A Study of Saudi and Iranian Downstream Investments (England, Hants.: Saxon House, 1979).

Twitchell, Saben, Karl and Jurji, E.J., Saudi Arabia: With an Account of the Development of its Natural Resources (Princeton: Princeton University Press, 1958).

Waterbury, John and Mallak , Ragaei El., The Middle East in the Coming Decade: From Wellhead to Wellbeing? (New York: McGraw Hill, 1978).

Wells, Donald A., Saudi Arabian Development Strategy (Washington, D.C. : American Enterprise Institute for Public Policy Research, 1976).

Wilson, Rodney, The Economies of the Middle East (London: Macmillan, 1979).

_____, Trade and Investment in the Middle East (London: Macmillan, 1977).

Zahlan, A.B., ed., Technology Transfer and Change in the Arab World: The Proceedings of a Seminar of the United Nations Economic Commission for Western Asia (Beirut, 1977), (Oxford: Pergamon Press, 1978).

Zahlan, Rosemarie Said, The Creation of Qatar (London: Croom Helm, 1979).

Ziwar — Daftari, May, ed., Issues in Development: The Arab-Gulf States (London: M.D. Research and Services Limited, 1980).

Articles in Periodicals

Adelman, M.A. and Zimmerman, Martin B., "Prices and Profits in Petrochemicals: An Appraisal of Movement by less developed countries", Journal of Industrial Economics (London), vol. 22, no. 4, June 1974, pp. 245-254.

Aiyer, S. Krishna, "Industrialisation and Economic Development", Mainstream (New Delhi) vol. X, no. 32, 8 April 1972, pp. 25-27.

Algosaibi, H.E. Dr. Ghazi, "The Strategy of Industrialization in Saudi Arabia", Journal of Energy and Development (Colorado), vol. 2, no. 2, Spril 1977, pp. 218-23.

Al-Ali, Hashim M. and Sivaciyan, Sevan, "The Oil Sector in the Saudi Economy in the Mid-1970s: An Inter-industrial Approach", Journal of Energy and Development (Colorado), vol. 6, no. 1, Autumn 1980, pp. 109-20.

Alymi, Ali Hassan, "The Coming Instability in Saudi Arabia", Strategic Digest (New Delhi), vol. VIII, no. 1, January 78, pp. 22-30.

Amuzegar, Johanger, "Ideology and Economic Growth in the Middle East", Middle East Journal (Washington, D.C.) vol. 28, part 1, Winter 1974, pp. 1-19.

"The Anatomy of the Oil Industry", Middle East Year Book 1978 pp. 82-84.

"Arab Aid Boosts International Development", Arab Economist (Beirut), vol. XIII, no. 141, June 1981, pp. 11-12, 14.

Azzi, Robert, "The Saudis Go for Broke", Fortune (Chicago), vol. 98, no. 2, 31 July 1978, pp. 110-13.

Bahrain, MEED (Special Report), September 1981.

Bahrain, Middle East Year Book 1979 (London, 1979), pp. 83-87.

Bailey, Robert, "Saudi Phones Developed on the Right Lines", MEED (London), vol. 23, no. 40, 5 October 1979, pp. 11-12.

Bailey, Robert, "Saudi Arabia Makes Long Range Telecom Plans", MEED (London), vol. 24, no. 48, 28 November 1980, p. 9.

Beaumont, Peter, "Water and Development in Saudi Arabia", Geographical Journal (London), vol. 143, part 1, March 1977, pp. 42-60.

Bill, James A., "Class Analysis and the Dialectics of Modernization in the Middle East", International Journal of Middle Eastern Studies (London), vol. 3, no. 4, October 1972, pp. 417-34.

"The Boldest Development Plan Launched King Khaled", Arab Economist (Beirut), vol. VII, no. 77, June 1975, pp. 54-56.

Borchgrave, Arnaud de, "The Saudi Backlash", Newsweek, (New York), 12 March 1979, p. 22.

Bouari, N.E., "Industry : Ambitious Plans", Arab Economist (Beirut), vol. VI, no. 65, June 1974, pp. 34-44.

Bowen-Jones, H., "The Second Saudi Arabian Development Plan", Middle East Year Book 1977 (London, 1977), pp. 76-80.

Buchan, James, "Saudi Promise and Performance", Middle East International (London), no. 133, 12 September 1980, pp. 6-7.

Calvocoressi, Peter and Mascarenhas, Anthony, "Booze and the Saudis" Sunday Times (London), 18 June 1978.

Campbell, John C., "Oil Power in the Middle East", Foreign Affairs, (New York), vol. 56, no. 1, October 1977, pp. 89-110.

Chalabi, F. Al. and Janabi, A. Al, "Optimum Production and Planning Policies", Journal of Energy & Development (Colorado), vol. 4, no. 2, Spring 1979, pp. 229-58.

Chenery, H.B., "Patterns of Industrial Growth", American Economic Review, (Cambridge), vol. 50, September 1960.

"Construction & Contracting", Middle East MEED (Special Report), March 1981.

Crane, R.D.,"Planning Islamic Style", Fortune (Chicago), vol. 98, no. 2, 31 July 1978, pp. 114-16.

Damiani, Nicola, "Saudi Arabia: Massive Building To Integrate Kingdom", Arab Economist (Beirut), vol. XI, no. 112, January 1979, pp. 26-27.

"Dammam: Port berths left empty as Aramco handles own imports", MEED (London), vol. 22, no. 9, 3 March 1978, p. 8.

Davis, K. and Golden, H.H., "Urbanization and the Development of Pre-Industrial Areas", Economic Development and Cultural Change, (New York), vol. 3, October 1954, pp. 6-26.

Dawisha, Adeed I., "Internal Values and External Threats: The Making of Saudi Foreign Policy", Orbis (Philadelphia) vol. 23, no. 1, Spring 1979, p. 129.

Dawisha, Adeed, "Saudi Arabia's Search for Security", Adelphi Papers (London), no. 158, Winter 79-80, pp. 1-36.

Demarce, Allan T., "Aramco is a Lesson in the Management of Chaos", Fortune (New York), vol. 89, no. 2, February 1974, pp. 58-64.

"Development of Ports and Roads in Saudi Arabia", Africa-Middle East Business Digest (Beirut), vol. 19, no. 242, January 1975, pp. 8-9.

"Economic Report: Saudi Arabia", Arab Economist (Beirut), vol. VI, no. 60, January 1974, pp. 58-61.

Edens, David G., & Snavely, William P., "Planning for Economic Development in Saudi Arabia", Middle East Journal (Washington, D.C.), vol. 24, no. 1, Winter 1970, pp. 17-30.

Edgar, Tim, "Saudi Market Seen as Rewarding But Competitive", MEED (London), vol. 23, no. 24, 15 June 1979, p. 14.

Al-Faisal, Mohamed, "The Oil-into-Water Miracle", Geographical Magazine, (London), vol. XLIX, no. 3, December 6, pp. 169-73.

"Financial Experts Stress Inter-Arab Cooperation", Arab Economist (Beirut), vol. XII, no. 129, June 1980, pp. 33-36.

"Five Year Plan Creates Infrastructure for Industry", Arab Economist (Beirut), vol. X, no. 108, September 1978, pp. 13-14.

"Focus on Saudi Arabia (Series of Articles), Strategic Digest (New Delhi), vol. VIII, no. 6, June 1978, p. 28.

Fouad, Mahmoud H., "Petrodollars and Economic Development in the Middle East", Middle East Journal (Washington, D.C.) vol. 32, no. 3, Summer 1978, pp. 307-21.

Gaitonde, V.A., "Contradictions of Capitalist Industrialization in Developing Countries", Mainstream (New Delhi), vol. XVI, no. 37, 13 May 1978, pp. 22-27.

George, Alan, "Making the Desert Bloom : A Myth Examined", Journal of Palestine Studies (Washington, D.C.), vol. VIII, no. 2, Winter 1979, pp. 88-100.

Gottheil, Fred M., "The Manufacture of Saudi Arabian Economic Power", Middle East Review (New York), vol. XI, no. 1, Fall 1978, pp. 18-23.

"Gulf States: GOIC Achieves Tangible Progress", Arab Economist (Beirut), vol. XIV, no. 152, May 1982, pp. 24-26.

"Gulf States : Industrial Planning: A Common Concern", Arab Economist (Beirut), vol. XIII, no. 136, January 1981, p. 21.

"Gulf States : Industrialization and Regional Cooperation", Arab Economist (Beirut), vol. VII, no. 74, March 1975, pp. 20-22.

"Gulf States: Prospects for Iron and Steel Industry Encouraging", Arab Economist (Beirut), vol. XIII, no. 147, December 1981, p. 22.

Halliday, Fred, "Saudi Arabia : Bonanza and Repression", New Left Review (London), no. 80, July-August 1973, pp. 3-28.

Hay, Sir Rupert, "The Impact of the Oil Industry on the Persian Gulf Sheikhdoms", Middle East Journal (Washington, D.C.), vol. 9, no. 4, Autumn 1955, pp. 361-72.

Heard-Bey, Frauke, "The Gulf States and Oman in Transition", Asian Affairs (London), vol. 59, Part I, February 1972, pp. 14-22.

Heard-Bey, Frauke, "Social Changes in the Gulf States and Oman", Asian Affairs (London), vol. 59, Part III, October 1972, pp. 309-16.

"High Finance Favours the Big Firms", MEED (London), vol. 25, no. 12, 20-26 March 1981, p. 39.

Hillmore, Peter, "The Crude Realities of Saudi Power", Guardian Weekly (Manchester), 26 March 1975.

Hitti, S. and Hamad, S., "Economy and Finances of Saudi Arabia", IMF Staff Papers (Washington, D.C.), vol. XXI, no. 2, July 1974, pp. 247-306.

Holden, David, "What King Faisal is Doing with His Petro-Millions", Sunday Times (London), 16 February 1975.

"Industrialization in the Middle East: Progress, Problems and Projects", Middle East Year Book 1977 (London, 1977), pp. 96-99.

Iqbal, Mohammed, "Planning and Development in Saudi Arabia", Yojna (New Delhi), vol. XXV, no. 10, 1-15 June 1981, pp. 13-15.

Iqbal, Dr. Sheikh M., "Saudi Arabia: The Emerging Power" -I, Radiance (Delhi), 8 October 1978, p. 3.

_____, "Saudi Arabia: The Emerging Power"- II, Rediance (Delhi), 15 October 1978, p. 2.

Issawi, Charles, "Growth and Structural Change in the Middle East", Middle East Journal (Washington, D.C.), vol. 25, no. 3, Summer 1971, pp. 309-424.

Jakubiak, Henry E., and Dajami, M. Taher, "Oil Income and Financial Policies in Iran and Saudi Arabia" Finance & Development (Washington, D.C.), vol. 13, no. 4, December 1976, pp. 12-15.

Kadhim, Mihssen & Poulson, Barry, "Absorptive Capacity, Regional Cooperation, and Industrialization in the Arab States of the Gulf", Journal of Energy and Development (Colorado, Boulder), vol. 1, no. 2, Spring 1976, pp. 249-61.

Kapur, J.C., "Imported Technology and National Development", Oil Commentary (New Delhi), vol. IV, no. 23-24, 1 August 1967, pp. 2-5.

Keesing, Donald B., "Small Population as a Political Handicap to National Development", Political Science Quarterly (New York), vol. 74, 1969, pp. 50-60.

Kergan, J.L., "Social and Economic Changes in the Gulf Countries", Asian Affairs (London), vol. 62, Part III, October 1975, pp. 282-89.

Khamis, A., "Industrial Development and Skilled Labour Problems in Saudi Arabia", Arab Economist (Beirut), vol. VII, no. 74, March 1975, pp. 24-25.

Khawajika, Dr. Hasim, "Aspects of Saudi Arabia's Economic Growth", Journal of Gulf and Arabian Peninsula Studies (Kuwait), vol. 2, no. 5, January 1976, pp. 173-187.

Khudr, A.S., "Industrial Development of Saudi Arabia", Arab Economist (Beirut), vol. VI, no. 63, April 1974, p. 14.

Knauerhase, Ramon, "Saudi Arabia's Economy at the Beginning of the 1970s", Middle East Journal (Washington, D.C.), vol. 28, no. 2, Spring 1974, pp. 126-40.

Knauerhase, Ramon, "Saudi Arabia: A Brief History", Current History (Philadelphia), vol. 68, no. 402, February 1975, pp. 74-79, 82-83, 88.

Knaurhase, Ramon, "The Economic Development of Saudi Arabia: An Overview", Current History (Philadelphia), vol. 72, no. 423, January 1977, pp. 6-10, 32-34.

Khanerhase, Ramon, "The Oil Producing Middle East States", Current History (Philadelphia), vol. 76, no. 443, January 1979, pp. 9-13, 35-36.

_____, "Saudi Arabia's Foreign and Domestic Policy", Current History (Philadelphia), vol. 80, no. 462, January 1981.

Krapels, Edward N., "Oil and Security: Problems and Prospects of Importing Countries", Adelphi Papers (London), no. 136, Summer 1977.

"Kuwait", Middle East Year Book 1979 (London, 1979), pp. 132-37.

"Kuwait and the Middle East", MEED (Special Report), May 1982.

Lennon, Frank, "Saudi Arabia: Building Material Firms Spread, But Market Lacks confidence", MEED (London) vol. 22, no. 26, 30 June 1978, p. 12.

Levy, Walter J., "The Years that the Locust Hath Eaten Oil Policy and OPEC Development Prospects", Foreign Affairs (New York), vol. 57, no. 2, Winter 1978/79, pp. 287-305.

Lewis, Vivian, "Is Oil Money Spurring Real Development", Banker, (London), vol. 126, no. 606, August 1976, p. 883.

Little, Tom, "Saudi Arabia on the Move", Middle East International (London), no. 36, June 1974, p. 10.

Mabro, Robert, "Oil Revenues and the Cost of Social and Economic Development", MEES (Nicosia) vol. XXII, no. 23, 26 March 1979, pp. V-VI.

Mahmoud, Aly, "Petrochemicals: The Key to Arab Development", Arab Economist (Beirut), vol. X, no. 105, June 1978, pp. 22-29.

"Main Points of Saudi Arabia's Third Five-Year Telecommunications Plan" (Document), MEED (London), vol. 24, no. 48, 28 November 1980, p. 10.

"Making the Most of a Saudi Joint Venture", MEED (Special Report), March 1982, p. 81.

Mallakh, Ragaei El., "The Challenge of Affluence: Abu Dhabi", Middle East Journal (Washington, D.C.), vol. 24, no. 2, Spring 1970, pp. 135-46.

Mallakh, Ragaei El. and Kadhim, Mihssen, "Capital Surpluses and Deficits in the Arab Middle East: A Regional Perspective", International Journal Middle East Studies (London), vol. 8, no. 2, April 1977, pp. 183-93.

Malone, J.J.,"Saudi Arabia (Islam in Politics)", Muslim World (Connecticut), vol. 56, 1966, pp. 290-5.

Mansfield, David, "Uncertainty Hits Saudi Arabia's Forward Planning", Petroleum Economist (London), vol. XLV, no. 8, August 1978, pp. 333-35.

Maull, Hans, "Oil and Influence: The Oil Weapon Examined", Adelphi Papers (London), no. 117, Summer 1975, pp. 1-37.

McConahay, Mary Jo, "Saudi Reaffirm Faith in Yanbu Industrial Complex", MEED (London), vol. 23, no. 48, 30 November 1979, p. 5.

McDermott, Anthony, "Development Plan: Expenditure on New Plan May Exceed $ 300 bn., Strategic Digest (New Delhi), vol. X, no. 6, June 1980, pp. 337-40.

_____, "Heavy Industry: All Set for Rapid Transformation", Strategic Digest (New Delhi), vol. X, no. 6, June 1980, pp. 340-43.

McHale, T.R., "A Prospect for Saudi Arabia", International Affairs (London), vol. 56, no. 4, Autumn 80, pp. 622-47.

"The Middle East and the International System: Security and the Energy Crisis", - Part II (Papers from the IISS Sixteenth Annual Conference), Adelphi Papers (London), no. 115, Spring 1975, pp. 1-41.

Monroe, Elizabeth, "Arabia: From Incense to Oil", Asian Affairs (London), vol. 62, Part III, October 1975, pp. 253-63.

Munro, John, M. "Arabia's Need for Water", Middle East International (London), no. 83, May 1978, p. 26.

"New Regulations for Foreign Capital Investment Issued", MEES (Nicosia), vol. XXII, no. 17, 12 February 1979, pp. 12-13.

"New Saudi Plan Pegged at $ 268 b.", Arab Economist, (Beirut), vol. XII, no. 129, June 1980, pp. 27-28.

"Oil and Gas: Prospects for an Arab Synthetic Rubber Industry", Arab Economist (Beirut), vol. X, no. 105, June 1978, pp. 29-32.

"Oil and Social Change in the Middle East", Economist (London), vol. CLXXVI, no. 5836, 2 July 1955, p. 46.

"Oil Revenues And Expenditure in the Middle East", Middle East Year Book 1977 (London, 1977), pp. 69-75.

Oman, MEED (Special Report), 18 November 1980.

"Oman's First Plan", Middle East Year Book 1978 (London, 1978), pp. 85-89.

"OPEC's 1980 Revenues", Petroleum Economist (London), vol. XLVIII, no. 6, June 1981, p. 232.

"OPEC's Soaring Revenues", Petroleum Economist (London), vol. XLVII, no. 6, June 1980, p. 243.

Osayimwese, I.Z., "Model of Optimal Growth in an Oil-Surplus Economy", Indian Journal of Economics (Allahabad), vol. 6, no. 243, April 1981, pp. 387-404.

O'Sullivan, E., "Heavy Industry", MEED (Special Report), July 1980, pp. 22, 25.

O'Sullivan, Edmund. "Saudi Third Plan Exclusive Details", MEED (London), vol. 24, no. 45, 7 November 1980, pp. 5-6.

_____, "Saudis Modify Flow of Water Contracts", MEED (London), vol. 24, no. 10, 7 March 1980, pp. 6-7.

_____, "High Finance Favours the Big Firms" (on Saudi Industries), MEED (London), vol. 25, no. 12, 20 March 1981, pp. 38-39.

O'Sullivan, Edmund, "Yanbu: On course and Looking Good", MEED (London), vol. 25, no. 38, 18-24 September 1981, pp. 42-44.

_____, "Saudi Arabia: Strategic Oil Reservoirs Get Go-Ahead", MEED (London), vol. 25, no. 4, 30 October-5 November 1981, p. 3.

_____, "Saudi Budget Shifts Emphasis from Infrastructure to Human Resources", MEED (London), vol. 26, no. 18, 30 April -6 May 1982, pp. 16-18.

Othman, Osama A., "Saudi Arabia: An Unprecedented Growth of Wealth with an Unparalled Growth of Bureaucracy", International Review of Administrative Sciences (Brussels), vol. 45, no. 3, 1979, pp. 234-40.

Oweiss, Ibrahim M., "Petro Money: Problems and Prospects", Middle East International (London), no. 36, June 1974, p. 12.

_____, "Strategies for Arab Economic Development", Journal of Energy and Development (Colorado) vol. 3, no. 1, Autumn 1977, pp. 103-14.

Patai, Raphael, "The Dynamics of Westernization in the Middle East", Middle East Journal (Washington, D.C.), vol. 9, no. 1, Winter 1955, pp. 1-16.

Peck, Malcolm, "Saudi Arabia's Wealth: A Two-Edged Sword", New Middle East (London), no. 40, January 1972, pp. 5-7.

"Petromin: Why was it founded" Arab Economist, no. 53, June 1973, pp. 9-11.

"Qatar" Middle East Year Book 1979 (London, 1979), pp. 182-85.

"Qatar" MEED (Special Report), August 1981.

"Qatar : Industrial Potential Shows Promise", Arab Economist (Beirut), vol. XIII, no. 141, June 1981, pp. 23-26.

"Qatar : Industrialization Before the Oil Runs Out", Arab Economist (Beirut), vol. X, no. 110, November 1978, pp. 34-37.

Quinlan, Martin, "Petrochemical Markets for Middle East Producers", Petroleum Economist (London), vol. XLIV, no. 4, April 1977, pp. 125-27.

Rasheed, James, "Saudi Arabia: Major Projects Near Completion", Petroleum Economist (London), vol. XLVIII, no. 5, May 1981, pp. 189-90.

"Record Saudi Budget Maintains Development Drive", MEED (London), vol. 25, no. 19, 8-14 May 1981, p. 37.

Rentz, G., "Saudi Arabia: the Islamic Island", Journal of International Affairs (New York), vol. 19, pt. 1, 1965, pp. 115-25.

Rosen, S.J., and Shaked, H. "Arms and Saudi Connection", Commentary (New York), vol. 65, no. 6, June 1978, pp. 33-38.

Roulean, Eric, "Saudi Arabia: A Schizophrimc Society", Guardian Weekly (Manchester) vol. 124, 17 May 1981, p. 14.

Roulean, Eric, "Saudi Arabia: Pariahs in a Paradise for the "Haves'", - II Guardian Weekly (Manchester), vol. 124, 24 May 1981, p. 14.

Rugh, William, "Emergence of a New Middle Class in Saudi Arabia", Middle East Journal (Washington, D.C.), vol. 27, no. 1, Winter 1973, pp. 7-20.

Ryam, Peter, "Saudi Arabia: New Hopes of Gold Yield from Ancient Mines", MEED (London), vol. 22, no. 21, 26 May 1978, p. 6.

El-Saadi, Ahmed, "Aspects of Arab Cooperation and Coordination in the Energy Field", Contemporary Review (London), vol. 237, no. 1374, July 1980, pp. 13-18.

"SABIC Carries on Petrochemical Schemes", Arab Economist (Beirut) vol. XIII, no. 136, January 1981, p. 37.

"SAFCO's Output Running At Full Capacity", MEES (Nicosia), vol. XXIII, no. 7, 3 December 1979, p. 8.

Sanger, Richard H., "Ibn Saud's Program for Arabia", Middle East Journal (Washington, D.C.), vol. 1, no. 2, April 1947, pp. 180-90.

Sarkis, Nicolas, "Oil and Economic Development", Middle East Year Book 1979 (London, 1979), pp. 51-54.

"Saudi Arabia", Quarterly Economic Review (London), 1972.

"Saudi Arabia", Quarterly Economic Review (London), 1974.

"Saudi Arabia", Arab Economist (Special Report), June 1974.

"Saudi Arabia", MEED (Special Report), August 1978.

"Saudi Arabia" (Special Issue) Strategic Digest (New Delhi), vol. VIII, no. 6, June 1978.

"Saudi Arabia", Middle East Year Book, 1979 (London, 1979), pp. 188-193.

"Saudi Arabia", MEED (Special Report), June 1979.

"Saudi Arabia 1980", MEED (Special Report), July 1980.

"Saudi Arabia", Middle East Year Book 1980 (London, 1980), pp. 212-16.

"Saudi Arabia" (Special Issue), Strategic Digest (New Delhi), vol. X, no. 6, June 1980.

"Saudi Arabia", MEED (Special Report), July 1981.

"Saudi Arabia and US Pouring Millions Into Solar Research", MEED (London), vol. 22, no. 23, 9 June 1978, p. 9.

"Saudi Arabia: Business Laws and Regulations", Arab Economist (Beirut), no. 53, June 1973, p. 51.

"Saudi Arabia: Call for Regional Planning Among Gulf States", Arab Economist (Beirut), vol. XI, no. 115, April 1979, p. 33.

"Saudi Arabia: Communications Roads Lenthened", Arab Economist (Beirut), vol. XII, no. 125, February 1980, pp. 20-21.

"Saudi Arabia: Controlling the Tension between Change and Continuity", MEED (London), vol. 26, no. 10, 5-11 March 1982, pp. 89-90.

"Saudi Arabia Could Reduce Output Next Year", Arab Economist (Beirut) vol. XIII, no. 138, March 1981, pp. 33-34.

"Saudi Arabia: Desert Kingdom Holds Power Over World-wide Economies", Australian Foreign Affairs Record (Canberra), vol. 45, no. 12, December 1974, pp. 820-26.

"Saudi Arabia: Development Bonanza", Pakistan Economist (Karachi), no. 8, 25 February -3 March 1978, p. 11.

"Saudi Arabia: East-West Pipeline, a considerable Importance", Arab Economist (Beirut), vol. XIII, no. 138, March 1981, pp. 21-22.

"Saudi Arabia: Five Year Plan" (Summary of Statement made by Sheikh Hisham Nazer, the Minister of State and Chairman of CPO, at a Press Conference), Economic Review of the Arab World (Beirut) vol. IX, no. 7, July 1975, pp. 35-38.

"Saudi Arabia: Five Year Plan Creates Infrastructure for Industry", Arab Economist (Beirut), vol. X, no. 108, September 1978, pp. 13-14.

"Saudi Arabia: Education- A Top Priority", Arab Economist (Beirut), vol. X, no. 110, November 1978, pp. 27-30.

"Saudi Arabia: Excerpts from Order no. 1235 Regulating Situation of Foreign Workers", Arab Economist (Beirut), vol. X, no. 103, April 1978, p. 49.

"Saudi Arabia: Financial & Banking News" (Statistics on GDP, Balance of Payments Foreign Trade, Inflation and Oil Production, Revenues and Export), MEED (Nicosia), vol. XXII, No. 39, 16 July 1979, pp. 4-6, I-V.

"Saudi Arabia: Foreign Investment Code" -- (Document), MEED (London), vol. 23, no. 7, 16 February 1979, pp. 6-7.

"Saudi Arabia: Industrial Policy and Objectives", Africa Middle East Business Digest (Beirut), vol. 19, no. 244, March 1975, pp. 4-11.

"Saudi Arabia: Industrial Sector Lays Greater Stress on Planning", Arab Economist (Special Report) vol. XII, no. 129, June 1980, pp. 60-62.

"Saudi Arabia: Industrialization Main Policy Objective", Arab Economist (Beirut), vol. XIII, no. 145, October 1981, pp. 14-16.

"Saudi Arabia: Investment Opportunities", Arab Economist (Beirut), vol. V, no. 51, April 1973, pp. 44-45.

"Saudi Arabia: Joint Ventures Will be Favoured in Future Contracts", MEED (London), vol. 22, no. 15, 14 April 1978, p. III.

"Saudi Arabia: Major Projects Near Completion", Petroleum Economist (London), vol. XLVIII, no. 5, May 1981, p. 189.

"Saudi Arabia: Mineral Exploitation Close to Realization", Arab Economist (Beirut), vol. XII, no. 134, November 1980, pp. 20-21.

"Saudi Arabia: More Important to the non-oil Sector", Arab Economist (Beirut), vol. XIV, no. 148, January 1982, pp. 21-22.

"Saudi Arabia: Official Gazette No. 2699 of 4/11/1977, Excerpts from Order No. 1235, Regulating Situation of Foreign Workers", Arab Economist (Beirut), vol. X, no. 103, April 1978, p. 49.

"Saudi Arabia: Production at Peak Last Year", Petroleum Economist (London), vol. XLVIII, no. 11, November 1981, pp. 465-66.

"Saudi Arabia: Second Five-Year Plan Enters Its Third Year", Arab Economist (Beirut), vol. X, no. 102, March 1978, p. 28.

"Saudi Arabia, Second Five Year Plan", Economic Review of the Arab World (Beirut), vol. IX, no. 7, July 1975, p. 35.

"Saudi Arabia: Study Growth in Economy", Arab Economist (Beirut), vol. XII, no. 129, June 1980, pp. 24-27.

"Saudi Arabia: The Future for Petrochemicals", Petroleum Economist (London) vol. XLVIII, no. 10, October 1981, p. 445.

"Saudi Arabia: Slowdown in Development Eases Social Pressures", Arab Economist (Beirut), vol. XI, no. 117, June 1979, pp. 22-24.

"Saudi Arabia: Third Development Plan Gives Support to Oil Sector", Arab Economist (Beirut), vol. XIII, no. 139, April 1981, pp. 33-35.

"Saudi Arabia: Third Plan to Harness Inflation", Arab Economist (Beirut), vol. XIII, no. 142, July 1981, pp. 21-22, 27.

"Saudi Arabia: Uncertainty Hits Forward Planning", Arab Economist (Beirut), vol. X, no. 108, September 1978, pp. 34-36.

"Saudi Arabia Without Faisal: Oil, Economic, Political Continuum; No Comment, No Termination", Arab Economist (Beirut), vol. VII, no. 75, April 1975, pp. 6-12.

"Saudi Arabia's Economy 1979 slow Down", Middle East Monitor, (New Jersey) vol. 10, 1 April 1980, p. 3.

"Saudi Arabia's Industrial Future" (Interview with the Industry Minister), Middle East International (London), no. 85, July 1978, pp. 18-20.

"Saudi Arabia: Third Development Plan", MEED (Special Report), July 1980, p. 7.

"Saudi Arabia's Third National Development Plan" — (Document), vol. 24, no. 45, 7 November 1980, pp. 7-8, 10, 12, 54, 57-58.

"The Saudi Case in Defense of Petrochemical Projects", (Excerpts from the lecture of Dr. Ghazi Al Ghosaibi, The Saudi Minister of Industry and Electricity, delivered at Abdul Aziz University), Arab Economist, (Beirut), vol. X, no. 105, June 1978, pp. 22-27.

"Saudi Oil Production and Revenue Statistics", MEED (Nicosia), vol. XXII, no. 47, 10 September 1979, pp. 3-4.

"A Saudi White Elephant?", New Internationalist (Oxon), no. 61, March 1978, pp. 21-2.

Sayigh, Yusif A., "Problems and Prospects of Development in the Arabian Peninsula", International Journal of Middle East Studies (London), vol. 2, no. 2, April 1971, pp. 40-58.

_____, "Social Cost of Oil Revenues", MEED (Nicosia), vol. XXII, no. 23, 26 March 1979, pp. IV-V.

"The Second Saudi Arabian Development Plan", Middle East Year Book 1977, (London, 1977), pp. 76, 79-80.

Shamma, Samir and Morrison, William D., "Saudi Arabia's Investment Code to Encourage Private Sector", MEED (London), vol. 23, no. 7, 16 February 1979, pp. 6-7.

Sharshar, A.M., "Trade Policy and Economic Development in Saudi Arabia", Social Science Journal (Seoul), no. 13, April 1978, pp. 50-54.

Shirreff, David, "Saudi Arabia : Hejaz Resurrection Signals start of Railway Revived", MEED (London), vol. 22, no. 38, 22 September 1978, pp. 8-9.

_____, "Trained Saudis Manpower is Main Aim of Royal Commission Projects", MEED (London), vol. 23, no. 6, 9 February 1979, p. 11.

_____, "Overcoming Difficulties in the Saudis Market", MEED (London), vol. 23, no. 49, 7 December 1979, p. 3.

"SIDF (Saudi Industrial Development Fund) wants to script a New Industrial Scenarie", MEED (London), vol. 22, no. 23, 9 June 1978, pp. 14, 16.

Smith, Pamela, "Industrialization in the Middle East", Middle East Year Book 1979 (London, 1979), pp. 54-57.

Smith, P.A., "Industrialization and Development", Middle East Year Book 1980 (London, 1980), pp. 66-68.

"Soaring Use of Oil Products in Saudi Arabia", Arab Economist (Beirut), vol. XIII, no. 141, June 1981, pp. 37-38.

"A Survey of Saudi Arabia", Economist (London), vol. 282, no. 7224, 13-19 February 1982, pp. Survey 1-34.

Szyliowicz, Joseph S., "Science, Technology, and Development in the Arab World", Middle East Review (New York), vol. X, no. 3, Spring 1978, pp. 24-29.

Szyliowics, Joseph S., "The Prospects for Scientific and Technological Development in Saudi Arabia", International Journal of Middle East Studies (London), vol. 10, no. 3, August 1979, pp. 355-72.

Tarbush, Susannah, "Saudi Arabia: Industrialization Problems", Arab Report (London), no. 7, 25 April 1979, pp. 8-9.

"Third Saudi Plan should stress Development of Human Capital Rather than Infrastructure", say Experts, MEES (Nicosia), vol. XXIII, no. 15, 28 January 1980, p. 5.

Trojanovic, Radmilo, "Development of Saudi Arabia: Oil Boom, Domestic Development, and International Position", Review of International Affairs (Belgrade), vol. 27, no. 621, 20 February 1976, pp. 26-28.

Truell, Peter, "Oil Producers Learn to Live with the Glut", MEED (London), vol. 26, no. 12, 19 March 1982, pp. 14-15.

Turner, Louis and Bedore, James, "The Industrialization of the Middle Eastern Oil Producers", World Today (London), vol. 33, no. 9, September 1977, pp. 326-34.

Turner, L and Bedore, J., "The Trade Politics of Middle Eastern Industrialization", ~~Foreign Affairs~~ Foreign Affairs (New York), vol. 57, no. 2, Winter 1978, pp. 306-22.

Turner, Louis and Bedore, James, "Saudi Arabia: The Power of the Purse Strings", International Affairs (London), vol. 54, no. 3, July 1978, pp. 405-20.

"United Arab Emirates," Middle East Year Book 1979 (London, 1979), pp. 222-25.

Vielvoye, Roger and Auldridge, Larry, "Global Oil Production Digs 4% During 1980", Oil and Gas Journal (Tulsa, Okla), vol. 79, no. 10, 9 March 1981, pp. 43-46.

Whelan, John, "Saudi Arabia: Yanbu Complex Project offers Little for Local Business", MEED (London), vol. 22, no. 9, 3 March 1978, pp. 7-8.

Whelan, John, "Saudis Are Encouraged to take a More Active Role in Joint Ventures", MEED (London), vol. 23, no. 1, 5 January 1979, pp. 3-4.

Witton, Peter, "Sharjah's Economy Poised on a Spring Board", MEED, (London), vol. 26, no. 29, 16-22 July 1982, pp. 22-25.

World Bank Staff Working Paper, Development Problems of Mineral Exporting Countries (Washington, D.C.), no. 354, August 1979.

"Yamani: 'Oil war' in the eighties if no energy substitute is discovered", Arab Economist (Beirut), vol. X, no. 107, August 1978, pp. 34-35.

Yamani, S.A.Z., "The Outlook for Energy- The Year 2000", MEES (Nicosia), vol. XXII, no. 36, 25 June 1979, pp. 1-6.

"Yamani Predicts Small (Oil) Price Rises", Arab Economist (Beirut), vol. XIII, no. 146, November 1981, p. 39.

Yamani, Ahmad Zaki, "Oil: Toward a New Producer Consumer Relationship", World Today (London), vol. 30, no. 11, November 1974, pp. 479-86.

Zahlan, A.B., "The Arab Brain Drain", United Nations: Population Bulletin of ECWA (Beirut), no. 16, June 1979, pp. 19-38.

El-Zaim, Issam, "EEC Retards Development of Oil Producing Arab Countries", New Perspectives (Helsinki), vol. 10, no. 5, 1980, pp. 15-16.

Zein, Y.T.El, "The Economies of the Gulf: A Look at the Future", Arab Economist (Beirut), vol. VII, no. 73, February 1975, pp. 14-17.

Newspapers

Dawn (Karachi)

Economic Times (New Delhi)

Emirates News (Abu Dhabi)

Financial Times (London)

Gulf News (Dubai)

International Herald Tribune (Hong Kong)

Khaleej Times (Dubai)

Kuwait Times

Pakistan Times (Lahore)

Saudi Gazette (Jeddah)

The Times (London)

Times of India (New Delhi).