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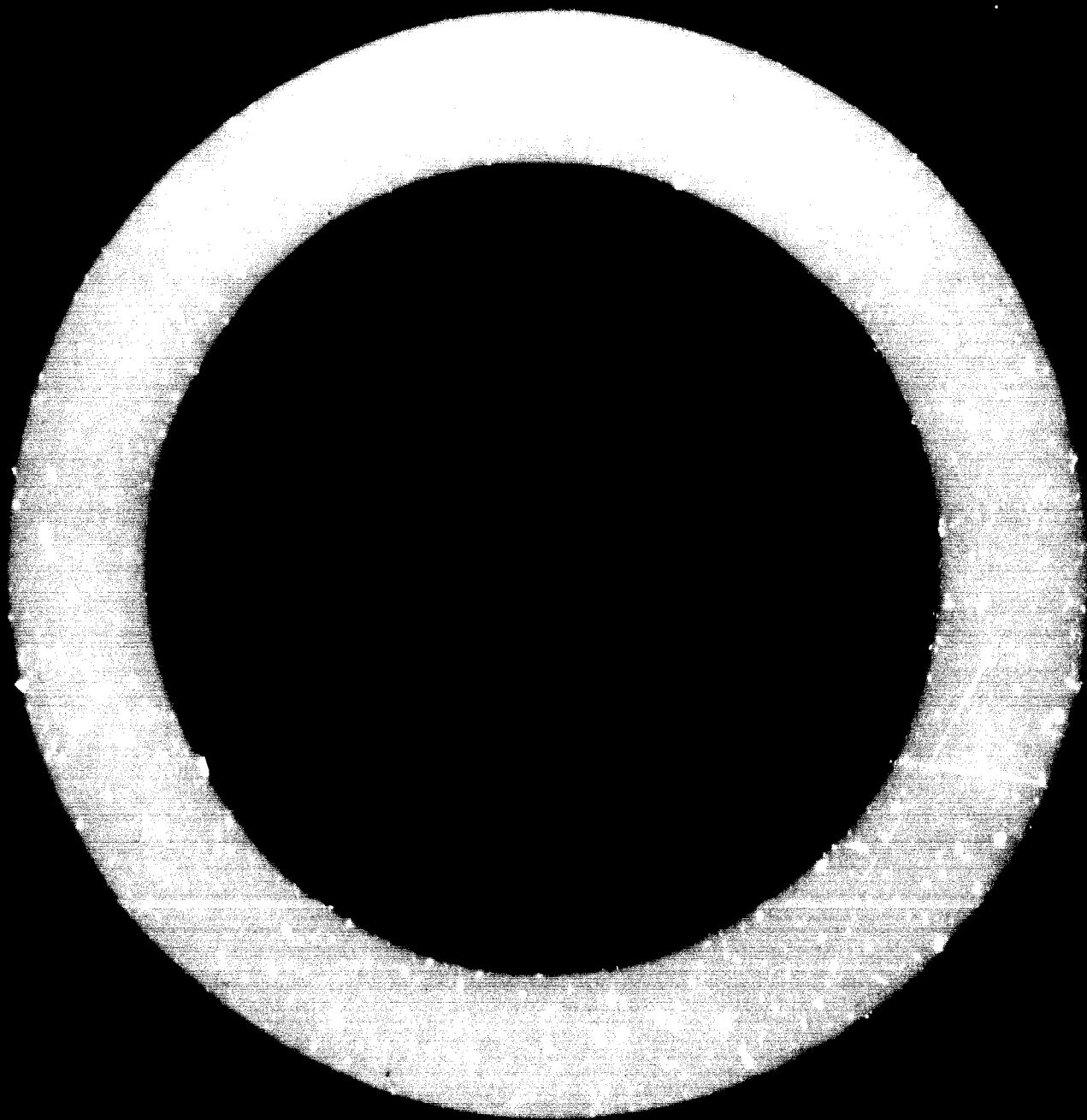
INDUSTRIAL PLANNING IN SAUDI ARABIA:
AN INTRODUCTORY REVIEW ^{1/}

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I N T R O D U C T I O N

Saudi Arabia is on the verge of economic planning. The Central Planning Organization is preparing the first five years plan for the Saudi Arabian economy. In September 1970, the Council of Ministers will consider the plan for approval. Thus during the past years, there has been no national economic plan, and, therefore, no industrial planning. The government, however, has implemented certain policy measures to promote industrial development. It has also created an industrial development agency, the General Petroleum and Mineral Organization (Petromin). This agency has prepared an industrialisation programme and executed part of this programme.

The present study is a comprehensive account of all major developments which have taken place in the industrial sector during the last ten years up to the present time. Special attention is paid to the institutional setting and the mechanism of preparing the present industrial plan.

The study, as will be seen, has two dimensions, namely micro and macro. The micro coverage is rather limited, because of a set of difficulties which were particularly hard to overcome in the limited time available for the preparation of this study.

J. INDUSTRY IN SAUDI ARABIA

A. Present status of industry

1. Number of operating industrial projects

1. Available information at the time of writing this report indicates that there are 289 operating industrial projects in Saudi Arabia.^{1/} Because industrial registration is not obligatory, there are probably other operating industrial projects which are not included in this figure.

2. The total number of industrial establishments (employing one or more workers) in Saudi Arabia is estimated to be around 9,100, employing about 28,200 workers.

3. The 289 figure is exclusive of the following:

- a. operating oil companies and their refineries (three companies, with one refinery);
- b. a large number of tile and cement block producers, scattered in most cities and towns, even though some of them might be using mechanical devices. The number of these producers exceeds five hundred;
- c. workshops, even if they perform manufacturing activities;
- d. sawmills, planing and other wood mills;
- e. automatic bakeries and automatic laundries; and,
- f. mining industries, except cement (hydraulic) and gypsum.

4. The 289 industrial projects come under 30 industrial activities determined according to ISIC (3 digits). Table 1 gives a detailed picture of the distribution of those projects according to the ISIC numbers and regions.^{2/}

^{1/} For this study, an industrial project is an establishment where materials are converted from one form to another, partially or totally, using mechanically operated machines and equipments and employing 3 or more workers.

^{2/} The Kingdom is divided into five main provinces: the Central Province, the Western Province, the Eastern Province, the Southern Province, and the Northern Province. Except for the industrial activity ISIC 511, no industrial projects are found in the Northern and Southern Provinces at the present time.

Table 1. Distribution of 289 industrial projects in Saudi Arabia, according to their ISIC numbers and regional location

| ISIC number | Name of industrial activity | Number of industrial projects in each province | | | | Rank |
|-------------|---|--|---------|---------|-------|------|
| | | Central | Eastern | Western | Total | |
| 202 | Dairy products. | 2 | 1 | 2 | 5 | 10 |
| 208 | Cocoa, chocolate and sugar confectionery. | 3 | 1 | 10 | 14 | 7 |
| 209 | Miscellaneous food products. | - | 5 | 13 | 18 | 6 |
| 214 | Soft drinks and carbonated water. | 2 | 2 | 8 | 12 | 8 |
| 231 | Spinning, weaving, and finishing textiles. | - | 1 | 2 | 3 | 12 |
| 243 | Wearing apparel, except footwear. | 1 | 2 | 1 | 4 | 11 |
| 251 | Sawmills, planing and other wood mills. ^{a/} | - | - | 1 | 1 | 14 |
| 260 | Furniture and fixtures. | 8 | 2 | 20 | 30 | 3 |
| 272 | Articles of pulp paper and paperboard. | 1 | 1 | 2 | 5 | 10 |
| 280 | Printing, publishing and allied industries. | 7 | 7 | 13 | 27 | 4 |
| 291 | Tanneries and leather finishing plants. | - | - | 1 | 1 | 14 |
| 300 | Rubber products. | - | - | 2 | 2 | 13 |
| 311 | Basic industrial chemicals, including fertilizers. | - | 3 | 1 | 4 | 11 |
| 319 | Miscellaneous chemical products. | - | - | 1 | 1 | 14 |
| 321 | Petroleum refineries. | - | - | 1 | 1 | 14 |

^{a/} Sawmills, planing and other wood mills are not included. Only one industrial project in this classification is included since it is organized as a factory producing for the market rather than on a job-by-job basis. This factory produces shutter windows and doors.

Table 1. (continued)

| ISIC number | Name of industrial activity | Number of industrial projects in each province | | | | Total Lan ^b |
|----------------|---|---|-----------|------------|------------------|---------------------------|
| | | Central | Eastern | Western | Total | |
| 331 | Structural clay products. | 5 | 12 | 28 | 45 | 1 |
| 334 | Cement (hydraulic). | 1 | 1 | 1 | 3 | 12 |
| 339 | Non-metallic mineral products, not elsewhere classified. | 5 | 6 | 3 | 14 | 7 |
| 341 | Iron and steel basic industries. | - | - | 2 | 2 | 13 |
| 342 | Non-ferrous metal basic industries. | 2 | - | - | 2 | 13 |
| 350 | Metal products, except machinery and transport equipment. | 8 | - | 17 | 25 | 5 |
| 360 | Machinery, except electrical machinery. | 2 | - | 2 | 4 | 11 |
| 381 | Ship building and repairing | - | - | 2 | 2 | 13 |
| 383 | Motor vehicles. | 2 | - | 1 | 3 | 12 |
| 394 | Jewellery and related articles. | - | - | 1 | 1 | 14 |
| 399 | Manufacturing industries, not elsewhere classified. | 3 | 1 | 4 | 8 | 9 |
| 400 | Construction. | 1 | 1 | - | 2 | 13 |
| 511 | Electric light and power. | 1 | 2 | 3 | 41 ^{b/} | 2 |
| 512 | Gas manufacture and distribution. | 1 | 1 | - | 2 | 13 |
| 521 | Water supply (purification). | 3 | 2 | 2 | 5 | 10 |
| Total | | 58 | 52 | 144 | 269 | |

^{b/} This total includes 35 small plants scattered in villages and towns throughout the five provinces.

5. It can be seen from Table 1 that as far as the number of establishments

... of the
... ment-
... of
... and
... of the total
...
... 27 establishments,
... of metal
... and transport equipment" (ISIC 350), which consists
... percent of the total number of establish-

... of the above table gives the rank of each industry on the
... of establishments.

6. Regional distribution of industrial projects, aside from the 35 electric light and power houses found in villages and small towns throughout the country, indicates that the Western region ranks first, having 50 percent of the total number of establishments, coming under 21 different industrial activities. The Central Province ranks second with 20 percent to the total number, classified in 19 industrial activities. The Zambezi Province comes third, having 16 percent of the total number of establishments, falling in 18 industrial classifications. The remaining 7 percent represents Electric Light and Power Plants scattered in villages and small towns in the five provinces of the Kingdom.

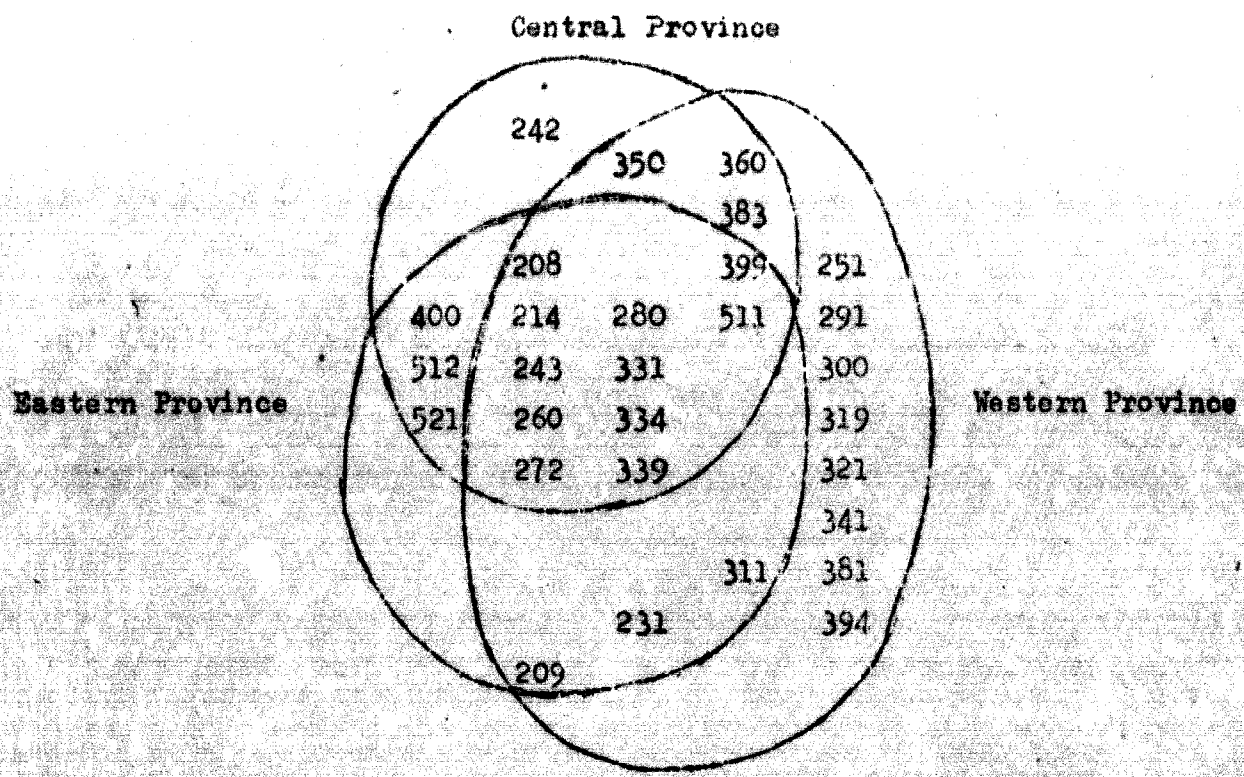
7. The three provinces all have several industries. Some industries, however, are found in only one province while other industries are found in two provinces. Figure 1 illustrates the exclusion and inclusion of industries in each of the provinces of the Kingdom.

8. It can be seen from the following figure that industries classified under ISIC 751, 291, 319, 341, 394 and 321^{1/2} are found exclusively in the

^{1/2} All refineries belonging to ZAMCO are excluded from consideration in this paper.

Western Province. Industry classified under ISIC 350 is located in the Central Province only. The Central and Eastern Provinces share in industries under ISIC 400 and 512, the Central and Western Provinces in ISIC 350, 380 and 383, and the Western and Eastern Provinces in ISIC 209, 231 and 311.

Figure 1. Distribution of industries in the three provinces



2. Paid-up capital and estimated invested capital

9. The total paid-up capital of all the 289 industrial projects is approximately SR 820 million.^{1/} Details of total invested capital are available for only a few of the 289 projects. It is estimated, however, that total invested capital in all of these projects is approximately SR 1,120 million.

10. If the paid-up capital of each industry is considered as a measure of its relative importance, it will be found that ISIC 511 ranks first, with a

^{1/} 1 U.S. Dollar = SR 4.5

total paid-up capital of SR 320 million, representing 36.5 percent of the grand total. Second place is occupied by ISIC 311 with a total paid-up capital of SR 102 or 12.4 percent of the grand total. ISIC 334 comes third, with a total paid-up capital of SR 96.2 million or 11.6 percent of the total. Fourth place is occupied by ISIC 321, with a paid-up capital of SR 70 million, or 8.5 percent of the total. ISIC 521 ranks fifth, with a paid-up capital of SR 61 million, representing 7.4 percent of the total paid-up capital of all industries. Table 2 gives the ranking of the ten largest industries, arranged according to the paid-up capital of each.

Table 2. Ranking of the ten industries having the largest paid-up capital (excluding ARAMCO refineries)

| ISIC number | Name of industrial activities | Paid-up capital (SR million) | Rank |
|-------------|--|------------------------------|------|
| 311 | Electric light and power. | 320.0 | 1 |
| 311 | Basic industrial chemicals, including fertilizers. | 102.0 | 2 |
| 334 | Cement. | 96.0 | 3 |
| 321 | Petroleum refineries. | 70.0 | 4 |
| 521 | Water supply (purification). | 61.0 | 5 |
| 209 | Miscellaneous food products. | 32.0 | 6 |
| 342 | Iron and steel basic industries. | 31.0 | 7 |
| 214 | Soft drinks and carbonated water. | 18.7 | 8 |
| 331 | Structural clay products. | 15.7 | 9 |
| 200 | Printing, publishing and allied industries. | 15.5 | 10 |

11. Province-wise, the Western Province comes first with a total paid-up capital of approximately SR 340 million, or 40 percent of the total paid-up

paid-up capital of SR 750,000 or less; while each project in the remaining 25 percent has a paid-up capital of more than SR 750,000. In addition, wide dispersion exists among the 30 industrial activities and within each of them with regard to invested paid-up capital. This wide dispersion is also found among the 289 industrial projects taken together. The paid-up capital of the ISIC which ranks first (511) is 2100 times that of the ISIC which ranks last (354). On the other hand, with the exception of a few of the industrial activities, in most industries there is wide variation in the paid-up capital of the different projects within them; in several cases, the largest project in the classification has a paid-up capital 1,200 times larger than that of the smallest one. A much wider dispersion is revealed when one looks at all the 289 projects; the paid-up capital of the largest project is about 12,500 times that of the smallest.

3. Legal Status

13. Of the 289 industrial projects, 17 projects representing almost 6 percent of the total number, and 11.5 percent of the total paid-up capital, are owned by the Government. Ten of these 17 projects are in ISIC 511. These are small projects established by the Ministry of Interior (the Under-Secretary of the Municipal Affairs) and will be transferred to the private sector. Four of the remaining 7 projects are of large size, both in capital and employment. Three of these 4 projects are in ISIC 521, established by the Ministry of Agriculture and Water Resources; the fourth project is in ISIC 341 established by the General Petroleum and Mineral Organization (Petromin). One of the other three is a date packing plant; the other two are of ISIC 521 (relatively small desalination plants).

14. The number of projects involving public-private partnerships. They represent 6.7 percent of the total number of projects and 1 percent of the total paid-up capital. One of the two projects falls in ISIC 291 and the second is an ISIC 347 project.

15. Of the 272 projects, about 40 percent are sole proprietorships, about 20 percent are joint liability partnerships; 15 percent are limited liability partnerships, and the remaining 5 percent are joint stock companies, including the mixed public-private ventures.

4. Employment

16. The 30 industrial activities together employ 10,200 workers (skilled and non-skilled) in the 289 projects. Twenty five percent of these workers are non-Saudis.

17. ISIC 511 employs 1,700 workers, or 16.7 percent of the total. As such, it ranks first. ISIC 209 employs 1,130 workers, or 11 percent of the total, and occupies second place. Third place is occupied by ISIC 334, which employs 980 workers, or 9.6 percent of the total. Fourth place is occupied by ISIC 331, and employs 945 workers, or 9.3 percent of the total employed workers. ISIC 214 which ranks fifth, employs 850 workers, or 8.4 percent of the total. Table 3 ranks the industrial activities (not including oil extraction) which employ the most workers.

18. About 50 percent of the total employed workers of these 289 projects is in the Western Province; 30 percent is in the Eastern Province and 20 percent is in the Central Province.

19. The number of projects employing 50 workers or less is 244 or 84 percent of the total. The number of those employing more than 50 and less than 100 workers is 25, or 9 percent of the total. Each of the remaining 20 projects employs 100 workers or more; they represent 7 percent of the total number of projects.

20. The percentage of non-Saudi workers to the total number employed varies from one industrial activity to another. It is highest in ISIC 291 where it reaches 78 percent, followed by ISIC 243 with 61.5 percent of non-Saudi workers.

Table 3. Ranking of the ten largest employing industrial activities (exclusive of oil extraction)

| ISIC number | Name of industrial activities | Number of workers | Rank |
|-------------|--|-------------------|------|
| 511 | Electric light and power. | 1700 | 1 |
| 209 | Miscellaneous food products. | 1130 | 2 |
| 334 | Cement (hydraulic). | 980 | 3 |
| 331 | Structural clay products. | 94 | 4 |
| 214 | Soft drinks and carbonated water. | 860 | 5 |
| 260 | Furniture and fixtures. | 625 | 6 |
| 280 | Printing, publishing and allied industries. | 615 | 7 |
| 350 | Metal products. | 445 | 8 |
| 311 | Basic industrial chemicals, including fertilizers. | 440 | 9 |
| 208 | Manufacture of cocoa, chocolate and sugar confectionery. | 210 | 10 |

5. Capital-output and labour-output ratios

21. In 1965, estimates of the C/O and L/O ratios for selected industrial activities in Saudi Arabia were made.^{1/}

^{1/} E.S. Penn, To accelerate The industrial Growth in Saudi Arabia, Riyadh, June 1965.

Table 1. Capital-output ratios of industrial establishments in Saudi Arabia.

| ISIC | 203 (Date packing only) | 214 | 200 | 331 | 334 | 512 |
|---------------------------|----------------------------|-------|-------|-------|-------|-------|
| average C/O ^{b/} | 2.900 | 1.900 | 0.794 | 0.677 | 3.310 | 3.250 |
| average L/O ^{c/} | n.a. | 0.078 | 0.260 | 0.546 | 0.170 | n.a. |

- a/ Each of the ratio is an average for the whole ISIC over seven or eight years, ending in 1964 except for ISIC 512 where the last year is 1963.
- b/ The capital-output ratio for the Saudi Industrial Sectors was estimated to be 1.75.
- c/ L/O ratio equals the total wage bill paid by the industry during the year divided by the value of the industry's production during the same year.

22. Although the labor-output ratios, as estimated, are useful indicators of the performance of the Saudi industries, the capital-output ratios are of no analytical value. The capital used to calculate these ratios is the paid-up capital and not the total invested capital in each industry. Even if it were possible to estimate the capital output ratios taking into consideration the total invested capital, the analytical implications of these ratios remain questionable since the majority of industrial projects in Saudi Arabia operate far below their potential capacity.

23. In a survey conducted in 1967 by the Industrial Studies and Development Centre covering 39 industrial establishments in the city of Riyadh, the (paid-up) capital-output ratios were found as follows:

Table 5. Capital output ratios for selected industries as estimated by the CPPO in 1967

| ISIC | 206 | 260 | 331 | 334 | 339 | 341 | 350 |
|---------------|------|------|------|------|------|------|------|
| Average C/O r | 0.21 | 0.22 | 0.19 | 5.00 | 0.15 | 0.70 | 0.09 |

Source: Survey of industrial establishments in Saudi Arabia, Volume I, Riyadh p.60.

24. The above mentioned survey has included estimates of two useful indicators. These are machinery and equipment per person engaged and production per person.

Table 6. Machinery and equipment per person and output per person in selected industries in Riyadh 1967

(in thousands of Saudi Riyals)

| ISIC | 202 | 208 | 214 | 260 | 280 | 331 | 334 | 339 | 341 | 342 | 350 | 360 | 383 | 399 |
|-----------------------|------|-----|------|-----|------|-----|-----|-----|-----|------|-----|------|------|------|
| M & E per person | 33 | 6 | 16 | 4 | 12 | 2 | 85 | 50 | 2 | 18 | 4 | 12 | 6 | 62 |
| Production per person | n.a. | 22 | n.a. | 30 | n.a. | 11 | 26 | 30 | 6 | n.a. | 28 | n.a. | n.a. | n.a. |

Source: Survey [ibid], pp. 9 and 60.

6. Capacity utilization

25. In a study covering 38 selected major industrial projects, considered to represent the manufacturing sector, the Central Planning Organisation

estimated in 1969 the capacity utilization in a number of manufacturing projects.^{1/} The study revealed a wide variation in the rate of capacity utilization among 35 projects.

26. The lowest utilization was in ISIC 29 "The manufacture of leather finishing plants", where it was estimated at 15.7 percent and the highest was in ISIC 339 "The manufacture of non-metallic mineral products, not elsewhere classified", where utilization was estimated at 89.4 percent. The following table gives the distribution of industries according to the rate of capacity utilization:

Table 7. Distribution of industries by levels of capacity utilization, 1387

| Industries | Total ^{1/} | Percent of capacity utilization | | | | |
|-----------------------------|---------------------|---------------------------------|--------|-------|-------|--------|
| | | 0-20 | 20-40 | 40-60 | 60-80 | 80-100 |
| 1. Food processing. | 5(9) | | 2(3) | 1(2) | 1(1) | 1(3) |
| 2. Building materials, etc. | 7(12) | 1(2) | 3(3) | 1(3) | | 2(4) |
| 3. Chemicals & synthetics. | 2(3) | | 1(1) | 1(2) | | |
| 4. Metal products. | 2(2) | | 2(2) | | | |
| 5. Industrial gases. | 3(8) | | 2(7) | | 1(1) | |
| 6. Unclassified. | 4(4) | 1(1) | 2(2) | | 1(1) | |
| | 23(38) | 2(3) | 12(18) | 3(7) | 3(3) | 3(7) |

Source: S.R. Mohnot, Ibid.

^{1/} The figures given in parentheses represent the number of units in each category.

^{1/} See the paper prepared by S.R. Mohnot, U.N. Industrial Economist, entitled: Capacity Utilization in the Manufacturing Industries of Saudi Arabia, which was presented to a seminar on Evaluation of Economic and Commercial Performance of Industrial Enterprises, sponsored by the Industrial Studies and Development Centre, Riyadh 18-19 October, 1969. The information presented in this study is based on this paper.

... the ... of ... and in ...

Table 1. Rate of ... of Jeddah, Riyadh (1955) and Damman (1966)

| ISIC | 202 | 208 | 214 | 231 | 260 | 280 | 319 | 331 | 334 | 339 | 350 | 512 | 521 |
|----------------------|---------|---------|---------|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Jeddah ^{b/} | 50 (20) | 47 (60) | (50-50) | 60 | 33 (70-80) | 80 | - | 60 | 67 | - | - | - | - |
| Riyadh | 65 | 80 | 50 | - | 60 | 60 | - | 63 | - | 50 | - | 25 | - |
| Dammam | - | - | 57 | - | - | 50 | - | 68 | - | - | 40 | 25 | 75 |

- a/ These estimates are based on one shift of eight hours operation.
- b/ The figures shown in brackets represent average utilization of capacity.

B. Past development of the industrial sector

28. In a study prepared in 1965, the average annual rate of growth of the Saudi Industrial Sector was estimated at 5.8 percent.^{2/} The study took into consideration six industries which were treated as a sample. The methodology used was that of the Harrod-Domar, i.e.

$$dy = \frac{s}{k}$$

1/ A.C.E., Industrial Estates in Jeddah and Riyadh: Feasibility Report, Feb. 1955; and Industrial Estate at Dammam: Feasibility Report, June 1966.

2/ E.S. Penn, Ibid.

where dy is the rate of growth of national income, s is the rate of saving and k is the capital-output ratio. In any case, the capital-output ratio was underestimated due to the fact that it was based on the paid-up capital rather than the total invested capital. The saving rate represented the rate of capital formation for the Kingdom in 1960 (1959) and was estimated to be 13.8 percent. This saving rate, i.e., the aggregate capital formation rate, need not be the same as that of the industrial sector. Thus, the estimated rate of growth of the Saudi Industrial Sector may not have reflected the actual developments which took place in the industrial sector during that period.

29. In its 1967-1968 report, the Saudi Arabian Monetary Agency gave a provisional estimate of the gross national product by industrial origin (at current factor cost). According to these estimates, the average annual rate of growth of the industrial sector during the five years ending 1386/88 A.H. (roughly 1966/67) is 10 percent. A more recent estimate put the annual rate of growth of the industrial sector (at constant prices) at 6.6 percent for the same period.

30. Looking at the annual increase in the total number of establishments as an indicator of growth in the industrial sector, a general idea could be obtained. Table 9 gives annual growth rates of industrial projects between 1959 and 1968.

Table 9. Annual growth of industrial projects in Saudi Arabia

(Total number of projects in 1959 = 100 percent)

| Year | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 |
|----------------|------|------|------|------|------|------|------|------|------|
| Rate of growth | 9.0 | 10.8 | 13.5 | 8.6 | 7.9 | 8.0 | 12.0 | 9.0 | 10.0 |

4. Institutional setting

31. There is a very close relationship between the concept of Saudi Arabia having a deep faith in the Islamic system of justice and the Islamic system. This faith is not unqualified, however. There are three guidelines:^{1/}

- a) individual rights cannot be exercised except for the realization of the purposes for which those rights were instituted;
- b) The exercise of individual rights shall not result in injury to others; and,
- c) individual rights can be exercised for deriving benefits but not for harming others.

32. These guidelines set the boundaries within which individuals can operate. The role of the Saudi Arabian government in industrial development is also determined in accordance with these three guidelines. Thus the objective of its positive, but limited, participation in industrial development is to complement, rather than to compete with, or replace, the private sector.

33. It could be postulated, through deduction, that the government role in industrial development has two approaches, the indirect and the direct approaches:

- a) through the first approach, the government provides guidance, direction, incentives and encouragement. In doing this, the government resorts to a set of policy instruments. These instruments will be enumerated later on in this study; and,
- b) in its direct approach, the government participates positively, in industrial development. Here, the government takes the initiative to establish industrial projects with or without private participation. This approach is the outcome of necessity rather than ideology.

^{1/} This view was expressed by the Saudi Arabian Minister of Petroleum and Mineral Resources, H.E. Shaikh A.Z. Yamani in his paper "Foreign Investment Atmosphere in Saudi Arabia", delivered at the Symposium of International and Comparative Law Foundation, Dallas, Texas, June 1966. This conviction is also stated from time to time by officials of the Ministry of Commerce and Industry.

34. The indirect approach of the Saudi Government, as far as industrial development is concerned, is represented in the Ministry of Commerce and Industry and the organizations attached to it. The direct approach, on the other hand, is represented in the General Petroleum and Mineral Organisation (Petromin). Recently, the Ministry of Agriculture and Water Resources participated, in a limited area, in enhancing this second approach. The Ministry of Interior (The Municipalities Affair) had a minor role in the past.

1. The Indirect approach

35. Indirect promotion of industrial development in Saudi Arabia is accomplished by the Ministry of Commerce and Industry and the organization attached to it, the Industrial Studies and Development Centre. The detailed functions of each of these institutions are not yet clearly defined; considerable overlapping exists at the present time.

The Ministry of Commerce and Industry

36. There is no specialized ministry for industry in Saudi Arabia; Commerce and Industry are combined under one ministry - The Ministry of Commerce and Industry, established in 1953. The Directorate-General of Industry and Electricity in the Ministry has executive as well as supervisory functions. It is divided into two sections whose technical work is described below:

a) The Industry section

- i) to study applications for the establishment of manufacturing industrial projects and submit recommendations thereon to the Minister of Commerce and Industry to enable him to make appropriate decisions regarding the granting of licenses;
- ii) to follow up the implementation of newly licensed projects according to the studies submitted to the Director-General;
- iii) to furnish economic and technical information to prospective industrial investors;
- iv) to assist industrial projects in solving their economic and technical problems, including the commissioning of consultants for undertaking similar studies;
- v) to make recommendations to the Minister regarding protection and other entitlements to specific industries governed by existing regulations;

- vi) to promote the development of inter-industry linkages;
- vii) to promote the establishment of projects whose feasibility studies are conducted by consultants commissioned by the Ministry;
- viii) to study applications for exemptions from duties on raw materials and capital goods, and to ensure that these imports are used for the purposes for which they were exempted;
- ix) to screen requests for the acquisition of lots in the Industrial Estates, now under construction. In cities where no industrial estates exist, to recommend the allotment of land in areas assigned by municipalities; and,
- x) to supervise the implementation and progress of industrial projects established in industrial estates.

b) The Electricity section

- i) to evaluate applications to establish electricity projects to ensure their suitability and to make recommendations on the granting of concessions for the establishment of electric companies;
- ii) to evaluate studies submitted by institutions and/or individuals who plan to establish electricity projects and to advise them on the required specifications;
- iii) to supervise existing electricity companies and to assist them upon request, particularly when they plan expansions;
- iv) to study technical and financial problems facing electricity companies and to make necessary recommendations;
- v) to consider grievances raised by the public against electricity companies, and to act as an intermediary between the two sides in order to settle such problems;
- vi) to make cost estimates of electric connections, upon request, to both government agencies and the public;
- vii) to provide other institutions with technical consultations upon request;
- viii) to prepare by-laws which organize the relationships between consumers and companies;
- ix) to conduct, directly or through consultants, studies on relevant subjects, such as accounting systems, specifications, capital costs of electrification of villages and towns, and the like; and,

...the Centre shall be authorized to receive and accept under conditions to be determined by the Council of Ministers, such as the Government and other agencies.

The Industrial Studies and Research Centre

37. The Centre was established by a Royal Decree in March 1967, in agreement with the United Nations Special Fund. The objectives and functions of the Centre are stated in Article 2 of its Statute.

38. Objectives and functions of the centre

The purpose of establishing the Centre is to create an organization which shall carry out research and studies relating to industrial development affairs, submit the necessary recommendations in this respect and provide technical assistance to existing and prospective industries. In order to attain these objectives, the Centre undertakes the following functions:

- a) to carry out research and studies necessary for preparing sound industrial policies and programmes, to submit to the authorities concerned suggestions and recommendations in this respect, and to harmonise cooperation amongst various authorities and other non-governmental parties concerned with industry;
- b) to conduct either directly or through other parties research and studies relating to the establishment of new industries, including feasibility of industrial projects, their priority, methods of financing, assistance and privileges which the Government may extend to them, and submit necessary recommendations in this respect to the authorities concerned, governmental or otherwise;
- c) to carry out research and studies relating to the implementation of industrial projects, and to submit to the authorities concerned, governmental or otherwise, necessary recommendations and assistance in this respect;
- d) to provide technical assistance to existing industries on equipment, operations, management, diversification and marketing of products and expansion of production; and,
- e) to supervise the planning, construction and management of industrial estates in the various parts of the Kingdom, and to extend the necessary technical assistance in this respect.

... (a) the Ministry of Industry and Electricity, (b) the Ministry of Petroleum and Minerals, (c) the Ministry of Commerce and Industry, (d) the Ministry of Planning and Economic Development, (e) the Ministry of Finance, (f) the Ministry of Education, (g) the Ministry of Health, (h) the Ministry of Labour, (i) the Ministry of Agriculture, (j) the Ministry of Housing, (k) the Ministry of Public Works, (l) the Ministry of Transport, (m) the Ministry of Information and Public Relations, (n) the Ministry of Social Welfare, (o) the Ministry of Justice, (p) the Ministry of the Interior, (q) the Ministry of the Royal Palace, (r) the Ministry of the National Guard, (s) the Ministry of the National Security Council, (t) the Ministry of the National Council for Economic and Social Development, (u) the Ministry of the National Council for Industrial Development, (v) the Ministry of the National Council for Scientific and Technological Development, (w) the Ministry of the National Council for Cultural Development, (x) the Ministry of the National Council for Environmental Development, (y) the Ministry of the National Council for Urban Development, (z) the Ministry of the National Council for Rural Development, (aa) the Ministry of the National Council for Industrial Research and Development, (ab) the Ministry of the National Council for Industrial Extension Services, (ac) the Ministry of the National Council for Industrial Information and Documentation.

39. The Centre, at present, consists of three departments:

- a) the Industrial Research Department;
- b) the Extension Services Department; and,
- c) the Industrial Information and Documentation Department.

40. Each department is entrusted to perform a set of functions. These functions however, are not yet finalized due to the fact that considerable degree of overlapping and duplication prevails in the functions of the Centre and the Directorate General of Industry and Electricity. The functions of both are being reviewed at the present time. It is expected that all functions involving studies, research, consultations and the like will be assigned to the Centre while all functions of executive nature will be assigned to the Directorate General of Industry and Electricity.

2. The direct approach

a) The General Petroleum and Mineral Organization (Petromin)

41. Petromin represents the positive side of government policy towards industrial development, i.e. the direct approach of the government's role; it is the instrument through which meaningful industrialization will be carried out, resulting in a big stride toward the accomplishment of the two main objectives of the government. These two main national objectives are:

- i) diversification of the national economy, including sources of government revenue; and,
- ii) the enlargement of national income.

42. Petromin's contribution to these objectives is not limited to expansion of the economy's productive capacity, but also includes injections through sectoral interlinkages, i.e. growth promoting effects in all other sectors of the economy.

43. Petromin's activities are confined to petroleum, petrochemicals and minerals. Thus, although it exemplifies the first step ever taken in Saudi

Arabia toward industrial planning, and that it is, nonetheless, limited to these industrial activities. Its industrial program is, therefore, not comprehensive but at the same time.

44. The General Petroleum and Minerals Organization (Petromin) was created at the end of 1962 as a state owned development corporation.

45. The objectives and functions of Petromin are stated in Article 2 of its Statute. This article states that:

"The objective of this Organization shall be to participate in the various phases of commercial (and) industrial activity connected with petroleum and minerals, with the purpose of developing, promoting, and improving both the petroleum and the mineral industries, and petroleum and mineral products and by-products, as well as related industries. For this purpose, the Organization shall specifically:

- a. implement and administer public project for petroleum and mineral in the Kingdom;
- b. import, either directly or through agents, the country's requirements of such mineral substances as shall be specified in a decision to be issued by the Minister of Petroleum and Mineral Resources;
- c. conduct on its own, or, through others, theoretical and practical studies and researches relating to petroleum and minerals;
- d. conduct, on its own, or, through others, such operations as the State may entrust to it in (the fields of) searching for producing, refining, purchasing, selling, transporting, distributing, and marketing petroleum and mineral substances, whether inside or outside the Kingdom;
- e. cooperate with private organizations and companies carrying on petroleum and mineral activities, with the purpose of facilitating prospecting, exploration, and exploitation operations, including distribution or marketing;
- f. establish, either inside or outside the Kingdom, companies or enterprises in whose capital it will participate, with the purpose of engaging in all phases of the industry of petroleum or minerals, and their derivatives and by-products, and of trading in, transporting, selling, distributing and marketing them;

the Organization may hold an interest or participate, in any manner whatsoever, in companies or organizations, which are engaged in similar activities or which may be of assistance to it in the attainment of its objectives, either inside or outside the Kingdom. It may also, subject to the limitations of regulations in force, buy annex, or amalgamate such companies or organizations with it; and,

invest its funds in securities pertaining to objectives other than to its own".

c) The Ministry of Agriculture and Water Resources

46. The Ministry participates in the industrial development of the country by establishing certain kinds of industrial projects. The Ministry's industrial activities have been confined to the following two areas:

- a) date packing;
- b) water purification and desalination.

47. The Ministry established two date packing plants (one in 1952 and the other in 1955) to operate as demonstration units. One of the plants was sold later (in 1961) to the private sector. The second is still owned by the Ministry.

48. Water purification and desalination is an area where the Ministry of Agriculture and Water Resources has moved in on a very large scale, considering the volume of investment involved.

49. Three water treatment plants were established and began operation this year (1969). The three plants which are located in Riyadh, the capital of the Kingdom, involve about SR 55 million (of the SR 107 million, the total capital cost of the first phase of the project). Two extensions are planned: the first to satisfy estimated 1985 consumption; the second to satisfy 1995 consumption. The two extensions require a total of SR 110 million, of which SR 26 million would be for the treatment plants.

50. A desalination plant, which would produce five million gallons of water and 50 million lbs per day, is under construction in Jeddah. Two other small plants, with a capacity of 230m³ per day each, were already established. These are, however, operating at a low capacity at the present time. The two plants are on the Red Sea coast, one in Debba and the second in Al-Wageh. A fourth plant, located on the Arabian Gulf, is under construction. Three other plants will be established in the near future. Two of these plants will be in the Eastern Province while the third will be in Western Province.

51. Although the water purification plants and the desalination plants are industrial projects in nature, they, nevertheless, are not based on economic

c) The Municipality of Riyadh

52. The Municipalities Affairs Division of the Ministry of Interior established ten small electric light generating projects in ten different villages and small towns in the Kingdom. The Ministry's intention is to transfer the ownership of these projects to the private sector as soon as possible. The procedure followed in such cases is to shift such projects to the Ministry of Commerce and Industry for the eventual transfer of ownership to the private sector.

53. In 1960 (1380H), the Municipality of Riyadh set up an automatic baler and a flour mill. These two plants were never operated due to technical problems.

54. Since 1966 (1386H), all matters related to electricity, including the programme of the electrification of villages and towns, were made the responsibility of the Ministry of Commerce and Industry. Thus the Municipalities Affairs Division ended its role as a promoter of electricity projects. No further industrial activities are expected to be undertaken by the Ministry of Interior.

B. Industrial planning in Saudi Arabia

1. National planning

55. No comprehensive national industrial plan has ever been prepared or

1/ The discussion in this section is based on the author's acquaintance with the industrial sector and with the mechanism of preparing the present national economic plan. It is also based on discussions undertaken with officials participating in the overall preparation of the plan.

implemented in Saudi Arabia. ✓ At the present time, however, the Central Planning Organisation is in the process of formulating a five years national economic plan. The preparation of the plan will be completed by August 1970. The plan would be implemented, after its approval by the Council of Ministers, beginning in the forthcoming fiscal year, which commences in Rajab 1390 (August-September 1970).

56. The development of the industrial sector would be promoted within the framework of the general national objectives of the economic plan and according to pre-stated guidelines. The general economic objectives of the national plan as approved by the Council of Ministers in August 1969 are the following:

- a) to increase the rate of growth of gross domestic product;
- b) to develop human resources in such a manner as to facilitate the utilisation of the economy's resources; and,
- c) to diversify the sources of national income and to decrease dependence on oil through increasing the contribution of other productive sectors to gross domestic product.

57. The following are guidelines for the development of the industrial sector:

- a) expansion of industrial production within the present financial ~~and human resources.~~ The plan will concentrate on the development of those industrial classifications which would not require specialised know-how and a large force of skilled labor. To do so, relatively more capital intensive techniques are called for. This, however, would conflict with the part of the guideline related to the financial possibilities of the economy. Indeed, capital intensive techniques are recommended for the Saudi economy since it faces a chronic human resources problem. The choice of more capital intensive techniques necessarily requires larger amounts of capital compared to the choice of relatively more labor intensive ones;
- b) substitution for imports of raw materials and finished products. The industrial plan could concentrate on the promotion of industrial projects which depend on locally produced raw materials, projects which encourage the establishment of other

✓ A plan is defined to consist of a set of mutually consistent and feasible schemes of action designed to achieve well-defined targets over a specific period of time and within calculated human and financial constraints.

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... Trading Company. Its objectives are to search for markets, to
... to expand them, and to do the actual
... facilities or making investments abroad; and.

- c) encouragement of the private sector with a view to undertaking a basic part in the development of the sector. The plan embodies measures that are mainly institutional whose aim is to increase the efficiency of government agencies related to industrial development. Other measures provide for the issuing of new regulations to encourage the private sector to accelerate its contributions to industrial development. Since the introduction of these measures is a time-consuming process and the impact of changes is not felt immediately, the outcome must necessarily lag a few years behind. Yet such changes are urgently needed to judge from prevailing conditions. The plan regarding the development of the manufacturing sector, unlike that of petroleum, petrochemicals and mining, remains non-progressive and rather passive in nature.

58. The target, regarding industry and mining, is to increase their contributions to the GDP from SR 403 million in 1969 to SR 814 million in 1975, i.e. from 2.5 percent to 3.1 percent.

59. As conceived with the plan, the development of manufacturing industries will be totally left to the private sector. To facilitate this, many of the obstacles presumed to hinder the development of this sector, both institutional and technical, will be removed. In addition, new laws and regulations to encourage industrial growth will be initiated. On the other hand, the development of petroleum, petrochemicals and mining industries would be the direct responsibility of the Government and of Petromin. This does not mean that all industrial projects in these areas will be publicly owned.

60. Industry in Saudi Arabia faces quite a few problems, the most important of which are:

- a) delays in clearing, through customs, raw materials and capital goods. This increases the operating capital requirements;
- b) high costs of some raw materials, some of which are not always available. Electric power tariffs are high, its supply is interrupted from time to time. Land for establishing projects is costly and not always available. All these factors inflate the average cost of production;
- c) shortage of skilled and unskilled workers. Expatriates are not always easily obtainable;
- d) consumers' preference for imported commodities; and,
- e) delays in obtaining licenses to establish new projects or expand old ones, as well as the complex procedures necessary to obtain these licenses.

The industrial plan intends to remedy this situation through the introduction of new measures:

61. The plan is to provide, among other things, for: (a) the coordination of activities of the various government agencies related to industrial development, (b) the creation of new institutions, i.e. industrial banks, commercial courts, (c) the introduction of new measures aimed at reducing the capital costs of establishing new projects, (d) the selection of the most appropriate industrial policy to promote industrial development, (e) the enlargement of the Ministry of Commerce and its agencies to enable it to encourage the establishment of industrial projects, and (f) the expansion of industrial studies and research programmes (to be conducted by the Industrial Studies and Development Centre) with a view to analyzing the comparative cost structures of different industrial projects in order to determine those projects which the private sector could establish.

2. Petroleum, petrochemical and mining

62. Petromin has its own programme which, it is expected, will be incorporated into the national economic plan. The overall programme of Petromin involves the following:

- a) expanding the manufacturing of oil products to meet domestic requirements;

- a) ...
- b) ...
- c) ...

63. The implementation of the program would require the execution of a total of 34 projects, with a total investment of SR 3440 million. Ten of these projects are not industrial in nature although they are in the field of petroleum development, i.e., marketing, exploration, and drilling. Of the remaining 23 projects, one is an expansion of an already established project, the Jeddah Refinery.

64. Of the 34 projects in the program, ten have been implemented. The total invested capital in these ten projects is SR 800 million, of which Petromin supplied SR 432 million in equity and loans. Two of these projects are totally owned by Petromin. Of the ten implemented projects three are strictly industrial in nature involving a total investment of SR 330.8 million (one in each of the ISIC 321, 311 and 341).

65. There is no timetable for the establishment of the remaining 24 projects. Some of them are in the process of implementation, while others are under study or are being contemplated. It is anticipated that the national economic plan would provide for the execution of several of these projects.

66. The capital share of Petromin in all the 34 projects would be in the neighbourhood of SR 1.7 billion, of which SR 432 million have already been invested. The rest is expected to come from the general government budget, loans from local as well as foreign concerns, and revenue from the implemented projects. No specific plan exists at the present time for financing the remainder of the programme. The economic plan presently under preparation would contain the necessary provisions.

67. In its selection of projects for implementation, Petromin uses a project-by-project approach. It takes two criteria into consideration. These are:

1. Commercial profitability;

The Committee was the first to... in the... development... the pre-... The committee was... which was entrusted with... and the super-... of implementation of development projects.

10. The SIC was dissolved in 1964 and replaced by the Central Planning Organisation (CPO). The plan under formulation is the first to be prepared by the CPO. The CPO has the following functions:

- a) to prepare periodic economic reports on the Kingdom and to analyze the economy, its progress and expectations;
- b) to prepare plans for economic development, starting with the preparation of a general plan for the economy as a whole, for approval by the Council;
- c) to make estimates for the financial needs of the development plans, as approved by the Council of Ministers, to be used as a basis for the preparation of the annual government fiscal budget;
- d) to prepare sectoral economic plans together with recommendations for their implementation;
- e) to assist various Ministries and autonomous government agencies in planning their projects; and,
- f) to provide technical advisory services on matters referred to it by the King.

1. The stages of preparing the industrial plan

11. The preparation of the plan for the industrial sector involves the following steps:

- a) the Ministry of Commerce and Industry and Petroleum, being the two agencies directly related to industrial development, notify the Central Planning Organisation (CPO) of the names of the officers who will be responsible for preparing the plan for the sector;

- ...for
- ...it is the
- ...petroleum,
- ...The agency may resort
- ...the Ministry of Commerce
- ...and Development
- ...for assistance;
- c) the CIO discusses the plan with the head of each agency, in the case of industry or discusses it with the Minister of Commerce and Industry and with the Governor of Paraná; and,
- d) the CIO then undertakes to integrate the industrial plan with the general economic plan, in consultation with the Ministries of Finance and National Economy. At this point, a committee comprising these two agencies is formed at the highest level.

2. Promotional measures

74. In spite that national planning is being introduced into the country for the first time, the government has, nevertheless, implemented several measures aimed at promoting industrial development.

75. These measures include the following:

- a) the provision of extension and consulting services;
- b) the introduction of an industrial estates programme;
- c) the enactment of regulations for the protection and encouragement of national industries;
- d) the enactment of foreign investment regulations; and,
- e) the commissioning of consultants to conduct opportunity and feasibility studies.

76. Other measures and facilities were introduced by the government but the impact of these is indirect, and, therefore, they fall beyond the scope of this study.

77. During the last two years, the Industrial Studies and Development Centre has rendered valuable services, although on a limited scale, to the industrial sector. These services included technical advice on marketing, product improvement, plant layouts, inventory management and control, cost accounting, and development of accounting systems. The Centre is planning to expand its activities by acquiring the assistance of a consulting firm. A contract is

being drafted by the Ministry of Industry in this report.

78. The Ministry of Commerce and Industry is establishing three industrial estates, one in Jeddah, the second in Riyadh and the third in Dammam. The following table provides information about the industrial estate programme.

Table 10. Information about the industrial estate programme in the Kingdom of Saudi Arabia

| Location | Area (m ²) | Number of lots | Cost (SR million) |
|----------|------------------------|----------------|-------------------|
| Jeddah | 480,000 | 109 | 11.5 |
| Riyadh | 420,000 | 90 | 10.0 |
| Dammam | 436,000 | 96 | 11.0 |

79. The industrial estates of Jeddah and Riyadh are under construction and should be completed by the middle of 1970. The construction of the Dammam industrial estate will start early in 1970. The construction of the estate is supervised by the Industrial Studies and Development Centre.

80. In 1961, the Government issued regulations for protection and encouragement of national industries. These regulations provided for:

- a) the exemption of machines, tools, equipment and spare parts required to establish or expand industrial projects;
- b) the exemption from tariffs of raw materials and semi-manufactured materials used by local industries, provided that these materials are not available locally;
- c) the provision of land for the establishment of new factories and for the housing of workers at nominal rents;
- d) the protection of locally manufactured goods; and,
- e) exemption from export duties of locally manufactured goods.

81. The foreign investment regulation which was issued in 1963 provides (a) the granting to the foreign capital permitted to be invested in the Kingdom all the privileges granted to national industries under existing regulations.

(1) Income of the company shall be distributed over a five year period on condition that 25 percent of the project's paid-up capital is national.

82. During the last five years, the Ministry of Commerce and Industry commissioned two consulting firms to conduct investment opportunity studies in several industrial activities and to study the feasibility of establishing industrial projects in some manufacturing activities. Ten opportunity studies were conducted. In addition, 13 project feasibility studies were produced. Some of these feasibility studies were taken up by some businessmen for project implementation. Two of these are now under construction. The Ministry also contracted an Engineering consultant firm to study the electricity industry. Several reports were produced and concrete recommendations were made to improve the present condition of the industry.

- 85 -

B. Petromin

83. Petromin, on the other hand, has its own programme which is not based on a review of investment alternatives or any other form of comprehensive analysis of priorities. Most of Petromin's projects (except for the Steel Rolling Mill and the Jeddah Refinery) are not intended for the local market; rather they are planned for the export markets.

84. Petromin employs around 1800 men in its central offices and operating companies. The following diagram illustrates its general organisation.

85. The senior staff of Petromin are drawn from the private sector, including AMAMCO. The new graduates from universities appointed at present and in the past represent a good potential for senior staff after due training. The foreign technical staff is supplied by partners and associates as well as management agreements and direct recruitment through agencies abroad. Petromin's training programme is efficiency oriented and emphasises the practical aspects of training. Fortunately, Petromin has until now encountered little problems in the recruitment of industrial labor due to the fact that the country has a small reservoir which it can draw upon. In the long run the problem may become more acute. Managerial and senior staff training has been carried out by sending staff abroad, thus solving the short-run problem of training at the management level.

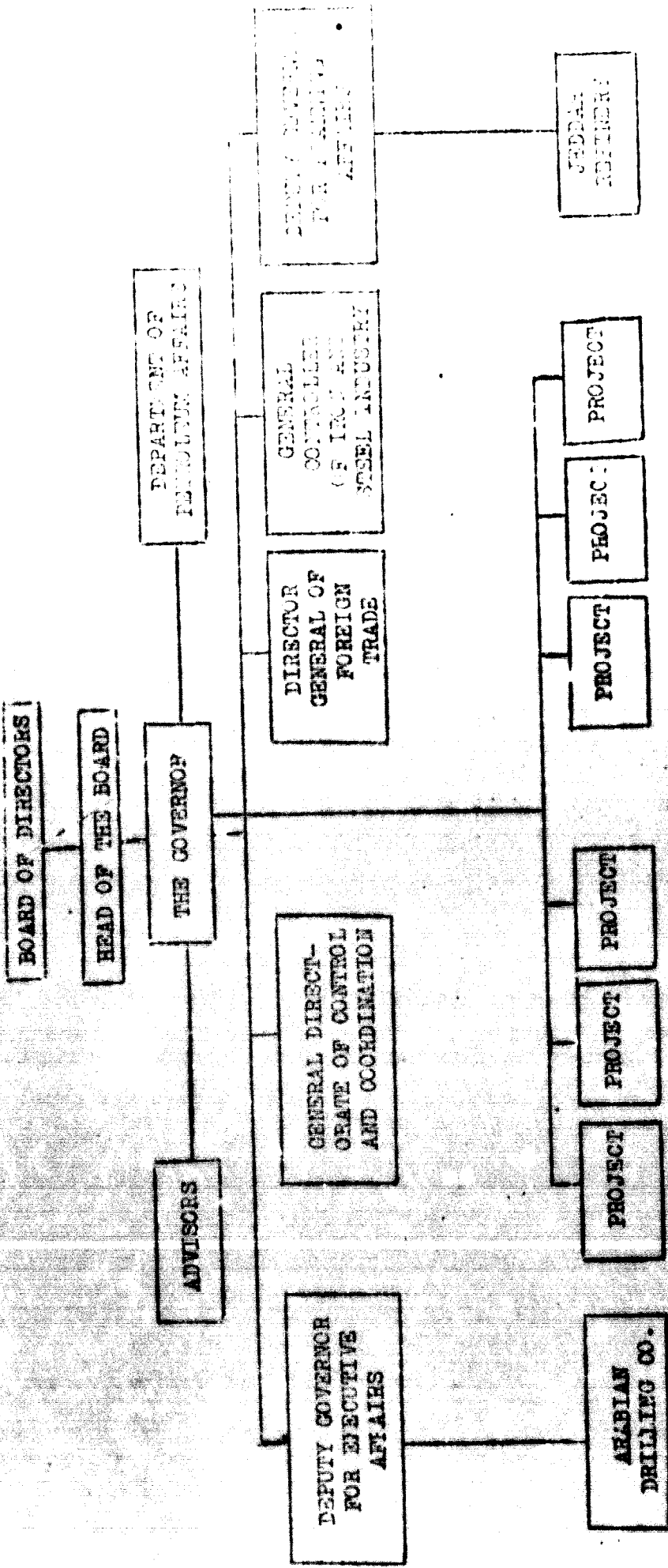


Figure 2: Petromin Organisation

Petromin's programs

1. Petroleum

86. Petromin's target for the oil sector is to create a nationally integrated, both vertically and horizontally, oil organization embodying projects in the different phases of the oil industry. These phases are in the exploration, drilling, production, transportation, refining, marketing, and distribution fields. Several such projects have already been implemented.

87. In 1966 the Arabian Geophysical and Survey Company was established as a Joint Venture with the French Companies Generale de Geophysique. Petromin's share is 51 percent. This company undertakes exploration activities on a contract basis. The company, whose paid-up capital is SR 2 million, has carried out a number of jobs and has achieved high rates of return on its capital.

88. The Arabian Drilling Company (ADC) represents the second stage in the integrated operation. It was established as a Joint Venture with Petromin owning 51 percent and the "Societe de Forages Petrolier Lenguaocienne" and the "Forenco and Societe Forex" owning together 49 percent. ADC's paid-up capital is SR 8 million. The company has carried out several assignments and made reasonable rates of profit on its invested capital.

89. At present, Petromin does not produce any oil. It, nevertheless, participates in three Joint Ventures with 40 percent of the paid-up capital of each. These are Amerap, Sinclair and Natomas, and AGIP and Phillips. The three projects are exploring for crude oil in different parts of the Kingdom.

90. Recently, a tanker company agreement was signed. This represents the first project in the transportation phase of the integrated operation. Other projects, e.g., bulk plants and pipelines, are in the stage of formation.

91. Petromin's marketing activities have been limited due to the fact that Petromin does not produce any oil of its own. The crude oil Petromin receives from ARAMCO is bartered with Rumania.

92. An oil refinery was established in Jeddah. The refinery is owned by Petromin (75 percent ownership) and the Saudi private sector. A Lube Oil Blending plant is in the process of implementation and will be owned by

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94. The Petrosin program is to select a group of petrochemical products which would meet the following specifications: (a) that could be manufactured at competitive costs, (b) that are capable of being contracted (demanded) in a neighboring market.

95. These specifications apply to the basic petrochemicals, better known as intermediates, which do not produce any by-products. As yet, no project in this area, has been implemented. At the end of 1967, however, Petrosin signed an agreement with SABIC, an Arabian concern, to manufacture various petrochemicals in Saudi Arabia. In addition, a project for Sulphur production is in the final stage of preparation and will be ready for implementation soon. In the near future, should a petrochemical project prove to be feasible, Petrosin would enter in a joint venture with AMEC for its establishment. The same applies to other projects.

1.

96. Petrosin capitalizes on the fact that Saudi Arabia has two advantages regarding fertilizer manufacturing. The first is the low cost of raw materials, and the second is the good geographical location of the country in relation to markets. Petrosin prefers to develop the fertilizer industry through joint ventures. The first project was formed in collaboration with Occidental Petroleum Corporation. The venture includes provision for marketing the product via a subsidiary of Occidental Petroleum. The project, which is known as the Saudi Arabian Fertilizer Company (SAFCO), is owned 51 percent by Petrosin and

17 percent by the Saudi private sector. Occidental Intention is to supervise the construction of the plant and to provide the technical management. For that, and for the marketing arrangement, Occidental will receive a certain percentage of the profit, in addition to a certain discount to cover the selling cost (this percentage is received by the subsidiary owned totally by Occidental). The paid-up capital of SAFCO is SR 100 million while total investment is SR 250 million. Other joint ventures, which would include foreign partners, are being studied. Some of these will be located in Saudi Arabia (e.g., production of ammonia) while others will be located in other countries.

4. Iron and steel

97. The establishment of an integrated iron and steel industry in Saudi Arabia will involve three stages: (a) the establishment of a steel rolling mill to produce reinforcement bars, (b) the production of steel from imported raw materials, and (c) the manufacturing of sponge iron from indigenous ore. The steel rolling mill has been completed. The project, whose capital is SR 30.8 million, is owned totally by Petromin. The other two stages, in addition to an expansion of the steel rolling and a pipe making plant in Dammam, are under study. Other projects are also contemplated for the future.

5. Minerals

98. No clear programme has so far been formulated for minerals. A study was conducted with a view to exploring the possibility of establishing a glass factory in Riyadh, but the project was abandoned. Generally, Petromin divides the minerals found commercially in the Kingdom into export-oriented minerals and local industrial growth-oriented minerals. Petromin plans to promote the extraction of the two types of minerals, both as sole ventures and as joint ventures.

IV. PLANNING AT THE PROJECT LEVEL

A. Comparison of Project Planning

99. The comparative level of planning at the project level differs from one organization to another. Project planning by Petromin is more comprehensive and highly efficient. Planning for projects established by the private sector is naive and shows considerable confusion. The Ministry of Commerce and Industry is attaining higher efficiency as a result of its experience in the planning of the "Industrial estates programme" and the contribution made in this connection by the Industrial Studies and Development Centre.

100. It was mentioned earlier that Petromin implemented as part of its long-run programme three industrial projects, i.e., the Saudi Arabian Fertilizers Company (SAFECO), the Steel Rolling Mill (SRM), and the Jeddah Refinery (JR). Planning for each of these projects differed not only because each is of a different industrial classification but also because of the different motivations which led to their establishment, and of the difference in the capital structure of each project. SRM is totally owned by the government (Petromin) while the Saudi private sector owns 25 percent of JR and 49 percent of SAFECO. The ratio of equity capital to borrowed capital differs markedly from one project to the other. Finally, the investment criteria was national economic profitability in the case of SRM, and mainly commercial profitability in case of SAFECO and JR.

101. Generally speaking, each of the three projects implemented by Petromin passed through five of the following phases, differing only in details between one project and the others: (a) preliminary phase; (b) study and negotiation phase; (c) design and engineering phase; (d) field construction phase; and, (e) start up and experimentation phase.

102. The planning steps undertaken in respect of SAFECO are described briefly below:

- a) the idea of establishing a chemical fertilizer industry dates back to 1947 when some preliminary studies were conducted;

- b) between 1958 and 1961, a group of local engineers conducted other studies covering the technical aspects of the project, but not including the feasibility of marketing the product in international markets;
- c) in 1962, Petromin was established. It undertook the responsibility of implementing the project and updated the study;
- d) petromin established contacts with international specialized companies in order to explore the possibility of marketing part of the production which is expected to exceed local needs;
- e) in 1964, an agreement was reached between Petromin and International Ore and Fertilizers Co. (USA) for the marketing of the product. According to this agreement, International Ore would buy the total production of the plant for a period of 17 years at a price five percent less than the one prevailing in the international market. This agreement was part of an overall agreement arrived at with Occidental Petroleum Company, the holding company of International Ore. The agreement stipulated that Occidental would act as the technical advisor whose functions are:
 - i) to supervise plant construction;
 - ii) to provide specialized know-how and expertise; and,
 - iii) to institute training programmes for Saudi nationals relating to plant operation;
- f) negotiation with the government were concluded with the establishment of a joint stock company in September 1965;
- g) basic design, factory specifications and the drafting for engineering and construction were started;
- h) a survey team arrived and decisions were taken concerning (i) site selection, (ii) water supply, (iii) electricity supply, (iv) transport and harbour facilities, (v) steam generation, (vi) housing, and other similar matters;
 - i) invitation to contractors through bidding;
 - j) evaluation of bids and selection of contractors;
 - k) preparation and finalization of engineering and construction contracts;
 - l) preparation of cost estimates of project, and of engineering design;
 - m) signing of contract with Chemical Construction in September 1966 for the building of the project within three years;
 - n) acquiring the land freely from the government;
 - o) organizing the contractor in temporary offices; and,
 - p) selection of a sub-contractor to construct the building.

... value ... jointly ... contribution to ... by the private ...

12. The contribution of ... established because of their national economic profitability was only roughly estimated. Although the commercial profitability, and, in some cases, the national income effect of these projects is negligible, or even negative, they were, nevertheless, implemented. These were considered to be growth promoting projects. The first stage of the iron and steel industry, i.e., the Steel Rolling Mill, is an example. This industry is considered to be basic for the future industrial development of the Kingdom and for setting up of the stage for the construction of a well founded industrial superstructure. It is interesting to note that there was arguments which assert that the direct (and indirect) benefits of the iron and steel project will surpass its direct (and indirect) costs. The government, through Petrozin, has already executed the first phase of the project and is expected to carry on with the remaining phases.

13. This integrated iron and steel complex, in addition to forming the basic for an industrial superstructure is judged to have two main benefits:

- a) Impact on regional development. The Eastern Province, where the complex will be located, would enjoy the rise in the purchasing capacity of its inhabitants and would contribute to national growth as a whole; and,
- b) Development of skills. Estimates of long-run substitution of Saudi nationals for expatriates to operate the project have already been made.

- b) the geographical distribution of the items to be manufactured, the raw items, their annual production, quality and quantity;
- c) items to be produced and the plant's production capacity;
- d) technical description of the manufacturing processes for each item, flow diagram and plant layout;
- e) the type of machines, equipment and instruments required for the implementation of the project, including the source and value of each piece;
- f) raw materials required per year, specifying each item, its quantity, value and source;
- g) labour and managerial requirements, both national and foreign, classified by skills, including wage rates and the estimated annual wage bill;
- h) estimated capital requirements, itemized and subdivided into fixed and operating capital;
- i) timetable for the implementation of the project;
- j) cost study undertaken for the purpose of determining the average total cost of the items produced;
- k) expected wholesale price of each item produced in relation to price of similar items imported;
- l) proposed methods for the utilization and disposition of waste;
- m) methods to be adopted for product inspection and the personnel to be used for that purpose; and,
- n) other information which renders any advice to furnish.

118. The information supplied in the application form could be used for an adequate evaluation of small manufacturing projects, but does not provide the basis for a comprehensive evaluation of large scale projects. Nevertheless, the Ministry of Commerce and Industry does differentiate between large and small scale projects even though the same application form is used. In evaluating large scale projects, importance is given to the country's production capacity, in relation to expected demand. But in the case of small projects, emphasis is laid on the regional allocation of projects. No other criteria are used for

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C. Package Deal Construction

120. Two of the industrial projects established by Petromin were package deals. The third, the Jodan Refinery, was a JMF. The water desalination plant and the water treatment plants all are package deals. The construction of each of these projects, as well as the industrial estates, is supervised by foreign consultants whose remuneration amounts to a certain percentage of the total cost of the project.

121. Petromin has adopted a certain procedure for the implementation of its projects which depend on the type of project, i.e., whether they are totally owned by Petromin or they are joint ventures. The following describes briefly this procedure:

- a) once a project is considered as a proposition venture, an operating committee is formed. Everything relating to the project becomes the responsibility of this committee. In the early stages of project preparation, all operating committees report to the Deputy Director for Planning;
- b) for the project realization, the operating committee is either replaced by a board of directors (in the case of projects taking the form of a joint company), or is instituted as a permanent body of experts for projects owned solely by Petromin. In the latter case, the project is exempt from the jurisdiction of the Deputy Director for Planning in the determination of the investment of capital and distribution;
- c) each permanent operating committee consists of three or four members, one is the manager of the project and the others are to be drawn from Petromin staff. Decisions taken by the committee are not final unless they must be approved by Petromin management. The committee reports to the concerned departments in Petromin. Each project of this kind is controlled by Petromin management and is subject to internal auditing. The project budget is approved by the Board of Directors;

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- a) the Ministry of National Economy;
- b) the Ministry of Petroleum and Minerals Organization;
- c) the Ministry of Commerce and Industry;
- d) the Central Statistical Department; and,
- e) the Ministry of Agriculture and Water Resources.

125. The Ministry of Finance and National Economy participates in the last stage with a view to finalizing the industrial sector's plan as a part of the overall plan. The industrial sector is to be divided into twelve sub-sectors, some falling in Petrocin's domain, some in the domain of the Ministry of Commerce and Industry and some (the agro-based industry) in the domain of the Ministry of Agriculture and Water Resources and Commerce and Industry.

126. The development of the manufacturing industry is to be the responsibility of the private sector while petroleum products refining and mineral processing and production would be the responsibility of Petrocin.

127. Although the first stage of the preparation of the plan (information gathering) is underway, the organization for the preparation of the industrial plan is not finalized. All that is known is that the CPO, Petrocin, the Ministry of Commerce and Industry and the Central Statistical Department would explore the possibility of dividing the industrial sector into 12 sub-sectors. Petrocin is, however, preparing in consultation with the CPO, the Ministry of Commerce and Industry, in turn, would prepare the plan for manufacturing industries independently, also in consultation with CPO, assisted by the Industrial Studies and Development Centre. The Ministry of Agriculture would not participate in the preparation of the industrial plan.

128. There seems to be a need for coordinating industrialization efforts in Saudi Arabia. The development of a certain industrial sub-sector could be a hindrance in conjunction with planning for the other

...of the ... are essential to the ... industrial ... finance, ... etc. The promotion of ... interdependence ... not only in order to integrate the industrial sector itself but also to facilitate future planning and forecast.

129. Similarly, planning for the manufacturing sector can hardly be undertaken in isolation of planning for the agricultural sector. The relationships that exist between the two sectors are such that several industries depend on agriculture for raw materials and the latter depends, in turn, on the products of industry for increasing mechanization and for the implementation of scientific farming techniques. The development of agro-industries is an obvious example.

130. Coordination is a prerequisite for the attainment of the target set for the industrial sector (a rate of growth of the sector's contribution to GDP of 14 percent per annum). Petromin has its own program to execute during the coming five years. The Ministry of Commerce and Industry, on the other hand, is to implement a set of policy instruments which would:

- a) induce the expansion of existing major manufacturing industrial projects, increase the utilization of installed capacity, and promote the establishment of new major projects; and
- b) encourage the development of small-scale industrial projects.

131. The direct and indirect promotion require different planning techniques. Whereas sophisticated planning techniques could be used for the Petroleum, Petrochemical and Mining Sectors, the same does not apply to manufacturing activities in the private sector. The possibility of using sophisticated planning techniques makes it easier to plan, implement and follow-up. But where it would be difficult to apply such techniques in the private sector since the outcome regarding the degree of responsiveness on the part of individual industrial promoters may be subject to considerable uncertainties.

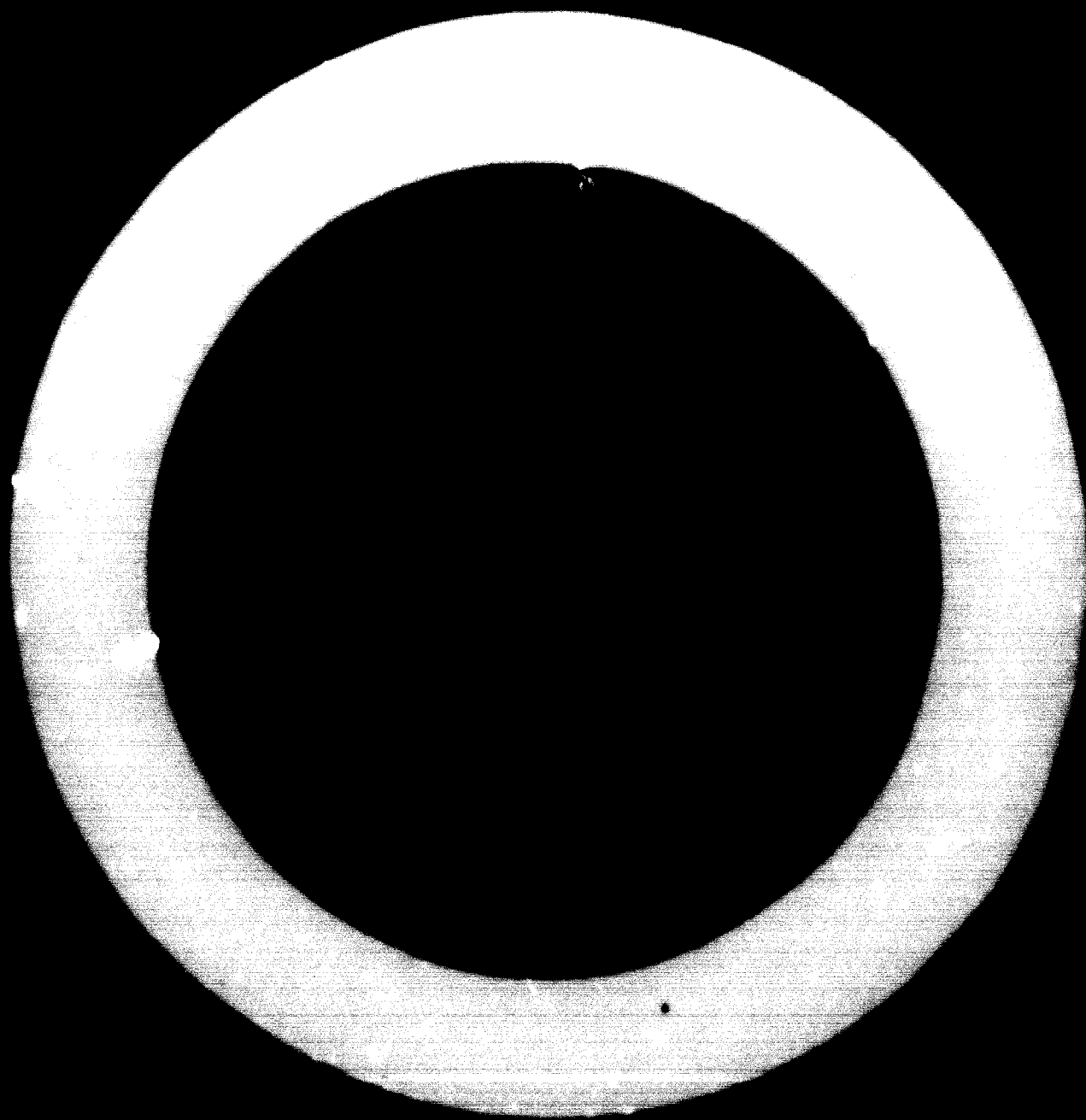
132. There are, however, some general remarks regarding the two sectors:

First, for the first five-year plan, Petromin is expected to implement only a part of its long-run programme. Since each of Petromin's industrial projects requires large volume of capital investment, the selection of a set of projects for execution during this period depends on the capacity of the government to allocate resources. There are

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Second, the Government should encourage the private sector to expand its industrial activities in order to attain the planned target. Such inducement may take the form of:

- a) publishing an industrial investment program for the private sector, including basic information on each project such as capital requirements, sources of equipments and raw materials, description of the production processes;
- b) collecting information about existing projects and commission capacity studies. This is a continuous process which enables it to compare total demand on each product with total installed capacity;
- c) assembling information about industrial projects which have succeeded in other countries of similar circumstances, particularly in the neighboring countries;
- d) constructing a detailed inter-industry table. At the same time inter-industry tables for other countries may be studied in order to select, after introducing necessary modifications, one suitable for planning purposes in Saudi Arabia. Preferably, such table should be presented in a simplified, easily comprehensible form, to the private sector;
- e) continuously singling out firms needed for specific projects and assessing the possibility of manufacturing them locally, and;
- f) showing the basic technology needed into consideration that Saudi Arabia is an underpopulated country.



Industrial Estates

The Ministry of Commerce and Industry have planned three industrial estates, one in Jeddah, one in Riyadh, and one in Dammam. The planning for the Dammam industrial estate will be described below as an example of the Ministry's performance in this respect. It should be restated here that the Industrial Studies and Development Centre is pursuing the whole matter on behalf of the Ministry.

One of the main difficulties facing the prospective industrial promoters in the Eastern Province was to find suitable locations at reasonable costs. In many instances land was available but the cost of providing the necessary utilities was prohibitive.

In order to solve this problem, the Ministry of Commerce and Industry decided to develop an industrial estate on the outskirts of Dammam. This decision was reached after a feasibility study, conducted by the Ministry and the Arabian American Oil Company (ARAMCO), was undertaken.

The Industrial Studies and Development Centre was responsible for the planning and supervision of the development of the Dammam industrial estate. Approximately \$21.2 million was budgeted for the project.

A. Facilities on the estate

At the outset, the Centre decided not only to provide suitable lots for industrial locations with all the utilities needed but also to provide the

Following are the facilities:

1. Administration building
2. Bank
3. Post office
4. Police station
5. Fire station
6. Canteen
7. Dispensary
8. Nursery factories
9. Model factory building
10. Mosque

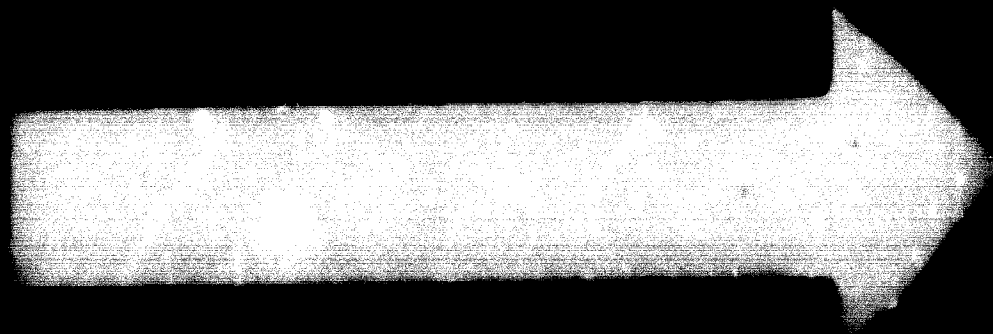
B. Site selection

After careful consideration of possible sites in the Dacca area, a site of 100 acres owned by the Municipality and intended as an industrial zone was chosen and taken over by the Ministry of Commerce and Industry. An adjacent site of 130 acres owned by the Government Railways was also taken by the Ministry on a long lease. The site was located next to a main highway.

C. Physical aspects

1. Stages of development

After careful study of many factors, mainly, availability of funds, nature and types of industries in the area, and government priorities, the Centre decided to develop the estate in three stages, the first - covering an area of 150 acres and sufficiently large to cater for the needs of industrial units in the vicinity for the next 15 years.

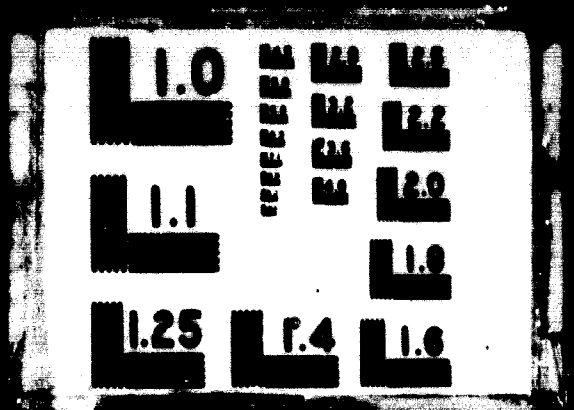


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2. Master Plan

A master plan was designed for the first phase with careful consideration of the following:

- a. types and sizes of plots;
- b. road network and traffic flow;
- c. open areas needed;
- d. built-up areas versus open area;
- e. orientation and location of plots in terms of sizes of industries, day light, access to transportation routes; and,
- f. the necessity of integrating the first phase with future development.

3. Utilities

After thorough consultation with all the departments concerned and after consideration of all the factors affecting the quantities needed, it was agreed that (a) electricity will be supplied by the Dammam Electric Company and that a sufficient area will be allocated for electric sub-stations. It was agreed that these will deal individually with different industrialists; (b) since the present network of water for the city will not be capable of providing the required amount of water for the estate, it was decided to dig two artesian wells on the site since the water table is at a favourable level.

4. Soil analysis and topographic survey

To help in estimating the area of land to be levelled and the quantity of fill needed for levelling, a consulting firm was asked to conduct a topographic survey. Furthermore, to obtain sufficient information necessary for construction, the same firm was asked to study the soil of the site.

D. Construction

The construction of the Dammam Industrial Estate will start within 3 months.

1. Administration area

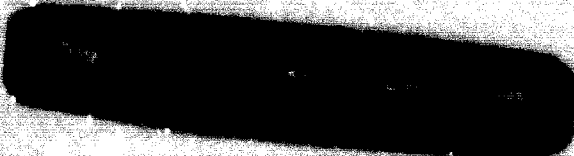
The administration area will contain the buildings which will house the different services mentioned above. These buildings will be constructed under a contract by a construction firm.

2. Roads

A separate contract will be entered into with a specialized firm for constructing the roads outside the administration area.

3. Water and sewers

A separate contract will be awarded for the water and sewers network.





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