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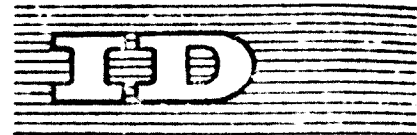
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DEVELOPMENT OF THE PETROCHEMICAL INDUSTRY
IN MOROCCO^{1/} =

by

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Morocco

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INTRODUCTION

As yet, Morocco has no petrochemical industry in the true sense of the term. There are, to be sure, many small enterprises which process petrochemical products, but they use materials which have already been processed abroad and whose semi-manufactures nature is reflected in their high import prices.

In its effort to achieve industrialization, Morocco is very interested, like many other developing countries, in the possibility of manufacturing petrochemical products within its borders.

Some of the products which Morocco would like to manufacture for itself are of particular economic importance in view of the low standard of living of the majority of the population. Because of this, the import of petrochemical products tends to be more and more of a burden on the balance of trade of the country, as well as giving rise to recessions in the local industrial sectors manufacturing products with which such imports compete.

There are therefore good reasons for establishing a local petrochemical industry: the aim of this document is to assemble some data on this matter and to outline some possible forms of action.

1. THE IMPORTANCE OF PETROCHEMICAL PRODUCTS FOR THE MOROCCAN ECONOMY

As there is no local industry producing petrochemical raw materials, the degree of utilization of petrochemical products can be determined from the available records of imports.

Unfortunately, the degree of accuracy desired (regarding potential demand for such products) would involve a considerable effort which would not be worth undertaking because of the low level of imports compared with the minimum quantities required to ensure the profitability of investments.

The place occupied by petrochemical products in the Moroccan economy is very important, however, when considered from the point of view of the rate of increase of imports of such products. The table given in the Annex shows that the value of imports of petrochemical raw materials increased by over 200 per cent between 1961 and 1968, while their share of the total value of imports rose from 2.3 per cent in 1961 to 5.9 per cent in 1968.

The table is intended to show only the total value of imported petrochemical raw materials. It does not, therefore, include details of finished imported

goods, where it is difficult to surmise the origin of the raw materials. Thus, for example, the table gives the figure of 1.2 million dollars for the value of imports of uncured synthetic rubber in 1958, but the value of the imports of semi-finished and finished rubber products in the same year was 7 million dollars.

This means that the total value of imports of raw materials plus imports of finished and partially-finished goods based on similar materials is considerably greater than might be assumed from the table in the Annex.

Of the five types of petrochemical products listed in the table:

- plastics
- synthetic rubber
- organic materials
- nitrogenous fertilizers
- synthetic fibres

those which have achieved the highest degrees of utilization in Morocco are synthetic fibres and, to a lesser extent, nitrogenous fertilizers.

The very considerable degree of utilization of synthetic fibres is due to the fact that the unitary price of these fibres is relatively low, while clothing, as well as being a necessity, can also be a luxury article.

The consumption of nitrogenous fertilizers is beginning to reach a substantial level as a result of the efforts being made to modernize agriculture.

2. PROJECT EVALUATION CRITERIA

Projects for the establishment of petrochemical enterprises in Morocco are the result of observation of the high volume of imports of certain petrochemical products.

Unlike the developed countries, there can be no question in Morocco of creating a need by the simple process of beginning to manufacture a certain product, even if the product in question were important for the national economy, for such a project would run into the difficulty of solving technical problems for which there are no available human or material research facilities in the country.

Nor can the manufacture of petrochemical products in Morocco - which lacks the necessary raw materials - be based on plans for their export, for in spite of very considerable fiscal concessions the production cost would be too high.

There remains the internal market. The possibility of establishing petro-

chemical enterprises depends to a large extent on the present and future capacity of this market to absorb petrochemical products. This consideration is of less vital importance, however, in the case of heavy, bulky products of low relative value (in the event, nitrogenous fertilizers), where the transport cost forms a substantial part of the purchase price.

3. DIFFICULTIES STANDING IN THE WAY OF THE ESTABLISHMENT OF PETROCHEMICAL ENTERPRISES

The main difficulty lies in the low product absorption capacity of the Moroccan market, which prevents goods from being produced at prices equal to or lower than those of imported products.

Two factors operate in favour of the development of this market, however. One is the general upsurge in the demand for petrochemical products, and the other is the establishment in Morocco of processing industries which enable a transition to be made from the import of more or less finished goods to the import of raw materials.

It is unfortunately often to be observed, however, that the profitability threshold of a project itself tends to rise on account of the concentration of the means of production in the developed countries.

The development of local processing industries, such as:

- The production of finished goods from plastics (shoes, bottles, irrigation piping etc.);
- The production of detergents from organic chemicals;
- The production of fishing nets and cordage from yarn;
- The production of conveyor belts from rubber, and other production ventures;

runs into two major types of difficulties.

(a) The novelty of the activities involved, which calls for a high degree of professional capability and adaptability to rapid technical progress on the part of the technicians who have to build up the industry in question;

(b) The high cost of the research needed to design products which are thoroughly well adapted for local use, such as studies in connexion with promotion of the use of plastics in irrigation and construction work. It should be

noted that materials developed in advanced countries or other countries are often not adapted to Morocco climatic and social conditions.

4. FUTURE PROSPECTS

Three years ago a project for the production of chlorine and caustic soda was studied. This project provided for the production of PVC in order to make use of the chlorine, but it was never put into effect because of the high price of electricity in Morocco (2.2 cents per kwh).

Since then, the possibility of producing PVC from imported monomer has been studied, but the rather hesitant growth of the market has prevented the taking of a decision on this project as yet.

A project is at present being studied, however, which appears to be very likely to be put into effect. This project is for the construction, initially, of polymerization and spinning facilities for the production of nylon-6 and polyester synthetic fibres. The Moroccan market appears to be large enough to absorb the output of production units of a viable scale constructed under such a project.

If Moroccan agriculture continues modernization at its present rate, the future production of nitrogenous fertilizers is envisaged.

Likewise, the PVC production project would become a practicable proposition if the problems posed by the utilization of this material for agricultural irrigation were overcome.

Production of carbon black and dodecylbenzene could possibly be undertaken in a few years' time if the Moroccan market for these materials continues to grow at its present rate.

CONCLUSIONS

Despite the lack of raw materials, significant achievements in the petrochemical field appear to be possible.

The projects which at present seem to be of a long-term nature (5-10 years ahead), however, could be put into effect sooner if solutions to the present difficulties are found.

Among these solutions, two could be found with the aid of the United Nations Development Programme (UNDP):

(a) By the establishment of an institute for training specialist technicians who could be employed in the processing industries and provide them with technical support. Such an institute should train some 500 specialist technicians per year. UNDP would provide assistance in planning the institute and participate, along with the Moroccan Government and the industries concerned, in financing its construction and providing it with the necessary initial resources. The operation of the institute would subsequently be paid for by permanent subsidies from the industrial enterprises, which would also keep a check on the effectiveness of its work.

(b) By the establishment of a research centre to study the applications of petrochemical products in different sectors of the economy. The two most important sectors for Morocco are agricultural irrigation and land improvement in general, on the one hand, and the construction industry on the other. The introduction of petrochemical products into these sectors, with a concomitant reduction of prices would solve considerable economic and social problems. UNDP could provide the same kind of assistance as that in connexion with the training institute. The Moroccan Government and various bodies or companies could provide funds to cover operating expenses.

ANNEX

Value of imports of petrochemical raw materials
(millions of US dollars)

Material	1961	1962	1963	1964	1965	1966	1967	1968
Plastics	1.5	1.6	2.4	1.0	1.0	1.0	1.0	1.6
Synthetic rubber	0.6	0.9	1.0	1.3	1.0	1.5	1.1	1.4
Organic materials	2.1	2.3	2.3	2.2	2.9	3.4	4.2	5.7
Nitrogenous fertilizers	2.4	2.7	2.4	3.3	4.4	5.2	4.9	5.5
Synthetic fibres	3.5	4.8	6.1	7.2	10.5	15.5	14.6	18.0
TOTAL	10.1	12.3	14.2	16.3	19.8	26.6	25.8	32.8





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