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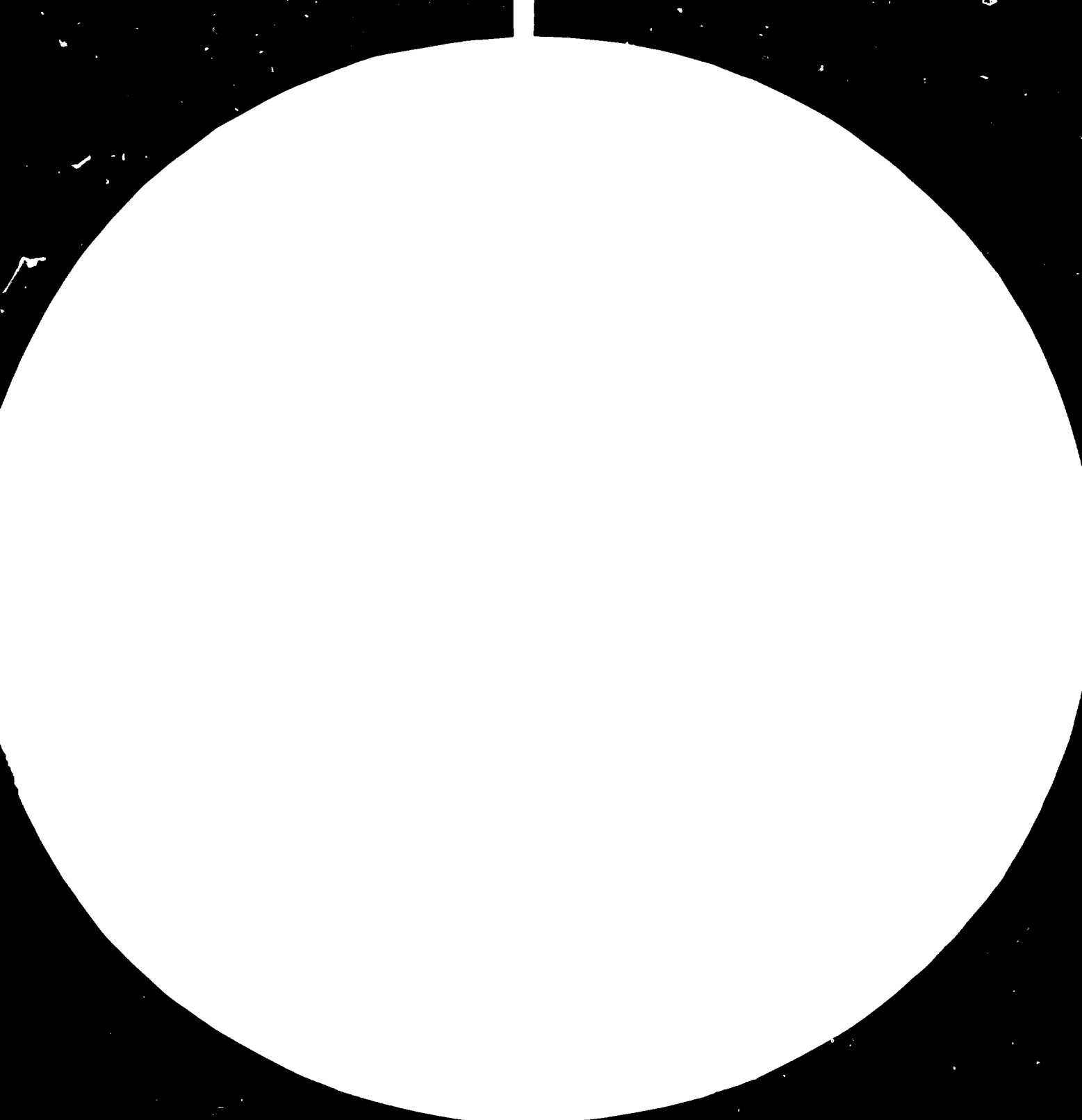
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Figure 1. Resolution test target for the resolution test.

Figure 2. Resolution test target for the resolution test.

Figure 3. Resolution test target for the resolution test.

Figure 4. Resolution test target for the resolution test.



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Distr.
LIMITED

ID/WG.364/30
18 June 1982

United Nations Industrial Development Organization

ENGLISH

Technical Conference on Ammonia Fertilizer Technology
for Promotion of Economic Co-operation among Developing
Countries

Beijing, People's Republic of China, 13 - 28 March 1982

FERTILIZER INDUSTRY IN THE SUDAN*

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FERTILIZER INDUSTRY IN THE SUDAN

INTRODUCTION:

The application of fertilizers in the Sudan started at the first time in the Gezira Scheme in the early Thirties. These fertilizers were of nitrogeneous nature according to recommendations of Agricultural Research Corporation. This is due to deficiency of nitrogen in the soil of the Central Sudan. However, officials, believe that this will be the situation for years to come. Thus the imports of fertilizers like Ammonium Nitrate, Ammonium Sulphate were the first to be applied in the irrigated agricultural schemes, later and till now the dominant fertilizer, used in the Sudan is urea which is rich in nitrogen compared with others. The imports of fertilizers (urea), are increasing rapidly year after year, and the vertical expansion in agriculture depends to a great extent on application of fertilizers, this led to the Sudan to start building its own industry of fertilizer - a plant for the production of urea which is due to start operation.

Background on Fertilizers Application in the Sudan:-

The Sudan, one million square miles of territory depends mainly on agriculture. The application of fertilizers is limited only to irrigated agricultural schemes. However, in the traditional agriculture, the application of fertilizers is not witnessed. This include the rainfed agriculture.

The extensive research on different crops, especially cotton, and the results of soil analysis, were an indicator for the recommendation of fertilizers of nitrogeneous nature. That is why imports of fertilizers were ammonium nitrate and ammonium sulphate and recently urea, which is now the main fertilizer used in the Sudan.

Areas of Main Crops:

The main crops where fertilizer is applied are cotton, sugar-cane, groundnuts, wheat, sorghum and horticultural products. The following table shows, different area expansions of these basic products:-

Area in (000) Feddans :

	1975/76	1976/77	1977/78	1978/79
Cotton	981	1006	1120	1036
Sorghum	6331	6287	6562	7202
Groundnuts	2321	1830	2551	2323
Wheat	590	539	502	535

Imports of Fertilizers:-

The following table shows the imports (quantity and prices) of imported fertilizers. These fertilizers are mainly urea.

Year	Quantity in thousand tons.	Value in Sudanese '000' Pounds
1972	194	2496
1973	189	3760
1974	259	7134
1975	167	7331
1976	207	9386
1977	183	4115

Local Production:

Now there is no local production, but there is a plant in a commissioning stage. The target of this project is to manufacture 200,000 tons/year of urea, 46% N, by steam reforming of naphtha. The location of this plant is Khartoum. Naphtha is used as raw material and fuel. The plant requires 84400 tons/year of imported Naphtha.



