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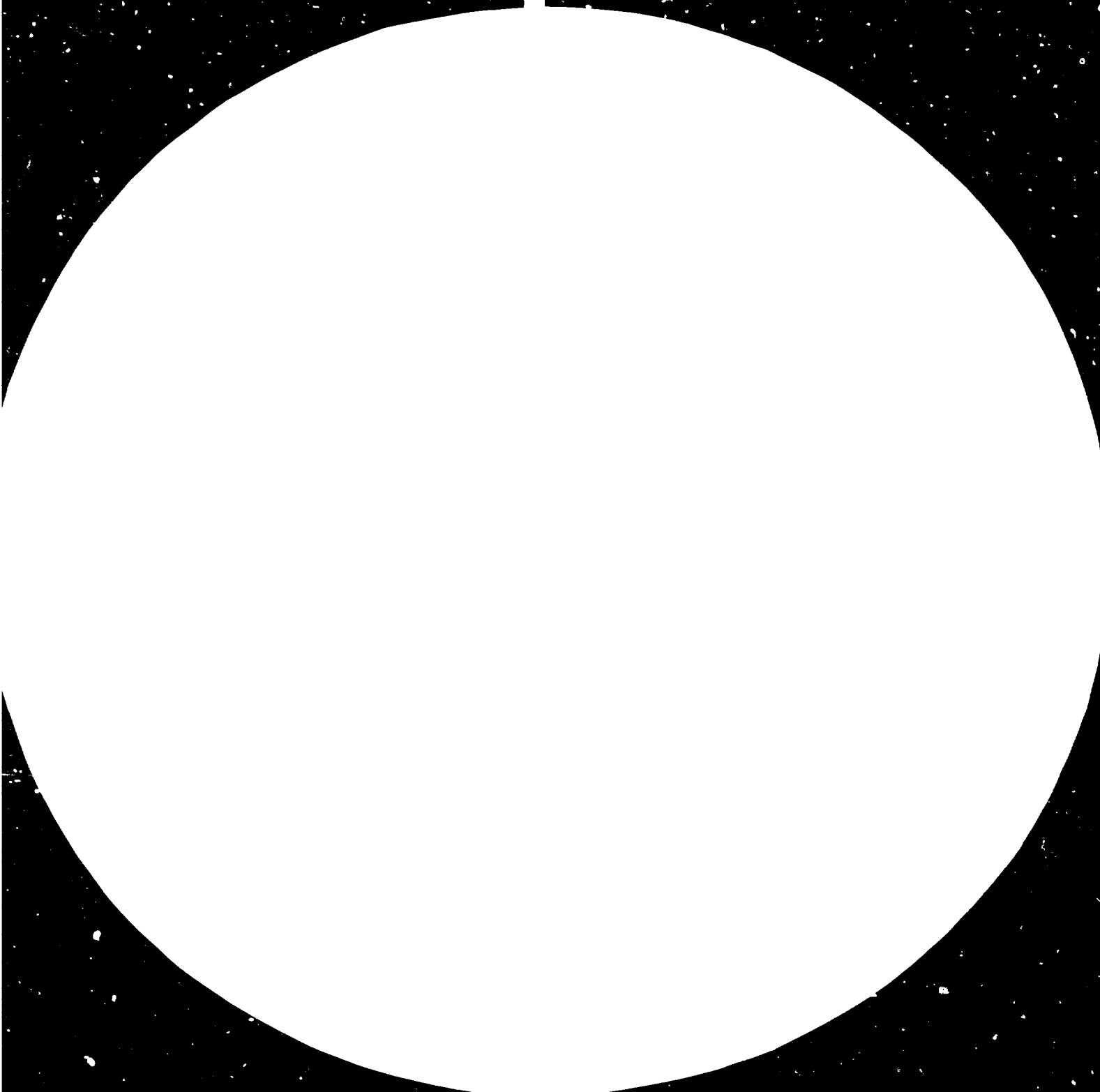
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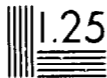
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SUGAR INDUSTRY IN IRAQ

presented by the

Government of Iraq

T. Hamoudi

006.00

PREFACE

This document, Sugar Industry in Iraq, is one of 18 studies presented as supporting material to the Iraq country paper about the development of agro-industries and state of agricultural production and supplementary industries. We thought of presenting them to assist the reader in getting acquainted with the pioneering experiment in Iraq in the development of this field of our economic activities. This documentation reflects the great development achieved within the years that have already elapsed since the uprising of 17th July Revolution under the leadership of Arab Baath Socialist Party that aimed at achieving economic and social welfare for the people by rational use of the natural resources and elevating our country to the rank of advanced countries within a considerable period.

From the point of view of the Revolutionary leadership in Iraq, what has been achieved so far in the field of irrigation development, drainage, mechanization of agriculture, animal production, other agro-industries, and other infra-structural development in this field, are deliberate and effective steps towards reaching our aspiration.

In those studies we have tried to highlight the main development features, the negative sides as well as the positive results achieved so far with the objective of presenting our experience to brotherly and friendly countries in particular to those whose conditions and potentialities are similar to our country. This exchange of experience is not only a necessity but a duty imposed on us by our principles and the current international circumstance in which food weapon becomes one of the important weapons raised by imperialism in the face of developing countries. If those countries do not support each other and exchange national experience their task in achieving their food security will be, if not impossible, difficult to achieve.

We hope that our contribution together with that of other participating states and organizations will contribute to the success of this ministerial meeting on development of food industries in developing countries.

Preparatory Committee
for the Round-Table Ministerial Meeting
on Agro-Industry Development

SUGAR INDUSTRY IN IRAQ

Introduction:

Sugar is a major component in our daily food, the demand of which increases as incomes and populations increase especially in the developing countries. It is considered the cheapest source of energy obtainable from a given unit of land surface, and could be considered a factor in meeting food requirements of populations.

Sugar is produced from two main sources: cane and beet.

Estimation of world production of sugar for 1978-1979 was 92,075,000 tons of raw sugar, i.e., 84,709,000 tons of white sugar of which, 51,503,000 tons or 61% was from sugar cane and 33,206,000 tons or 39% was from sugar beet.

Iraq is among the countries which can produce both sugar cane and sugar beet. In the north, sugar beet is produced, while in the south, near the marshes sugar cane has been introduced. In addition, Iraq is considered the highest producer of dates. Palm trees number about 22 million and dates production amount to about 350,000 tons per year. Iraqi dates have the highest contents of sugar among all agricultural products in the world, i.e., 50-60% of the weight is monosaccharides.

I. Sugar Industry in Iraq

Primary studies on sugar beet in Iraq started in 1936 by cultivating it in experimental farms. The studies were oriented toward finding the main regions where it could be cultivated, the areas which could be cultivated, and the

productivity per donoum.*

These studies continued and intensified in many regions, and recommended the establishment of a national sugar industry in Iraq depending on sugar beet. So the Mosul Sugar Factory was established and started production in 1959.

As for sugar cane, it was cultivated for the first time in Iraq in 1947. During the period 1954-1958, experiments showed that the productivity of one donoum is (25-30) tons with a sugar content of (10-14%).

In 1964, a feasibility study carried out in Maisan governate in the south region of Iraq, recommended the establishment of a cane farm and a sugar factory, both of which were established and started production in 1970.

Due to the increasing consumption of sugar in Iraq and the favorable environment in the north region to produce sugar beet, a third factory was established and started production in 1976.

As Iraq has a great number of date palms and due to the surplus of unexploited dates, a project is under construction in Hindyah to produce liquid sugar. It is expected to start production within a few months. Its productive capacity is 30 thousand tons of liquid sugar per annum, equivalent to 22 thousand tons of crystal sugar.

II. Sugar Consumption in Iraq

Iraq reached its highest consumption rate in 1978, about 400 thousand tons of white sugar.

The following table shows the white sugar consumption of Iraq during ten years. The figures include sugar stored in

* one donoum = 2500 square meters.

factories, distribution agents and consumers, and do not necessarily indicate actual consumption.

Year	Quantity: 1000 Ton White Sugar
1969	251
1970	218
1971	245
1972	283
1973	279
1974	302
1975	330
1976	368
1977	382
1978	400

Sugar consumption in Iraq is increasing but statistics do not reflect this reality as import and storing policies and the international prices during that period have their effect on stored quantities.

A study on sugar economies in Iraq, which was carried out lately, shows that the relative increase in consumption is much more than the relative increase in population, which means that population growth is not the only factor affecting consumption volume but there exists several other factors, some direct which could be quantitatively measured and some indirect and could not be measured.

The study showed that the first set of factors (measurable ones) are:

The population effect

Sugar is one of the main components in the Iraqi diet, it comes ahead of other necessities after bread,

so population growth is among the factors influencing the country's increased consumption.

2 - Income factor

Income is among the main factors affecting consumption. Consumer demand increases as incomes increase.

3 - Price factor

Consumption of sugar is normally affected by price movement and its development trend. Government price controls in Iraq, however, make the government the bearer of price increases and this makes this factor of less importance.

As for the unmeasurable factors that affect consumption, they are:

- 1 - Social customs.
- 2 - Changes in tastes and food habits.
- 3 - Changes in actual consumption models.
- 4 - Marketing policies, such as distribution and advertising methods.

Per capita consumption of sugar in Iraq is relatively high compared not only with other developing countries but also compared to a certain number of developed ones. The following table shows per capita consumption of sugar in selected countries in 1977:

Per Capita Consumption of
White Sugar (Kilo/Year) for 1977*

World	19/-
Europe	37.4
North America	43.1
Central America	37.2
South America	37.2
Asia	8.4
Africa	12.1

* Source: Annual Sugar Book, International Sugar Organization, 1977

.../ Per Capita Consumption of White Sugar (Kilo/Year)
for 1977

Oceanea	43.9
Iran	30.5
Iraq	30.9
Kuwait	32.6
Lebanon	25.6
Jordan	23.8
Saudi Arabia	28.9
Syria	22.7
Algeria	20.5
Egypt	19.3

Studies confirm that the average Iraqi gets double his need of sugar according to the Baghdad Nutrition Institute; 2.344 kilo/month compared to 1.174 kilo/month in 1971/1972.

III. Consumption Estimates for 1985

From studying the factors influencing per capita consumption of sugar in Iraq and referring to available statistics, it can be estimated that total consumption of white sugar will reach about 500-520 thousand tons/annum in 1985.

In case of continuing consumption increase at the existing rate, it will be one million tons white sugar in 2000 which is very close to the estimation of the Arab Organization for Agricultural Development, i.e., 1036 thousand tons.

IV. Sugar Industry in Iraq: Facts and Problems

White sugar produced from local sources (cane and beet) represents a very low percentage of total sugar production in Iraq. The amount produced from local sources in 1977 was about 11867 tons or 4% only, while that produced in 1976 was about 17392 tons or 5%. That means that most Iraqi white sugar production depends on imported raw sugar. This is due to the insufficient availability of sugar cane and sugar beet.

In order to make the problem easier to understand: Mosul Factory's capacity is 3000 tons/day, for 60 working days. Therefore, the factory's capacity is 180,000 tons of sugar beet each season.

Sulaimanyah factory's capacity is 2000 tons/day for 60 working days. Therefore, the factory absorbs 120,000 tons of beet. The total is 300,000 tons of beet, while available beet in 1977 amounted to only 66.667 tons or 20% of the total capacity of the two factories.

If we consider the possibility that the two factories could theoretically work two beet seasons per year, they will be working with only 10% of capacity with available supplied of raw beet.

And so was the case in 1978; the available beet for two factories was about 60.587 tons, i.e., 20% of their need which decreases to 10% if the possibility of working for two beet seasons per year is considered.

As for cane, the factory's capacity is 4800 tons/day, with a cane season of 85 days it can absorb 408,000 tons. Supplied cane in 1977 was 126,838 tons or 31% of its capacity while in 1978, it was 200,654 tons, i.e., 49% of its capacity.

The reasons for the non-availability of both sugar cane and sugar beet are briefly described below.

V. Problems Facing Sugar Beet Cultivation

The cultivation of sugar beet was first introduced in Iraq more than twenty years ago, but progress in this cultivation as well as in the area cultivated started to decline in 1975, after the implementation of the national development plan which absorbed farm manpower into new industrial projects; this resulted to:

- 1 - Manpower transfer to towns.
- 2 - Increase of manpower salaries on farms.
- 3 - Sugar beet farmers started to cultivate other products such as potato, tomato and water melons...etc. because these products need shorter period of cultivation and the donoum revenue is higher than sugar beet. Labor requirements are also lower.
- 4 - Decline in agricultural land near sugar beet factories. since those lands were allocated to housing projects or to other crops. Those lands were characterized by high productive capacity of its farmers and high land fertility.

The State Company for beet sugar had therefore, to take the following measures:

- 1 - Increase the sugar beet prices.
- 2 - Increase the facilities and transport fees for the beet.
- 3 - Provide agricultural machines for ploughing, seeding, turning, pest control and cutting.

But, these measures were not enough to stop the decrease. Therefore, the Iraqi Commerce Organizing Committee decided to increase sugar beet prices to I.D.* 14 instead of I.D. 10 for

* Iraqi Dinar

One I.D. = U.S.\$3.3

the ton. This price was based on a special study of price parity of agricultural products, and the decrease has stopped. There is enough evidence to show that sugar beet farmers are going back to beet production.

But, the private sector with its limited capabilities, cannot provide more than 30-40% of the total requirements for the two factories in Sulaimanyah and Mocsoul which necessitate the intervention of the public sector in this field to provide sugar beet from State farms.

VI. Problems Facing Sugar Cane Cultivation

Sugar cane is planted in a State farm annexed to Maisan Sugar Factory. It faces the following problems:

- 1.- Soil resalination due to inefficient drainage and/or water seepage from irrigation canals.
- 2 - Cane is a perennial plant so, its cultivation leads to the spread of weeds such as grass and wild reeds, which is difficult to control.
- 3 - Rainfall during harvest season which delays harvesting thus, influencing crop yields in following year.

These problems necessitate certain measures such as:

- 1 - Establishing good and efficient drainage systems.
- 2 - Using modern methods in weed control, i.e. effective pesticides.
- 3 - Establishing rural transport nets to facilitate access to farms and allow harvesting under different climatic conditions.
- 4 - Mechanization of different phases of agricultural practices.
- 5 - Increasing areas planted under sugar cane by establishing new farms using modern irrigation and drainage systems.

- 6 - Cultivating new varieties of cane which give better results under climatic condition of the region.

VII. New Sugar Projects in Iraq

Iraqi Government Planning Board approved the following projects:

- 1 - The Saneri farm in Shanederi in Sulaimanyah in the north region to produce sugar beet in order to cover the Sulaimanyah factory demand of raw materials. This project is under implementation and is expected to be completed soon.
- 2 - Aski Kalak farm in Aski Kalak, in the north region with an area of 20 thousand donoums to produce sugar beet that covers part of the Mosoul factory's demand. Implementation measures to prepare the land for cultivation is being carried out.
- 3 - A study is prepared for Calar farm in Sulaimanyah and Intisar farm in Neneva in the north region to produce sugar beet for both Sulaimanyah and Mosoul factories.
- 4 - Increasing sugar cane cultivation in Maisan in the south region to give a production of 400 thousand ton/annum to cover the needs of Maisan Sugar Factory. Studies are terminated and the project is under implementation.
- 5 - A study to establish an integrated project for sugar production in Maisan. The project is designed to use beet and/or cane. The concerned organizations in the Ministry of Industry and the Ministry of Irrigation are studying this project.
- 6 - Three integrated projects to produce sugar from beet (farm and factory) in Alishaki, Dujaila and Great Mussayah Projects in the central region at a productive capacity of 5000 tons of beet per day each.

These projects are at the study stage of the agricultural aspects.

Added to this, it has been decided to determine the feasibility of producing sugar cane and/or sugar beet in the large integrated agricultural projects of the public sector.

VIII. Production Estimates

After completion of the projects under implementation, it will be possible to provide the required raw materials (sugar cane and sugar beet) for the existing sugar factories (in Mosul, Sulaimanyah and Maisan), these factories will then work at full capacity. At the same time, it is hoped that new factories will also be established as the availability of raw materials warrant.

AA. Consumption and Production Equilibrium

Iraq is working to provide self sufficiency in sugar, which has the second demand after bread, by enlarging agricultural projects and providing the sugar production requirements of sugar beet in the north and central regions and sugar cane in the south.

Iraq is also encouraging the utilization of liquid sugar by enlarging its utilization in food industries, which seems to be a good method for using date sugar in local consumption.

