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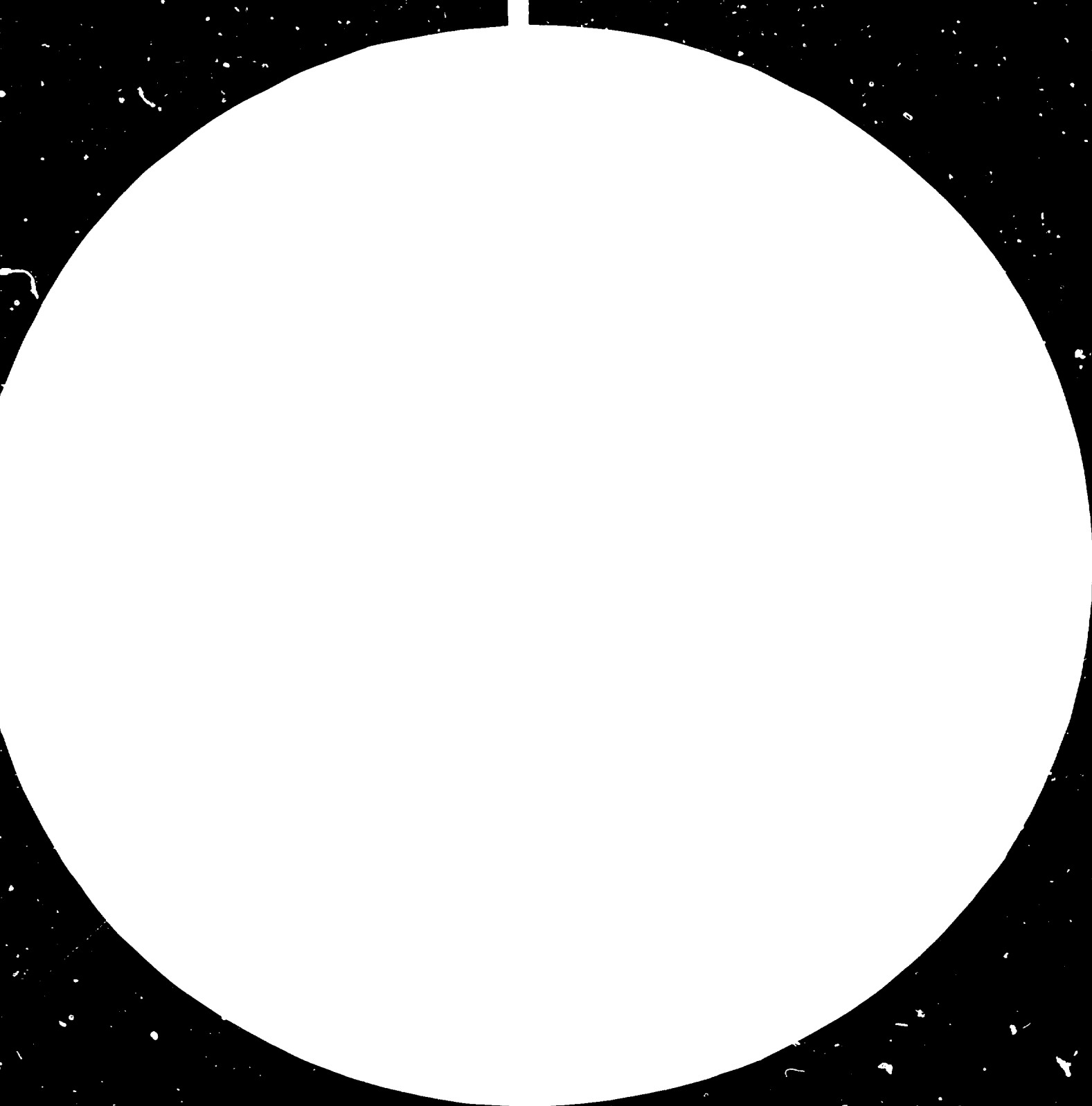
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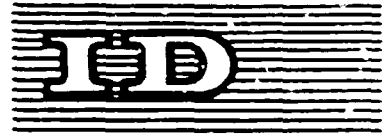


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DEVELOPMENT OF TRANSPORT, PACKING AND
STORAGE AIDS IN THE AGRO-INDUSTRY IN IRAQ

presented by the

Government of Iraq

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PREFACE

This document, Development of Transport, Packing and Storage Aids in the Agro-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 Revolution 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

DEVELOPMENT OF TRANSPORT, PACKING AND
STORAGE AIDS IN THE AGRO-INDUSTRIES IN IRAQ

Introduction:

Transport, packing and storage facilities have an important role in the development and progress of agro-industries, due to their supplying raw materials needed, distributing products to sales outlets and giving these commodities the suitable appearance that competes with the developed world. Furthermore, these facilities lead to enhancing the quality and taste, especially when it is known that agricultural products are very sensitive to natural conditions.

The Importance of Transport, Packing and Storage Aids

As mentioned previously, transport, packing and storing of goods have a crucial effect on the development of agro-industries. This can be evidenced by explaining the role of each of these facilities:

1 - Transport facilities

These include ordinary trucks, trailers, railroad crains and forklifts etc.

The need for raw materials and the distribution of agricultural products after processing require the provision of transport means mentioned above with suitable specifications to suit these products, keep their quality and avoid damage during transportation.

The unavailability of these means in sufficient numbers, leave agricultural products at their production areas, resulting to wasted products. This would mean double loss in the production and processing centers.

The provision of sufficient transport equipment with suitable specification is not enough without enlarging and improving rural road systems to connect agricultural production centers with processing centers and then the distribution of processed goods to the marketing centers.

2 - Packing

Processing agricultural products require packing materials for both raw materials and processed products.

3 - Packing Raw Materials

Distribution of processed products to the marketing centers require packing materials to package the products in a suitable way for the consumers. This packing is made in jars, glass bottles, metallic or plastic cans, wooden or plastic cases and other appropriate packages.

4 - Storage

Storage means to put agricultural products and agricultural processed products in special, suitable places in order to distribute these products whenever needed.

It is beneficial to mention here that storing in an unsuitable warehouse lead to their damage, which is a loss to the national economy. The importance of transport, packing and storage facilities in the development of agriculture and agro-industries could be summarized as follows:

- To encourage the development of agricultural sectors and increase the cultivated areas and capacity of agricultural lands.
- To substitute the import of agricultural products, and therefore save foreign currencies.
- To keep the quality of agricultural products and processed materials, and to give these products suitable appearance.
- To compete in the world markets whenever there is a chance to export.

Consumption Development of Packing and Wrapping Materials

The Republic of Iraq depends largely on importation of packing and wrapping materials and/or the raw materials needed to produce them.

There exist some projects either implemented or expected to be completed during 1980, to manufacture these materials either from local raw materials, such as the Petrochemical Complex in Basrah, and the State Enterprise for Glass and Ceramic in Ramadi, or from imported raw materials, such as paper pulp in the State Enterprise for Paper in Maisan, Basrah and the State Enterprise for Aluminum in Nassiriyah.

The total import of packing and wrapping materials increased during the period 1971-1978 by 656%.

Therefore, importation values increased during the same period by 522%.

The percentage of values of these materials changed during the period 1971-1978 as indicated below:

Paper	from 49.51%	to 14.41%
Metal	from 15.17%	to 10.13%
Wood	from 2.44%	to 1.92%
Plastic	from 6.55%	to 45.41%
Textile	from 8.93%	to 17.57%
Glass	from 17.34%	to 10.56%

Agro-industries depend on the following items for supplying their raw materials:

Jute	as bags
Plastic	as cases or plastic bags
Wood	as wooden cases
Paper	as carton boxes
Metallic plate	as vessels for fresh milk

Agro-industries pack their products in:

Plastic	as plastic bottles, boxes and cases
Paper	as paper wrappers, carton boxes
Tin	as tin cans
Glass	as glass bottles

Table (1) shows the relative importance of the consumed quantities of packing and wrapping materials for the years 1971-1978.

Table (2) shows the relative importance of consumption values for the same materials during the same period.

Table (3) shows the relative importance of the imported quantities of these materials for the years 1971-1978.

Table (4) shows the relative importance of the values of imported materials for the years 1971-1978.

Table (5) shows the values of the materials consumed in Iraqi Dinars for packing and wrapping materials in different branches of agro-industries during the period 1971-1978.

N.B. One Iraqi Dinar = US\$3.3

Table (1)

The Relative Importance of Consumed Quantities of Packing and Wrapping Materials for the Years 1971-1978.

Year	Paper	Metal	Wood	Plastic	Textile	Glass	Total
1971	77.09	8.09	1.44	0.74	5.76	6.84	100
1972	27.95	7.55	0.39	0.03	4.72	59.36	100
1973	55.07	26.53	2.42	1.42	6.62	7.94	100
1974	20.29	10.04	4.23	1.79	9.61	14.04	100
1975	52.62	21.92	2.42	0.94	8.43	13.67	100
1976	40.57	13.91	0.32	4.47	14.33	26.40	100
1977	14.53	4.50	9.16	35.93	4.68	31.20	100
1978	20.85	7.18	3.21	32.87	16.03	19.86	100

It could be seen that there is a decrease in the percentage of paper consumption from 77.09% to 20.85% during the years 1971-1978, while the percentage increased for glass consumption from 6.84% to 19.86%. Textile consumption increased from 5.76% to 16.03% and plastic from 0.74% to 32.87%. It could be said that the establishment of the Ramadi Glass Factory is the reason for the increase in glass consumption as a substitute for other packing and packaging materials. This is a positive aspect, and is in accord with the objectives of the development plans to utilize local packing and packaging materials instead of the imported ones.

Table (2)

The Relative Importance of Packing and Wrapping Materials Consumption
Values for the Years 1971-1978.

Year	Paper	Metal	Wood	Plastic	Textile	Glass	Total
1971	63.43	16.14	1.22	2.36	13.68	4.17	100
1972	22.02	7.88	0.03	56.51	11.02	2.53	100
1973	45.47	27.02	2.20	2.99	18.02	4.30	100
1974	55.26	15.12	3.93	5.15	14.90	5.64	100
1975	75.63	13.68	0.96	2.22	4.76	2.75	100
1976	32.76	16.05	19.60	5.94	8.29	17.36	100
1977	13.42	6.16	5.17	49.45	5.87	19.93	100
1978	13.81	9.71	1.84	43.53	16.85	14.26	100

An increase is noticeable in paper consumption from 63.43% to 75.63% during the years 1971-1975, then a decrease to 13.81% in 1978. Glass consumption values increased from 4.17% to 14.26% and this could be considered as a positive development and in accord with the national plans to increase the consumption of plastic and glass materials while decreasing paper consumption.

Table (3)

The Relative Importance of Packing and Wrapping Materials
Quantities Imported During the Period 1971-1978

Year	Paper	Metal	Wood	Plastic	Textile	Glass	Total
1971	11.21	12.31	8.25	9.75	18.68	62.80	100
1972	10.00	8.75	1.87	5.82	32.59	40.47	100
1973	11.73	1.25	11.90	3.56	27.92	38.64	100
1974	30.87	4.11	4.22	21.49	24.45	14.86	100
1975	25.32	10.88	7.01	24.66	16.13	16.00	100
1976	46.53	16.06	0.37	5.16	6.45	25.43	100
1977	16.43	5.07	10.35	40.60	5.28	22.27	100
1978	22.81	7.85	3.52	35.95	17.51	12.36	100

It is clear that imported glass percentage volume was at a very high rate, compared to total packing and wrapping materials, i.e., 62.80% during 1971, and decreased to 12.36% in 1978. This is due to the establishment of the Ramadi Glass Factory and consumption substitution. As for plastic, its rate increased from 9.75% in 1971 to 35.95% in 1978 due to its consumption increase which is the real development required.

Table (4)

The Relative Importance of Imported Packing and Wrapping Material
Values for the Years 1971-1978.

Year	Paper	Metal	Wood	Plastic	Textile	Glass	Total
1971	49.51	16.17	2.44	6.56	6.98	17.34	100
1972	31.32	10.43	7.69	21.92	16.65	11.99	100
1973	37.10	7.59	28.58	1.19	11.84	13.70	100
1974	20.91	9.70	8.46	30.32	21.32	9.29	100
1975	23.19	14.27	10.12	28.69	13.39	10.34	100
1976	33.32	16.34	15.96	6.04	8.43	19.90	100
1977	14.13	6.49	5.44	52.06	6.18	15.70	100
1978	14.41	10.13	1.92	45.41	17.57	10.56	100

It is noticeable that the value of imported paper in comparison to the total value of the imported packing and wrapping materials has decreased from 49.51% in 1971 to 14.41% in 1978. The reason for this is the local production of paper in the Basrah Paper Factory. The high increase for plastic from 6.56% in 1971 to 45.41% in 1978 is due to the increase in demand, inspite of the existence of some private sector factories.

Table (5)

The Values of Consumed Materials for Packing and Wrapping in I.D.*
in Different Branches of Agro-Industries and the Relative Importance
of the Utilization of these Materials.

Industry	1971	1972	1973	1974	1975	Relative Importance 1971	Relative Importance 1975 (%)
Dairy Product	137163	424854	560315	788892	1276951	1.9	3.9
Canned Food	298624	587439	657987	1093332	1390909	4.2	4.0
Oil and Fat	1223994	1136551	2207858	1624630	3245630	16.22	10.0
Dates	140759	13303	284611	765797	372969	1.9	1.0
Spaghetti	7098	8692	14840	16943	22805	0.09	0.07
Sugar	157460	298565	440179	410451	352359	2.3	1.0
Chocolates/Sweets	241576	619718	241079	264818	372557	3.14	1.0
Chewing Gum	102843	111194	120165	228180	338872	1.5	1.0
Liquorice/Salt	7248	7094	5047	11342	9446	0.9	0.02
Spices	unknown	unknown	unknown	unknown	6100	-	0.015
Fodder	6680		4490	5191	9262	0.08	0.02
Alcoholic Drinks	334918	358645	363844	482561	628432	4.6	2.0
Leather Products	112024	113792	86930	106571	163374	1.5	0.5
Cigarettes	382278	973123	900279	1332797	485945	5.5	1.0
Soft Drinks	330665	39450	unknown	702705	1313063	4.6	4.0

* I.D. (Iraqi Dinar)
One I.D. = U.S.\$3.3

National Production of Packing Materials

As mentioned previously, there are some completed projects, while others are under construction for the production of these materials.

We shall concentrate more on the production of packing materials than agro-industrial products, i.e.:

- Glass containers projects
- Plastic and carton boxes and containers projects

Glass Containers Projects

The State Enterprise for glass and ceramic produces glass bottles and cans for soft and alcoholic drinks, milk, tomato paste as well as ordinary glasses used for construction and home use.

The progress in the production of glasses from 1973 to 1979 is shown in the following table.

Table (6)

Year	Quantity (Tons)	Value in I.D.
1973/1974	5499	266770
1974/1975	4650	229957
1975 (9 months)	1499	160370
1976	3146	391057
1977	13794	966480
1978	14554	1164320
1979	12465	112185

Private Sector Projects

There are several private sector projects with primitive working systems which use broken glasses. Their productive capacity is about 2.5 bottles per annum.

Plastic Containers and Cases Production Projects

Listed below are the main establishments producing containers and cases.

- The National State Enterprise for Textiles
- The State Enterprise for Soft Drinks
- The State Enterprise for Vegetable Oils
- The State Enterprise for the Trade of Canned Food
- The Companies of the Private Sector

Table (7)

Kind of Pack	Unit	Years					
		1974/75	1975 (9 months)	1976	1977	1978	1979
Poly propylene bags	Ton	200	159	2505	2892	3028	3049
Bottles	Thousand	2183	2187	12504	55176	58216	49860
Cases	Thousand	916	1059	1047	1450	1850	2600

There is also a project for polypropylene bags in Tikrit which started producing in 1980, as well as enterprises for production of plastic cases which started production in 1978 with the capacity of (4) million cases per annum.

The Companies of Carton Packs and Cans

The main projects are:

- 1 - The State Enterprise for Paper in Basrah
- 2 - The State Enterprise for Vegetable Oils
- 3 - The Ahlyah Carton Company

Table (8) below, shows the development in production of materials for agro-industrial products.

Table (8)

Kind	Unit	Years				
		1972/73	1973/74	1974/75	1975	1976
Paper Packs	Ton	105	68	300	174	276
Carton Packs	Ton	144	186	437	189	172
Cases	Thousand Pieces	-	2153	4249	4125	7964
Cases	Ton	4480	5920	5450	4660	6750

There is also a project for carton box production which opens in 1980 in Maisan as well as the enlargements implemented to the Ahliyah Carton Company.

The Development of Storage Materials

The main way to keep the quality of agricultural products for direct consumption or for use by the agro-industries, is to store them in suitable climatic conditions. Any deviation from these conditions lead to damaging the products.

Below is a list of agricultural products that need cool storage rooms before and after processing:

- 1 - Fruits
- 2 - Vegetables
- 3 - Milk and its derivatives

The following products do not need cooling or freezing stores. They only require suitable ventilation and humidity.

- 1 - Oil seeds
- 2 - Tobacco
- 3 - Sugar

Notable developments were achieved in storage services. The storing capacity which was limited before 1968 was improved by the establishment of cooling, freezing and double-purpose stores. The number of cooling stores increased from 9 in 1976, with a capacity of 16013.7 tons to 42 stores in 1978 with a storing capacity of 45976 tons.

The number of freezing rooms increased from 7 in 1976 with storing capacity of 5464 tons to 14 in 1978 with storing capacity of 12200 tons. It is expected to further increase the number of cooling stores to 60 with the capacity of 300,000m³ during the year 1980 and beyond. The double-purpose stores increased as well and reached to 3 stores in 1978 with a storing capacity of 3197.7 tons. Cereal and rice stores increased from 7 stores in 1976 with the capacity of 162 thousand tons to 12 stores in 1978 with storing capacity of 212 thousand tons. Rice stores increased to 5 in 1978 with storing capacity of 8 thousand tons. In addition to that, 12 warehouses were built in 1978 for storing agricultural crops with a capacity of 246 thousand tons.

The Development of Transport System

Cooling transport system for agricultural products developed during the recent years. In 1978, it reached approximately 300 cooled and freezing trucks with a capacity of 5 to 20 tons each.



