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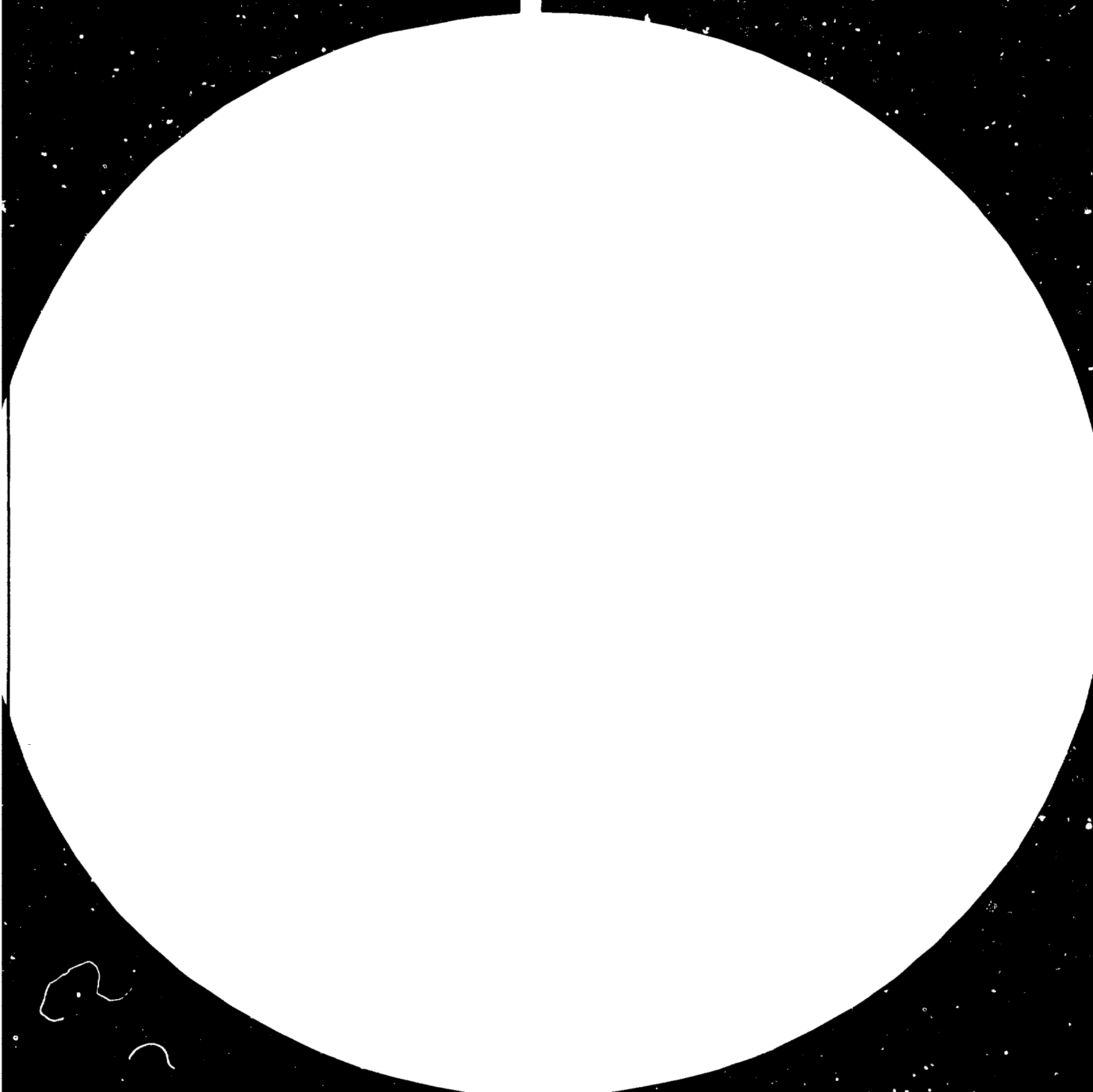

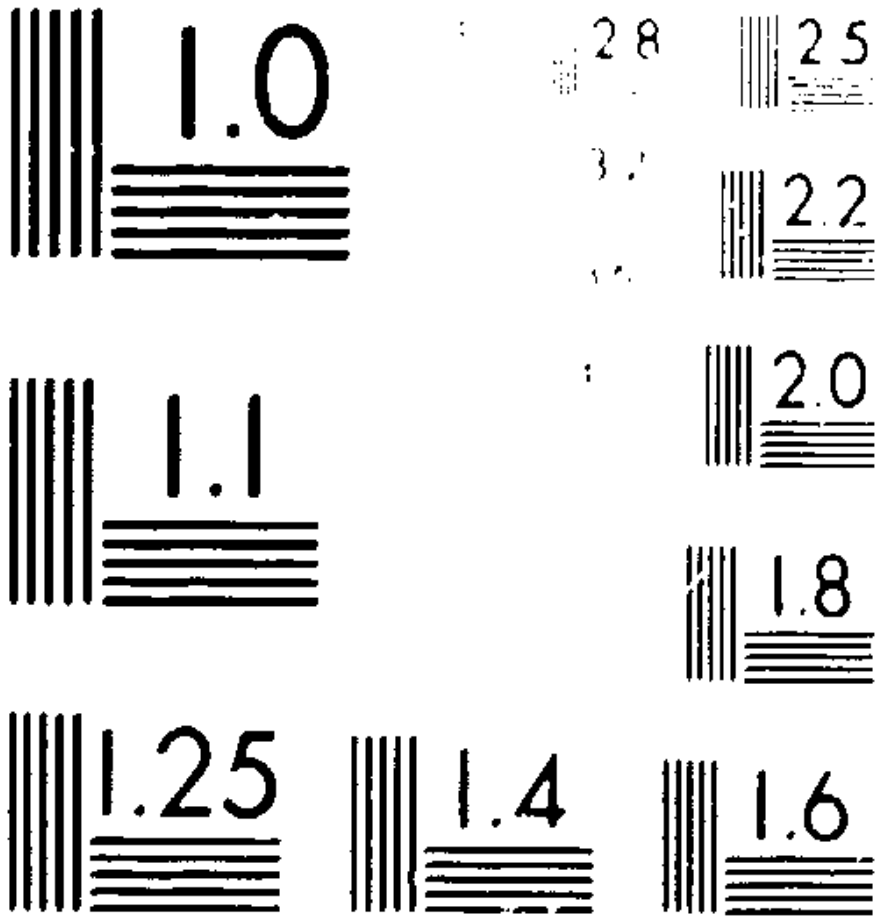
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DEVELOPMENT OF DAIRY INDUSTRY IN IRAQ

presented by the

Government of Iraq

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PREFACE

This document, Development of Dairy 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 suplementary 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 up-rising 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 circumstances 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 DAIRY INDUSTRY IN IRAQ

The Establishment of Dairy Industry in IRAQ

Until 1960 there existed only a few small factories which could not continue for lack of technical and financial potential available to their owners in the private sector as well as the scarcity of suitable milk for processing. Most plants were closed; the few which kept producing were specialized in yoghurt and ice cream, using methods and facilities far from those of modern industries.

In 1958 UNICEF participated in establishing the Abu Ghuraib Dairy Factory which started producing sterilized milk, cheese, cream and butter. Its production capacity did not exceed 20 tons/day of milk until 1970. During the ten years from then, some production lines were added to produce yoghurt , sterilized milk and ice cream, but only with limited capacities. The private sector factories continued at the same level establishing small factories with non-technical capabilities and closing others because of technical, and economic difficulties. Along with the Abu Ghuraib Factory, the socialist sector established four small factories in different governates with a capacity of one ton of pasteurized milk per year but they could not succeed in marketing their production, especially during the summer season, because of their limited facilities. Since 1970, the General Company for dairy products has reopened three of these factories after modernizing them and adding new production lines for sterilized milk, yoghurt and cream and providing them with fresh milk from the near collecting centres.

Generally, the expansions of dairy processing projects in Iraq during 1960-1970 were limited for the following reasons:

1. Low central financing for expansion of dairy processing projects.

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2. Difficulty in obtaining additional quantities of fresh milk for supply to factories, which was due to the following main reasons :-

2.1 milk collecting centres were too few;

2.2 animal locations were scattered in the rural regions and the transport system was inadequate;

2.3 low productivity of milk animals because of negligence in improving them, of deseases and of pour nourishment;

2.4 non-existence of stimulating measures for farmers, supporting the production of fresh milk and its supply to factories.

3. Quantitative and qualitative weakness of technical cadres, which did not encourage the expansion of dairy projects.

4. Low buying capacity of consumers, causing difficulties for larger marketing.

5. Reluctance of consumers to pay higher prices for processed products.

Generally, the available capacities for dairy processing in IRAQ during the period 1960-1970, for collecting and cooling of fresh milk in collection centres and its processing in productive factories, were as follows:

1. Fresh Milk : During the first phase, dairy industry depended on fresh milk provided from the neighbouring farms. Most of that milk was from buffalos which is characterized by its high content of fat in comparison to cow's milk. The biggest concentration of these animals was found in the white gold village, near the Abu Ghuraib dairy factory. As for the prices paid to milk providers, they depended on the fat percentage in the milk, in accordance with special schedules agreed upon. But milk quality, protein percentage and solid non-fat contents were not taken into consideration.

2. Production lines: The main production lines during 1960-1970 were those provided for the Abu-Ghuraib factory together with the pasteurized milk lines provided to dairy factories in the governates. The state of these lines were as follows:

2.1 Abu Ghuraib Factory: Milk processing lines were of limited capacities, but the production was sufficient for the market demand, though not for all consumers; the general low buying capacity affected the factory production and marketing. Their prices, at that time, were higher than the prices of local substitutes. Sometimes the State Company refused to accept higher quantities of milk or took it only on the basis of its cream value without paying for the value of the skimmed milk. This had bad effects on the welfare of producers of fresh milk. The State Company's reasons for this attitude were their difficulties in selling liquid milk; and yoghurt production lines, which absorb excess qualities of milk, were not yet established. The company used to separate cream and butter and either returned the remaining liquid milk to the farmers or destroyed it.

2.2 Governates Dairy Factories: Some governates were supplied with small dairy factories originally planned to produce pasteurized milk and other dairy products, e.g. butter and cream. Their milk production capacities were one ton/day each. Three of them started production with limited capacities, but the facilities provided from their production were neither sufficient from the production nor from the quality point of view. From this experience, one can define the major factors which caused their failure as follows:

1. The country had no previous experience in producing and marketing pasteurized milk;

2. there were no means of cold-storage transportation for the distribution of pasteurized milk and other products;

3. skilled manpower was scarce both - quantitatively and qualitatively, and the level of managerial skill was low;

4. while the supply of fresh milk from the neighbouring regions of factories was too low, there were no appropriate means to collect the surplus from the rural regions.

As a result these factories stopped production until the State Company for Dairy Products started their production again after modernizing them, adding new production lines and supplying them with modern machines as well as with trained technicians.

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Development of Dairy Industry after 1970

After 1970, the pressures and effects of the development plans caused a growth in the population's income. This entailed an increase in the demand on consumer goods in general and on food-stuffs in particular. This effect was particularly noticeable with dairy products, meat and eggs and stimulated production and manufacturing establishments to enlarge their production lines and to search for additional sources of raw materials.

The effect of these developments on the dairy industry was remarkable. The State Company for Dairy Products carried out its expansion under the slogan of collecting and processing the largest quantities of fresh milk to achieve the short and long term goals in satisfying local demand.

In order to achieve the short-term objectives, the exploitation of available productive capacities was maximized and most production lines were operated at three shifts/day. The most important aspect in this plan was the need for the procurement of additional quantities of fresh milk. For this purpose the company undertook concentrated efforts by enlarging collecting and cooling capacities in the collecting centres and establishing new centres, so that the quantities received of fresh milk increased by more than 100% during the period 1972 - 1973 compared to 1970. The factory's production was accordingly doubled and for some products even tripled.

Upon reaching the maximum capacities of production lines the demand kept increasing and the State Company presented a long-term expansion plan based on feasibility studies, including market surveys, on the estimate of future needs within the frame of the expected increase of annual consumption and a complete survey on the national potential of livestock (number and breed) with the expected

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production of fresh milk in different regions of the country. These studies were carried out as follows, by national scientific committees with representatives of the Ministries of Planning and Agriculture, the Baghdad University and dairy industry experts from the State Company of Dairy Products:

1. New Abu Ghuraib Dairy Factory in Baghdad.

A specialized technical committee was established to prepare a feasibility study on the establishment of an aggregate dairy factory in Abu Ghuraib with a capacity to process 300 tons/day of fresh milk, thereby raising the total production capacity for different dairy products to about 500 tons/day. This expansion process was accompanied by the addition of further milk collecting centres for the provision of fresh milk.

2. South Region Dairy Products.

Following the country's plan to geographically decentralize industry to cover all regions, and in order to profit from the fresh milk available in the south region (known for raising buffalo herds) various dairy enterprises were established in this region, i.e. several milk collecting centres and three processing factories, located in areas with a particular high number of milk animals such as Basrah, Nasiryah and Amarah. The production capacities of these factories range from 20-100 tons/day. In one of these factories (Basrah), sterilized milk is being produced in Tetra-packs for the first time. Along with these factories, 7 milk collecting centres are established. These projects have been operational since last year.

3. North Dairy Project.

This project is located in Mosoul with a designed capacity of 40 tons of fresh milk to produce sterilized milk in glass bottles together with other dairy products. Four milk collecting centres were connected to this factory, which was completed in 1976.

4. Governates Dairy Factories.

In 1960, four small factories were established for the production of pasteurized milk and other products. These factories were managed by local authorities, but because of the reasons stated before, these factories could not continue their operation until they were bought in 1970 by the State Company for Dairy Products, renovated, including the installation of modern production lines and machinery. They are now supplying the neighbouring markets and absorbing fresh milk from the surrounding region. The annexed schedules show the capacity of each of the factories in Basrah, Amarah, Karbala and Arbil.

5. The 1974-1979 Five-Year Plan for Dairy Projects.

In addition to the studies for the 1974-1979 five-year development plan the Ministry of Industry and Minerals conducted detailed feasibility studies on the available fresh milk potentials in the country. These studies surveyed the number of milk animals, such as buffalos, cows and sheep, their locations in all governates of the country, and their average annual milk production. The locations and capacities of milk collecting centres, the suggested processing factories and all existing and planned factories were also surveyed. In accordance with these studies most factories and collecting centres were proposed and agreed upon. Some are already operational, others are under construction. The annexed tables give detailed information on projects and expansions either implemented or under construction both for collecting centres and for processing factories (location, full capacities and production).

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Motives and Factors of Dairy Industry Development in IRAQ

Industrial Development is affected by motives and encouraging factors to stimulate this development, either being the pressing factors of consumption demand or being development factors to accompany the general national development plan for economic projects of the country, or other factors which are enforced by the interaction of development requirements of projects and integrated sectors or similar aspects in certain phases.

Development plans after the revolution have included all economic activities in the country and special importance has been given to dairy industry, due to its direct effects on nutrition programmes, general health and production capacity of the population.

The main factors and conditions which helped the development of this industry are:

1. The increased knowledge of health measures along with the increase in the buying capacity due to national development plans which in turn increased the demand on processed dairy products and caused scarcity of these products in local markets in spite of doubled production.

2. Large development projects for fresh milk collection and processing were included within the National Development Plans.

3. Specialized agricultural projects were started for cow raising in order to provide fresh milk to the factories.

4. The increase in quantities of fresh milk received in collecting centres in the rural regions has encouraged the establishment of big dairy projects in different parts of the country.

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5. The increase in specialized technical cadres in dairy industry, who had attended specialized studies at universities as well as training programmes during the projects' construction period.

6. Low prices of processed dairy products in comparison to local products due to the socialist sectors' support by the government.

7. Economic support policy of the government to fresh milk producers during the past years. This support consisted of large subsidies from the national budget, through decreasing the fodder prices supplied to producers and increasing the prices of fresh milk.

The Country's Experience in Establishing Milk Collecting Centres

At the beginning Dairy Industry in IRAQ depended on four collecting centres established at animal concentration sites in Baghdad. These establishments and their specific collecting and transporting operations will later be described in detail.

After 1970 and during the phases of preparing studies on expanding production capacities for dairy factories, either by increasing the existing production lines or by establishing new lines and factories, it became necessary to consider measures for supplying these additional capacities with its required fresh milk to ensure their production.

There were two methods to satisfy the increasing need of factories for fresh milk. The first one depended on the natural capacity of livestock in the country through encouraging and stimulating these capacities to produce fresh milk and to double the scientific efforts to collect this fresh milk from different parts of the country. The second method depended on imported dried milk. Naturally the first method was considered best since it supported the productive capacity of local livestock and ensured supplying processing factories with fresh milk and did not leave them at the mercy of fluctuations and problems of foreign trade effected by international problems of food scarcity. Therefore, the State Company applied the first method in its expansion plans, i.e. to depend on the national potential in producing fresh milk at present and in future. For this reason, technical committees were established to survey most agricultural regions known for raising livestock. On the other hand, dried milk would be used as a limited substitute to cover the gaps during scarcity seasons and to increase the rate of solid particles in some milk products such as yoghurt and ice-cream.

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From the experience of the State Company in establishing new collecting centres for fresh milk, the main information needed for the surveys, which would be used in evaluating the major requirements for the establishment of collecting and receiving centres in any region, could be summarized as follows:

1. Number and kind of milk animals in each region.
2. Productive capacity of milk animals in the region.
3. The concentration of animal colonies and involved distances.
4. The expected surplus of produced milk for supply to the center.
5. Transport possibilities in the region.
6. Suggested locations of centres and their distances from animal concentration areas and from factories.
7. Distance of animal locations from local markets.
8. Marketing of products in neighbouring markets.
9. Local abilities to provide instructions and assistance in developing milk animal raising systems and in increasing the productive capacities of these animals.
10. The socio-economic level of each region.

After surveying and gathering the necessary information, the present and future available capabilities were evaluated and the required capacities of the suggested centre were determined, together with full specifications for systems, machines and buildings and the appropriate locations were selected after ensuring the following main conditions:

1. Availability of water and electricity.
2. Nearness to milk producing regions.
3. Nearness to transport nets.
4. An unpolluted location.

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After applying this method, the State Company during 1970 - 1980 enlarged and established 40 collecting centres for fresh milk with different capacities, compared to only four centres in the whole country before. The annexed tables at the end of this paper show the existing and proposed collecting centres.

Fresh Milk Collecting and Transporting Systems

The State Company for Dairy Products applies the following system for transporting and collecting fresh milk at its centres:

1. The Company provides each producer who is willing to sell his milk to the centres, with a number of milk containers sufficient to transport his product. A contract is signed between the two parties to control the conditions which ensure producing and supplying clean and good quality milk from healthy animals.

2. The producer transports the milk to the centre immediately after the milking.

3. Supplied milk is accepted after careful examination, selection and quality control. Samples are taken for quality control and pricing purposes.

4. Milk which is not satisfying the quality requirements, is refused. Upon repeated refusals, the contract will be cancelled.

5. Received milk is immediately cooled to 1-3^{o}C in a plate heat exchanger and kept in cooled stores.

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6. Cooled milk is transported to neighbouring factories by insulated tank-lorries.

7. Prices depend on the contents of fat in the supplied milk after considering its quality, and according to price schedules agreed upon between the two parties. Milk is paid for weekly to producers.

Milk Wealth Characteristics during the Past Two Decades in IRAQ

We will present the main characteristics of milk wealth in IRAQ during each decade, analyze them as well as the possibility of profiting from them and their effects for similar projects in other developing countries, evaluate their importance and meaning as feasible means and measures to support the implementation of the national development process.

First: The period 1960 - 1969:

1. No adequate statistics were available with regards to kinds and numbers of milk animals in IRAQ due to them being scattered all over the country and due to bad transport systems in the rural regions.

2. Available statistics during this period proved the existence of high numbers of milk animals in IRAQ, but local survey results showed that fresh milk quantities were not encouraging to establish more dairy projects generally, and collecting centres specifically.

3. Demand on milk was limited to children and sick people. As a result, the collecting centres were obliged to buy fresh milk according to its cream only during certain periods.

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4. The low buying capacity of the population favoured the supply on demand, in spite of the limited production, which caused a decrease of local dairy products prices and kept the prices of processed milk products relatively high.

5. Most consumers were not aware of these products' importance. This prevented them from buying sterilized dairy products, which were sold at relatively higher prices than their local substitutes.

6. For the reasons mentioned in (4) and (5) above, and because of the limited production capacities of the existing factories during that period, fresh milk supplied to collecting centres sometimes surpassed their capacity, so that they were obliged to refuse supplies, which in turn affected the welfare of suppliers.

7. Development plans for dairy projects did not include large-scale factories, and the existing factories were content with the fresh milk supplied from their collecting centres and did not encourage the establishment of additional collecting centres for more fresh milk.

8. Low productivity of milk animals due to poor breeding, deseases and malnutrition among animals.

9. The non-existence of stimulation or economic policy to support fresh milk production.

10. IRAQI people are used to the consumption of yoghurt, which helped farmers to store and market their production of milk during summer seasons by fermenting it, using simple methods in production and marketing.

11. Milk collecting centres used to depend on animal concentrations located near Baghdad, which affected the nature of this industry and its capacity in the country through the following main characteristics:

11.1 The majority of milk animals near towns consisted of buffalos. Therefore buffalo milk, which has a high fat rate, was appropriate to produce local white cream with 61% of fat.

11.2 Due to animal concentrations being close to collecting centres and factories, quality problems were rare and fresh milk was scarcely refused because of bad quality.

11.3 The average quantity of supplied fresh milk was high because these farmers owned more animals than those in rural regions; they were specialized in raising milk animals only, which facilitated a quick supply operation as well as the good quality of their supplied milk.

11.4 Due to short distances between suppliers and collecting centres and the easiness of the supply operation, no agents were introduced in this operation which, if it happened, affected the quality of supplied milk.

11.5 Producers at the animal concentrations near the towns depended on buying concentrated ready fodder or green fodder which caused an increase in production costs, therefore producers demanded continuously to raise prices for fresh milk supplied to the centres.

11.6 In some animal concentrations located near the markets certain producers used to sell their products directly to local markets during scarcity seasons at higher prices, which caused fluctuations in the quantities supplied to the centres and therefore during some seasons their production capacity was not fully utilized, while during other periods there were points of congestion.

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11.7 It was easier to apply policy instructions and veterinary care with producers in animal concentrations than with those scattered in rural regions.

Second: The period 1970 - 1979.

1. The availability of reliable data on kinds and numbers of milk animals in the country. The 1976 statistics of the Central Statistic System included data and information more adequate and realistic than any other.

2. Results obtained from the surveys proved that available quantities of fresh milk in IRAQ were very encouraging to establish more dairy projects in general and receiving and collecting centres in particular.

3. Demand on liquid milk was increasing continuously, and in spite of production increase, the market suffered sometimes from scarcity of these products because of the increasing demand. Moreover, factories established big production lines for yoghurt which absorbed large quantities of liquid milk. Factories therefore prefer to receive cow's milk which permits more production of sterilized milk and yoghurt, and less butter production.

4. Increasing income of the population favoured the demand on dairy products and, in spite of doubled gross production this caused price increases of local products compared to prices of processed products, which were kept low as a result of economic support to the socialist sector.

5. The growing public awareness of health measures resulted in an increasing demand on dairy products and a gradually decreased demand on locally produced products, which were processed with primitive methods.

6. After increasing the production capacities of existing factories and the establishment of new ones, the quantities of fresh milk supplied to the old and new collecting centres became insufficient to cover the factories' production capacities and the growing demand especially during the seasons of milk scarcity, so that the factories were obliged to import considerable quantities of milk powder.

7. Development plans included enlargements of dairy projects and their implementation.

8. The productivity of cows increased through applying scientific breeding methods. Most farmers produce and supply fresh milk to collecting centres in an economic and commercially planned way, after having been used to supply the irregular surplus of fresh milk.

9. The government provides economic support to encourage the production of fresh milk to be supplied to the factories; f.i. animal raisers are supplied with suitable quantities of concentrated fodder at low prices according to the quantities of fresh milk supplied to factories by them.

10. IRAQI Markets consume huge quantities of yoghurt, which encouraged dairy factories to establish large production lines for yoghurt by using milk powder. It is worthwhile to mention that this product is the reason of success of the private sector during the last decade, while it failed before.

11. After the establishment of many collecting centres in different farms and rural regions with different conditions than those near towns and factories, many factors affected the ability to profit by the milk wealth, which could be stated as folows :

11.1 The rate of buffalo milk is decreasing and cows are the main source of milk supply from rural regions to factories.

11.2 Due to the scattered locations of animal raisers in the rural regions, the quality of supplied milk deteriorates sometimes during long-distance transports from production points to collecting centres, which causes the refusal of large quantities because of high acidity and bad quality.

11.3 Usually animal raisers in rural regions own small herds; quantities of supplied milk are small and the number of suppliers is large, therefore one ton of fresh milk is supplied by several producers and needs doubled efforts during receiving, examining, analysing and payment operations.

11.4 Producers which lived far from collecting centres, could not afford to bear transport costs separately, therefore collecting agents undertook to collect fresh milk from the distant farms. The result was that non-cooled fresh milk from different sources and origins was mixed and unavoidably caused degraded quality of milk, which was collected and transported for long distances without cooling.

11.5 Rural producers depended on locally produced fodder from their farms at lower cost than concentrated fodder, and their milk production costs are lower than those of the animal concentration centres near towns.

11.6 The distant location of rural producers from town centres results in a more stable connexion with collecting centres and in less fluctuation of quantities supplied to each centre during the seasons and creates an opportunity to plan a more stable production.

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11.7 Applying a policy of instructing and veterinary care is difficult because milk animals are scattered in the rural regions and needs more efforts than applying measures of this policy in the animal concentration locations near towns.

Fresh Milk Collecting Units

During the last two decades, dairy industry in IRAQ was based on establishing big collecting centres of the capacity of 10–60 tons/day of fresh milk. These centres receive and cool supplied milk from nearby animal concentrations. Although this method covered to a large extent the needs of existing factories, some regional characters and conditions affected the activities of the collecting system and the quality of supplied milk. Some of these conditions and problems have been stated before, such as the low capacity of the distant rural producers to supply good, clean milk because of the lack of abilities and measures to produce, cool, store and transport the production to the distant centres. This causes a deterioration of the milk quality during processing, handling and transporting, particularly during the hot summer season and the rainy winter.

As a result of the defects of the system of big collecting centres and its affect on the possibility of applying quality control measures on supplied milk, the idea of small collecting centres for fresh milk to be scattered in the rural regions was studied and the state company prepared a feasibility study to implement this new method.

These units consist of cooled basins with a capacity of 1-5 tons of fresh milk. These basins are either stationary or movable and can be installed near milk producers or near main roads leading to the main collecting centres or processing factories to facilitate the operation of transporting fresh milk to these units.

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Fresh milk is cooled until the arrival of tank lorries which transport these quantities from the units to the factories or to the main collecting centres. These have the necessary installations to receive and examine the milk and also the cleaning facilities. These collecting units have certain characteristics affecting the operations of milk transport and supply, such as:

1. The close distance between milk producer and collecting unit.

2. Low cost of milk marketing to both producer and factory.

3. Low construction cost compared to constructing big collecting and cooling centres, for these units are provided with simple machines and small building areas.

4. The possibility to rely on agricultural co-operatives to manage these units.

5. The possibility to use these units to collect and handle milk in the rural regions for one or two days, after cooling it, as needed.

...../21 (table)

Past, actual and future Dairy Projects in IRAQ

First: Factories:

Production capacity for two working shifts-ton.

Before 1970	fresh milk ton/day	Pastas Milk	Yoghurt	Butter	Cream	Cheese	Ice-cream
- Abu-Ghuraib	100	48	10	2	2	3	6
Actually Producing							
- Abu-Ghuraib	450	160	80	14	10	32	50
- Mosul Dairy f.	40	20	10	--	1	1.4	5
- Basrah	70	40	20	--	2	1.4	--
- Karbala	70	40	20	--	3	1.4	--
- Arbil	10	--	10	--	1	---	--
- Amarah	10	--	10	--	1	---	--
Actual Capacity	650	260	150	14	18	36.2	55
Factories Under Construction							
- Nassiriyah	40	-	-	-	3	4	-
- Tikrit	60	40	20	-	2	-	-
- Mekdadyah	60	40	20	-	2	-	-
- Diowanyah	130	80	40	-	4	-	8
Total capacities till the end of 1981	940	420	230	14	29	40.2	63
Suggested factories							
- Wasit	250	160	80	-	8	-	-
Total capacities	1190	580	310	14	37	40.2	63

Second: Milk collecting centers:

Center	Governate	Planned capacity ton/day	Quantity collected ton/day
Before 1970			
- Abu-Ghuraib	Baghdad	40	30
- Fudailyah	=	40	30
- Al-Hasswa	Babil	20	15
- Big Mussyab	Babil	5	15
Total Capacity		105	80
Existing Centers			
- Abu-Ghuraib	Baghdad	60	55
- Fudailyah	Baghdad	40	40
- Al-Madain	Baghdad	40	7
- Al-Rashdyah	Baghdad	20	10
- Al-Yousoufyah	Baghdad	40	20
- Al-Tarmyah	Baghdad	20	12
- Al-Haswa	Babil	40	35
- Big Moussyab	Babil	40	35
- Al-Hindyah dam	Babil	20	14
- Al-Hillah	Babil	20	8
- Bakouba	Diala	40	6
- Khanakin	Diala	20	4
- Al-Faloja	Al-Anbar	40	27
- Al-Diwaniyah	Al-Khadisyah	20	8
- Kmait	Missan	20	7
- Al-Amarah	Missan	20	13
- Al-Hay	Wassit	20	10
- Al-Sowayrah	Wassit	20	9
- Al-Hossaynyah	Karbala	20	12
- Badosh	Ninawa	20	8
- Al-Hamdanya	Ninawa	20	-
- Smail	Duhok	20	8
Total		620	348

Centers under construction

	Governate	Collecting capacity ton/day
- Al-Zaidan	Baghdad	20
- Al-Azair	Missan	20
- Al-Korna	Basrah	40
- Al-Hartha	Basrah	20
- Al-Shatra	Zikhar	20
- Zouk Al-Shiouk	"	20
- Al-Ramadi	Al-Anbar	20
- Al-Abassyah	Al-Najaf	20
- Abi-Skhair	"	20
- Al-Numanyah	Wasit	20
- Samara	Salah Aldin	20
- Tikrit	"	20
- Al-Mikdahyah	Diala	20
- Baladrouz	"	20
- Sumer	Al-Kadisyah	20
- Ghamas	"	20
- Al-Rumaitha	Al-Muthana	40
- Al-Ryadh	Al-Tamim	20
- Receiving line in Nassiriyah Factory		10
Total		410

Suggested Center	Governate	Collecting Capacity
- Al-Shirkat	Nenawa	20
- Al-Fohoud and Hammar	Zikar	20
- Al-Tar	"	20
- Al-Rifai	"	20
- Al-Kala'a	"	20
- Al-Madhatyah & Shamyah	Babil	20
- Al-Falahyah	Wasit	20
- Al-Zubaidyah	"	20
- Chaik Saad	"	20
- Al-Shomali	Babil	20
Total		200

Third: Agricultural projects for fresh milk production
Agricultural projects under construction and suggested.

	Project	Capacity ton/day
1.	Al-Sowairah	10
2.	Al-Ishaki	10
3.	Al-Mussayab	10
4.	Al-Wihda	10
5.	(7) Nissan	10
6.	Al-Dujaila	40
7.	Al-Khalis	10
8.	Shahrzor	10
	Total Capacity	110

Suggested livestock projects in the governate to supply dairy factories with fresh milk.

1. A project in Duhok Governate.
2. A project in Nineva " .
3. " " " Tamim " .
4. " " " Sulaimanya " .
5. " " " Salah Eldin " .
6. " " " Al-Muthana " .
7. " " " Zikar " .
8. " " " Al-Anbar " .
9. " " " Arbil " .

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