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TO MY PARENTS

AGRICULTURAL MARKETING IN IRAQ  
(An analysis of the variety of factors and processes  
underlying the marketing of Iraqi agricultural  
produce, with emphases on  
the potential for improving the marketing  
infrastructure)

by

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Thesis submitted to the Faculty of Science,  
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Degree of M.Sc.

University of Durham, England  
June, 1985

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Thesis  
1985 / ALN

ABSTRACT

Agricultural marketing in Iraq has witnessed major changes over the last three decades, and particularly during the 1970's, due to structural and distributional changes in both production and consumption as a consequence of the effect of market forces upon production and an increase in demand. Therefore, agricultural marketing in Iraq is faced with several problems. On the one hand these problems are caused by the continuing increase in demand as a result of the increase in population numbers partly due to natural increase and partly due to (temporary) foreign immigration and the relative increase in per capita income which has improved the purchasing power of the people, all of which have led to a growth in demand ahead of improvements in agricultural production and distribution. On the other hand, are the problems directly related to the physical geographical conditions of Iraq, to the past and present marketing systems and to the locational distribution of the areas of production?

All these factors have imposed great pressures on the marketing system, which at the same time that it has become more government-controlled, has also had to come to terms with an increasing percentage of consumers who are entirely dependent upon the system for the supply of their needs, and a diminishing number of producers who need to be encouraged, above all by better price incentives, to be more efficient crop growers and animal raisers.

The current system has kept pace with neither the general increase in demand, nor the further demand that most products be available all the year round. Therefore, this study aims to analyse the variety of factors and processes underlying the marketing of Iraqi agricultural produce, with emphasis on the spatial patterns and the potential for improving the infrastructure and managements.

ACKNOWLEDGEMENT

During the preparation of this thesis I have been grateful for the assistance of my supervisor, Mr. M.P. Drury, for his constructive help, guidance and continuing encouragement throughout the period of my study. Much of the value and significance of this work is derived from his advice and suggestions. I would also like to thank Professor H. Bowen-Jones and Mrs. D. Clarke for their comments.

My sincere thanks also go to the members of the staff and the postgraduate colleagues in the Geography Department of the University of Durham for providing a pleasant atmosphere through their help and kind treatment, which enabled me to complete this study. In addition, I am greatly indebted to the staff of the libraries of Geography, Science and Oriental Studies, as well as to the staff of the Centre for Middle Eastern and Islamic Studies, Durham University for their help and also to Mrs. M. Bell for typing this thesis.

I am indebted to the Ministry of Agriculture and Agrarian Reform in Iraq for financing the study. My sincere thanks to several friends in Iraq, particularly Mr. H.A. Abbas, without whose constructive help I would not have been able to obtain some of the crucial data for this study.

My thanks go to my mother, and to both my brothers, Akram and Farook, for their support and encouragement, which I have greatly appreciated, and also to my sisters.

Finally, I would like to thank my wife Intesar, whose long-suffering understanding has been of such help and encouragement during the period of my work.

ABBREVIATIONS

A.M.A.	Agricultural Marketing Administration
C.B.C.	Country Branch Committee
C.D.A.	Cotton Development Administration
D.F.	Dairy Factory
F.C.	Fodder Company
F.T.C.	Food Trade Company
G.R.A.	Grain Regulating Administration
G.U.C.	General Union of Co-operatives
I.D.A.	Iraqi Date Administration
L.C.	Local Committee
M.C.	Marketing Centre
M.O.	Maize Organization
T.R.B.	Trade Regulating Board
U.C.	Union Co-operatives, or Local Union of Cooperatives
V.O.F./A.	Vegetable Oils Factories/Administration

CONVERSION FACTORS FOR IRAQI DATA

One donum = 2500 sq. metres.

One metric ton or (tonne) = 1000 kilograms = 2200 pounds

One Iraqi Dinar (ID) = 1000 Iraqi Fils (IF)

CONTENTS

	<u>Page</u>
Abstract .....	i
Acknowledgements .....	ii
Abbreviations .....	iii
Contents .....	iv
List of Tables .....	viii
List of Figures .....	x
Introduction.....	1
The background .....	1
The objective .....	5
The sources .....	6
The format .....	7
<u>CHAPTER ONE</u> : <u>AGRICULTURAL MARKETING PROBLEMS IN IRAQ</u> .....	10
The main agricultural marketing problems in Iraq .....	14
1.1 Transportation .....	14
Cereals .....	15
Fruit and Vegetables .....	18
1.2 Storage facilities .....	19
1.3 Output losses in the marketing process .....	21
Potatoes .....	26
Tomatoes .....	35
1.4 Cleaning, grading, classification and packaging .....	39
1.5 Conclusion .....	41
References .....	47

	<u>Page</u>
<u>CHAPTER TWO</u> : <u>METHODS OF AGRICULTURAL MARKETING IN IRAQ</u> ...	48
2.1 The marketing process involving the private sector .....	48
2.2 Developments in agricultural production in Iraq .....	53
2.3 Iraqi State Organization which deals with the development of agricultural products .....	54
2.4 Aspects of pricing policy and subsidization..	59
2.5 The structure of agricultural products and foodstuff pricing .....	62
I. Fruit and vegetables .....	64
II: Livestock products .....	65
2.6 Marketing policy and practice for selected agricultural categories .....	66
2.6.1 Fruit and vegetables .....	66
2.6.2 Cereals .....	68
The co-operative marketing of cereals	70
Voluntary stage .....	70
Compulsory stage .....	72
Maize .....	77
2.6.3 Lentils and Chick Peas .....	78
2.7 The marketing of industrial crops .....	83
Oil seed .....	85
Tobacco .....	87
Canning and processing of fruit and vegetables .....	88
2.8 Conclusion .....	90
References .....	93

	<u>Page</u>
<u>CHAPTER THREE</u> : <u>THE VOLUME OF MARKETED AGRICULTURAL PRODUCTS</u>	94
3.1 Cereals .....	99
3.2 Fruit and vegetables .....	113
3.3 Conclusion .....	122
References .....	126
 <u>CHAPTER FOUR</u> : <u>THE MARKETING OF DATES</u> .....	 128
4.1 Introduction .....	128
4.2 Production of dates (The date yield) .....	129
4.3 The income from producing dates .....	135
4.4 Consumption of dates .....	142
(a) Fresh and packaged dates .....	142
Domestic human consumption .....	143
4.5 Packaging .....	148
4.6 Date processing .....	150
4.7 The export of dates .....	154
Geographical destination of dates exported from Iraq .....	 164
4.8 Conclusion .....	170
References .....	174
 <u>CHAPTER FIVE</u> : <u>LIVESTOCK MARKETING</u> .....	 176
5.1 The role of the Iraqi livestock sector .....	177
5.2 Domesticated animals and the effect of market on their respective distributions.....	 178
5.3 Animal foodstuffs.....	182
Fodder marketing .....	184

	<u>Page</u>
5.4 Marketing of live animals .....	185
5.5 Meat marketing .....	189
5.6 Dairy product marketing .....	197
Methods for the distribution and sale of milk and its by-products .....	198
1. Direct selling from producer to consumer .....	198
2. The use by producers of grocers as middlemen .....	199
3. Use of central depots .....	199
4. Collection centres for receiving milk from co-operatives .....	201
5.7 The marketing of non-comestible livestock by-products .....	203
5.7.1 The marketing of skins .....	204
5.7.2 Offal marketing .....	205
5.7.3 Wool marketing .....	205
5.8 Poultry marketing .....	213
5.9 Fish marketing .....	220
5.10 Conclusion .....	226
References .....	229
<u>CHAPTER SIX</u> : <u>CONCLUSION</u> .....	231
<u>BIBLIOGRAPHY</u> .....	243
<u>APPENDIX</u> .....	249

LIST OF TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
1.1	Distribution of population between rural and urban centres in Iraq for selected years .....	13
1.2	Wheat and barley distribution : shortfall in State capacity .....	16
1.3	Potato import and production data .....	27
1.4	Potato losses during transportation to wholesale markets .....	30
1.5	Potato output losses at the wholesale markets .....	31
1.6	Potato output losses at the retailing stage .....	32
1.7	Output losses for potatoes .....	33
1.8	Output losses for winter tomatoes .....	37
2.1	Development of co-operative marketing of cereals during the period between 1964-65 to 1970-71 .....	71
3.1	Area harvested and domestic production of main cereals in Iraq .....	101
3.2	Cereal consumption - selected years .....	103
3.3	World net grain exports .....	111
3.4	Export and import of fruit and vegetables .....	118
3.5	Salary increases 1968-81 .....	121
3.6	Family budget figures 1976-79 .....	121
4.1	Date production in Iraq, 1950-1983 .....	134
4.2	Income per cultivated donum under selected fruit and vegetables in 1977 (Average for the whole of Iraq) .....	137
4.3	The purchase price of dates paid to the producer by the government's Date Marketing office or (I.D.A.) .....	138
4.4	Estimated national consumption of all dates, fresh and processed 1960-71 .....	145
4.5	Dates used for processing 1960-1980 .....	153
4.6	The value of dates exported .....	156

<u>No.</u>		<u>Page</u>
4.7	Iraqi dates prices movement .....	159
4.8	The quantities exported according to packaging .....	160
4.9	Dates for processing .....	163
4.10	Political and geographical distribution of dates exported from Iraq .....	165
4.11	Method of exporting Iraqi dates .....	167
4.12	The export of dates by public and private sectors .....	169
5.1	Iraq : Numbers of animals, 1978.....	180
5.2	Annual average in the 1970's of the numbers of animals slaughtered in Iraq .....	191
5.3	Fresh milk prices paid to producers in 1977 (IF/kg)	200
5.4	Commercial broiler production, 1978 .....	214

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
2.1	Iraqi State Organizations which deal with the development of agricultural products .....	55
5.1	Wool marketing system .....	209
5.2	The four marketing catchment areas .....	212

## INTRODUCTION

### The background

It is now widely recognized that one of the world's greatest contemporary problems is its shortage of food : this, on deeper analysis, proves to be not so much an absolute shortage, but a consequence of the distribution system governing the availability of these foodstuffs. Whilst world leaders increasingly concern themselves with this crisis at the global level, it remains the case that at the national and indeed the local level the efficiency, or, otherwise, of agricultural marketing plays a crucial role in contributing to the material standards of both the producers and the consumers.

In terms of global comparisons, the main contrast in problems seems to be between certain 'developed' countries, whose main concern in agricultural marketing is the disposal of surpluses and the maintenance of high levels of price and producer protection, and most 'developing' countries, who face severe shortfalls in domestic production and are increasingly dependent on imported supplies.

Even for the countries which are between these two extremes, facing the difficulties of balancing production of their various products, there remain numerous difficulties, many of which are a product of their system of marketing and related distribution issues. It is into this intermediate category that Iraq fits.

Not only have food products an intrinsic importance, but many of them are also considered strategic items. Therefore, their marketing assumes an added significance. It is for this reason, in addition to its wish to reduce the economic and social power



of the middlemen, many of whom practised a high degree of monopolistic control over particular areas of the market, and thus harness the marketing process to the national interest, that the government has played an important and often dominant role in the marketing of almost all agricultural products. It exercises its control over the marketing sector by various ways, ranging from price intervention policies, via direct control of the legal exchange of all trade in a particular commodity and the ownership and operation of distribution systems, to the imposition and monitoring of import and export activities. The following practical problems must be seen against this background of positive governmental involvement.

In general terms, the marketing of agricultural produce has several features which must be kept in mind when looking at the particular circumstances of Iraq. These include :

- (i) the tendency, often presumed to be inevitable, for there to be an imbalance between production totals and consumption requirements;
- (ii) the relatively slow rate of adjustment in levels of production to changes in consumer demand.
- (iii) the various modifiers of agricultural production levels which usually seem beyond man's control, for instance drought and floods;
- (iv) the highly variable supply;
- (v) the length of time between planting and harvesting or during livestock rearing, with consequent implications for capital flow.

- (vi) the perishable nature of many agricultural products and the relatively low bulk value of many of them;
- (vii) the distance between production and consumption points, with all that that implies for transport networks and movement of goods and associated consumer demand for processed foodstuffs.
- (viii) the development of processing.

Though not all agricultural production in Iraq comes onto the market, part of it being consumed by the producers themselves, the proportion which is marketed has continued to increase so that today commercial agriculture and livestock rearing is the norm in most parts of the country. The most important activity which affects production and consumption of agricultural products is the marketing system which, likewise, exercises an important effect on both of these.

Agricultural marketing in Iraq is faced with severe problems. On the one hand, these problems are caused by the continuing increase in demand as a result of the increase in population numbers with a high annual birth rate, the relative increase in per capita income which has improved the purchasing power of the people and foreign immigration to Iraq, compared with the growth rate of its agricultural production. On the other hand, are the problems directly related to the physical geographical condition of Iraq, to the past and present marketing systems in use and to the locational distribution of the areas of production. Coupled with the high growth of population and the improved purchasing power of consumers, these issues have heightened the need to improve marketing facilities to supply more food of better quality to keep pace with increased demand. Inevitably, this means a greater food

supply and better seasonal and quality controls, which only an improved infrastructure can achieve.

Many years ago, Iraq could export cereals and could produce enough other agricultural products to meet the needs of its relatively small population. Today the situation is different. Iraq relies heavily on the international market to satisfy its food needs. The increasing reliance on food imports is accentuated by the rapid growth of the urban population. Iraq is importing large amounts of wheat, rice, sugar, meat and eggs, in addition to occasional imports of fruit, vegetables and fish, whilst the only constant major item of export from this sector is the Iraqi date. The gap between food demand and supply began to widen in the last decade, particularly for those items with high income elasticity of demand such as eggs, meat and fruit. The shortages and fluctuations in national food supply market is the most obvious example. Marketing in Iraq has also to come to terms with and resolve the fact that the quality of domestic foods is often lower than that of equivalent imported items and that, if they are allowed to do so and have the financial means, consumers often regard imported goods as preferable to domestic ones. This, coupled with inadequate distribution systems for home-grown food and the high wastage and output losses which occur during the marketing process for most agricultural products virtually guarantees that the system of internal marketing is far from efficient. Iraq, while a predominantly agricultural country, still imports vast quantities of food for home consumption. The cost of food imports remains at a very high level, having amounted to up to 30% of the National visible imports bill in the period 1970 to 1980. In some cases, consumers are obliged to pay the same price for goods of different quality because they have no option

to purchase high quality goods which are simply not available. Government food subsidies continue to rise despite being at a high level already. All these features make the researcher want to study the extent of the problem of marketing agricultural goods in Iraq, by evaluating the causes and looking at alternative solutions.

### The objective

This study aims to analyse the variety of factors and processes underlying the marketing of Iraqi agricultural produce, with emphasis on the spatial patterns and the potential for improving the marketing infrastructure. The emphasis will be on the evolution of these factors up to the present day, in the process identifying problems and their causes, and likely and actual consequences. Policy recommendations are made. Because the methods followed in producing a particular crop and in rearing particular animals on the one hand, and consumption patterns on the other hand affect the aspects of marketing, these will be considered in this study. The study attempts to answer the question : how adequate is the agricultural marketing system in Iraq? To do this it concentrates on the main elements of the problem and identifies the key group of products which, in essence, experience similar problems and methods when marketed. In practice, these groups are cereals, fruit and vegetables, dates, industrial crops and livestock and their by-products. Where individual crops deviate from the norm of their group, their specific problems are looked at separately. From these comparative data sets a pattern of marketing emerges, with those sectors deemed to be either strategically or commercially particularly important receiving the most direct degree of government direction and those commodities regarded as either luxuries or more peripheral to the state's interests being largely left in the hands of private merchants.

This study thus not only seeks to investigate these processes of marketing of the different items, but attempts to evaluate the effectiveness of the various marketing practices employed.

### The sources

The present study can be considered as the most comprehensive research to date in this field. Few previous studies have been concerned with agricultural marketing in Iraq, and those that have, have dealt with one aspect or one particular product, or, variety of products. Limited and scattered data on this research field are found in references dealing with specific aspects of a particular commodity from which suitable data for this study have been abstracted. The statistical data concerning agricultural marketing in Iraq which are important for examining the development of this activity, are scarce partly because this activity was in private sector hands, partly because Iraqi national statistical information only began to be produced during the early 1950's and partly because it is not necessarily collected and presented with the aim of showing marketing trends in mind. For instance given that most of the relevant raw data is concerned with absolute production totals, it is often only on the basis of deduction and/or via suspect secondary sources that the proportion of this total actually marketed can be calculated. Similarly 'consumption' is, in effect, synonymous with the amount of a particular product actually bought. It includes, perhaps incorrectly, those proportions bought, but never actually used, as is the case with a significant proportion of the cereal crop, believed to be hoarded against emergency and often allowed to go to waste. Similarly, it excludes that proportion of total production which is consumed

without ever passing through the marketing process. This makes it difficult to obtain specific data concerned with agricultural marketing in Iraq. Official unpublished data were sometimes available for consultation and use, but were often confidential or simply covered an inadequate range of products or years. This is particularly true of all years since the late 1970's, for which most records remain, even if available for consultation, unpublishable for security reasons. Inevitably, therefore, the most recent trends, which such figures might reveal, can only be speculated upon and this lack of factual basis remains a weakness of this research. Nevertheless, the annual abstracts of statistics and the results of general and agricultural censuses which have taken place in modern Iraq have helped this study in an indirect manner, as have selected foreign sources which either estimate Iraqi production or give a comparative data background.

Not surprisingly, because of these problems, such raw data as are available often appears to contradict themselves. One of the greatest problems which this study has had to face is the making of value judgements about the veracity of any particular data set. In these (frequent) cases the author hopes that his twelve years experience as one of the government's Agricultural Officers will have been put to good effect.

#### The format

The body of this study consists of six chapters. Chapters one to three, using all the main commercial crops of Iraq, with the specific exception of dates, examine the various aspects of marketing's background and development. Chapter one deals with the main problems facing agricultural marketing in Iraq, concentrating

on infrastructure. Chapter two deals with the evolution and the development in the methods of agricultural marketing for various crops during the last three decades, analysing the current methods used. Chapter three deals with the volume of the main crops marketed in Iraq in order to assess the deficits or the surpluses for the main crops. These three chapters collectively place the overall crop production picture within its marketing framework. The particular and specialised problem associated with dates and livestock are investigated in chapters 4 and 5. The former looks at the date as the main crop exported, and as a crop with a unique tradition within Iraq both as a food source and because of its production methods. Chapter five deals with livestock products and by-products, because they present specific marketing problems and, not least, because of their increasing place in terms of consumer demand. Chapter six, the concluding chapter, stresses the evolution of patterns of production and consumption, emphasising the factors involved in this process and the need for marketing infrastructural developments as a solution to the problem of inadequate supply rather than merely attempting to increase production totals. It is to be hoped that such attempts are likely to be assisted by the kind of detailed description of the evolution of the marketing infrastructure in Iraq set out in the forthcoming pages.

Finally, the author hopes that, although his official post has made it possible not only for him to gain access to much of these data which might otherwise have proved unobtainable but also to assess the problems fully, it will become clear that he is, in addition, one of Iraq's consumers. He has thus been able to bear in mind the point of view of the increasing majority of Iraq's

population who are, like himself, faced with the problems of consumer access as well as the problems of the farmer and their marketing colleagues.

CHAPTER ONE

AGRICULTURAL MARKETING PROBLEMS IN IRAQ

Recognizing that the processes by which agricultural commodities move from producer to consumer were far from efficient and were one of the main reasons for shortfalls in domestic food supply, the government of Iraq, particularly since the late 1960's, has made major attempts to reform the marketing process. Most significantly, this has involved major participation by the government, through the medium of specific bodies such as the Agricultural Marketing Administration (A.M.A.), in the marketing process, partly in an attempt to reduce the power of the middleman who formerly controlled this sector and partly as part of a positive policy of state influence on production targets and distribution networks.

This has meant that many of the former problems have, at least in part, been eliminated, but others remain and new problems, particularly associated with the great increases in demand experienced in recent years, have arisen.

Many of the problems involved in the organization of agricultural marketing in Iraq are related to the nature of agricultural production in the rural areas. Here, low productivity as a consequence of a combination of the failure to utilize modern scientific technology, outdated rural transportation routes, the high increase in transport costs, inadequate storage and other infrastructural facilities, poor management and the inefficient methods of distribution is the characteristic situation. There are also considerable output losses due to the marketing processes and the impact of the middlemen who have traditionally controlled the market prices. At the same time, the growth of major cities and such related economic sectors as industry,

trade, building and construction, and transportation, with the concomitant concentration of workers in big cities, has led to an increased demand for foodstuffs and a consequent increase in food prices.

A study of the problems of agricultural marketing in Iraq is therefore very important. It is worth mentioning that agricultural marketing is governed by the prevailing internal market prices, (themselves frequently influenced by government intervention policies which also act where deemed appropriate, as a buffer against international price fluctuations) and also by the profitability, 'natural' or artificial, of a particular crop. The cultivation of those crops for which the government does not set either a price or a quantity, for instance certain luxury crops such as fruit is therefore governed by prevailing free market prices in relation to profits and losses obtained from them. This will influence the farmer's decision as to whether or not to grow the same crop the following year. This is one of the factors which has contributed to annual fluctuations in the production of annual crops : by the same token, perennial crops - most notably the date, cannot be switched so readily and in these cases, as will be seen in Chapter 4, the farmer's solution is often simply not to harvest or to abandon these areas.

The modernization of agricultural marketing has thus faced many problems, above all because of three interrelated reasons:

(1) The high rate of urbanization which has increased the number of urban consumers to be supplied with food. Modern migration from rural to urban areas in Iraq began in the early 1950's. It was triggered off by such severe conditions as soil salinity, plant diseases, water resources and flood, to be outlined later, under which the farming

population was living, especially in the southern provinces of the country. Further, during the decade 1970-80 migration from rural areas to urban centres increased considerably because of several pull-factors within the cities : firstly, the numerous development projects in various fields attracted the rural labour force; secondly, the relatively high salaries and wages to be found in the urban centres; thirdly, the existence of better services in the urban centres than those in the rural areas and finally, many of the children of the farmers having received a better education, joined the swelling ranks of the service sector, particularly in government offices.

In 1957 the rural population constituted more than 61% of the total population. The proportion of the population classed as rural has been decreasing at a rapid rate. Although the total population rose from 6 million in 1957 to 12 million in 1977, the percentage of rural population fell from 61.2% to 36.5% over that period as seen in Table 1.1. Similarly, the urban population grew by almost 86% between 1965 and 1977, a period when the absolute growth of the rural population was only 11.5% : this underlines the reasoning behind the Iraqi government's concern over food supplies, given that not only was the total population increasing rapidly, but the proportion divorced from primary production was expanding all the time.

(2) The high rate of population increase, which is now estimated at 3.3% according to the 1977 census, and has been no less than 3.1% since the 1950's.

(3) The relative increase in per-capita income which has improved the purchasing power of the people, leading to an increase in demand not only for more foodstuffs but for a greater range and higher quality (see Tables 3.5 and 3.6, Chapter 3).

Table 1.1

Annual average distribution of population between rural and urban centres in Iraq for selected years

Years	1957	1965	1977
Rural	3,853,754	3,935,616	4,389,085
Urban	2,445,222	4,111,799	7,640,675
Overall	6,298,976	8,047,415	12,029,760
Rural population as a % of total pop.	61.2	48.9	36.5
An average growth rate	3.1%*	3.4%	4.1%

Source: Annual abstract (1978) - (Results of general census excluding Iraqis abroad) p.25 and 26.

\* 1947-57

Overall, because of the high rates of economic growth, the demand for food increased particularly in the period 1974-83, a period when many international companies began operating in Iraq on the numerous development projects such as construction of bridges, motorways, electricity, irrigation and transportation schemes. These companies, often with their own work forces, placed extra demands on food provisions and contributed to further increases in demand for a wider variety of foodstuffs.

Factors limiting the response to their increase in demand have included:-

- (1) Iraq has tended to place emphasis on the production of industrial crops such as cotton and jute rather than food products.
- (2) Plant diseases.
- (3) The yearly variation in productivity due to climatic factors,

particularly rainfall, especially in the northern part of the country.

- (4) Soil salinity which causes many problems in the central and southern parts of the country.
- (5) Irrigation and drainage systems which have not been sufficient to improve agricultural productivity sufficiently up to now.

### The main agricultural marketing problems in Iraq

#### 1.1 Transportation

The development of marketing has been associated with the development of the means of transporting goods from the place of production to that of consumption. One of the main problems which faces the agricultural system in Iraq is the inadequacy of the transport network, especially the roads which link the farms to the main roads. This lack of a good network has led to considerable real increases in transport costs. Experiments and studies have shown that the cost of transportation is often more than half the cost of the whole marketing process : the main reason for this is the bad state of the roads which cause damage to vehicles and delays in the transportation of such perishable agricultural products as fruit and some vegetables which must be consumed within a short time of being harvested.

In addition, the limited means of transport available for the marketing of these agricultural crops is a direct cause of prolonging the marketing period on the one hand, and the goods being damaged as a result of leaving them in the open or in inappropriate storage on the other. This has led inevitably to further increases in transport costs and was one of the main motivating factors behind the decision to establish such public sector authorities as the GRA (Grain Regulating

Administration) with powers to take direct action to form and operate specialized transport organization in an attempt both to remove the problems associated with the former system of private haulage, and to operate the distribution system as a government monopoly. Having outlined the general existing transport systems in Iraq, it is perhaps important to illustrate the relationship between some of the agricultural crops and their marketing channels. A comparison between cereals such as wheat and barley, and fruit and vegetables reveals interesting parallels.

### Cereals

Amongst the cereals, maize and rice present relatively few marketing problems, partly because of their relatively low production totals and partly because they are distributed at a time when pressure on the transport system is not particularly great. For wheat and barley, the two major cereals, this is unfortunately not the case, though, recently, attempts have been made to reduce this problem by shifting the emphasis in storage from large silos next to the centres of consumption to smaller silos adjacent to the areas of production. The period during which wheat and barley transportation to the silos takes place has been assessed at 120 days, the public sector transportation capacity available being 2,100 tonnes daily by rail and 250 tonnes daily by the state Land Transport Company, a total of 2,350 tonnes daily.<sup>(1)</sup>

Table 1.2 Wheat and barley distribution : shortfall in State capacity  
(1000 tonnes)

Years	Total of wheat and barley marketed	Average daily requirements for transportation	Capacity available (public sector)	Theoretical Shortfall
1975	1.300 (a)	11	2.35 (b)	8.65
76	1.900	16	"	13.65
77	1.200	10	"	7.65
78	1.500	13	"	10.65
79	2.400	20	"	17.65
80	1.900	16	"	13.65
81	1.700	14	"	11.65
82	1.500	13	"	10.65

Sources: Based on (a) EIU (1984) p.9.

(b) Al-Nawfal, S.J. et al (1978) Cereal Marketing in Iraq, Baghdad, p.20.

This shortfall has had to be met by private vehicles. It would seem that, despite the fact that either cereal marketing committees or the Head of a County Council can fix annual transportation charges, transportation remains significantly in the hands of the private sector. This is regarded as essentially undesirable because, left to their own devices, private haulage contractors will seek the most profitable cargoes, with the result that they may not choose to be available to move grain surpluses at the critical times. However, realising this, the government has the power to requisition private lorries, complete with their drivers, at times of glut or emergency, to solve this problem. Rarely used, it is of course an unpopular reason, but has potential advantages for both sides, since it could allow lorry owners to receive good payments, and at the same time reduce the

need for further public sector vehicles which, for long seasons, might otherwise be idle. Further suggested solutions to the problem of cereal transportation include:

1) Expansion and greater use of the railways in transporting grain between silos and those centres already on railways. Based on 1975 figures, the total length of track in Iraq is 1,955 km, consisting of 1,130 km of standard gauge and 825 km of one-metre gauge. The one-metre gauge line runs from Baghdad through Khanaqin and Kirkuk to Erbil which is an important grain-producing area, and from Baghdad through Musayab to Kerbela in the central part of the country. The standard gauge line covers the length of the country from Rabiaa on the Syrian border in the north via Mosul, the leading area for grain production to Baghdad and from Baghdad to Basrah and Um-Qasr on the Arabian Gulf. A 550 km line is planned linking Baghdad to Hsaibah, near the Iraqi-Syrian frontier, which, if constructed, will pass through a very important cereal producing area. Whilst most of this system is single track, it has considerable unused potential for grain transportation, but local road feeder services need to be improved or added, and more rail depots would have to be constructed : currently, the number of points at which the rail system is geared towards collecting grain is far too few.

2) Greater participation by the public Land-Transport Company in transporting grain from Marketing Centres to silos, with the transport cost being based on weight : distance calculations.

3) The G.R.A. could buy and run those vehicles necessary to meet the need for transporting grain from M.Cs to silos, stores and yards and from silos to mills, and transporting flour from mills to the bakeries and ovens, and to retailers.

4) The co-operatives could be encouraged to buy some means, for instance trailers, for transporting grain from fields and depots to the M.Cs. Farmers should be encouraged to use horse-drawn wagons for transporting grain from the farm to the depots.

5) The better distribution of vehicles between different counties, proportionate to the amount of grain marketed in each, and the greater ability to shift vehicles from one area to another at times of heavy demand.

### Fruit and Vegetables

In contrast with the transportation of wheat and barley, which is essentially part of a national, year-round pattern, fruit and vegetables tend to present problems particularly associated with their seasonality, their often-local distribution system and their perishability.

A particular problem is the shortage of ordinary and cool trailers, the only public means of transport. In 1978, for instance, the A.M.A had 28 ordinary and 200 cool vehicles with a capacity of between 5-20 tonnes each.<sup>(2)</sup> Further, no use is made of Iraqi Railways as a means of transport, even though they are better equipped to prevent crops being damaged. Also the limited number of good roads that would link production centres to the main roads increases the risk of damage at the early stage of transportation, and therefore the risk of rapid spread of damage through the rest of the load.

Thus, the number of public sector lorries can not meet the actual needs of marketing fruit and vegetables and in attempting to find a way out of this situation further governmental intervention is needed.

## 1.2 Storage facilities

Given Iraq's climate, good modern storage services are crucial in organizing and carrying out modern marketing operations for they are one of the essential factors in shaping marketing policies. These services have their own benefits to the producer, the consumer and to the national economy where they play a distinctive role in market balancing by controlling the demand and supply through drawing back the surplus and storing it, either to guarantee a degree of consistency of supply, or in order to practice specific market intervention policies such as price maintenance or manipulation.

The lack of convenient storage capacity in the marketing system makes convenient marketing policies very difficult, especially for such easily damaged crops as grapes, melons and tomatoes. This is the main reason leading to a glut on the market of some of these crops at certain periods, with prices falling below costs of production at such times. Therefore, storage facilities emerge as far more than simply a means of keeping surpluses, but as specific marketing devices giving either the government, or private individuals, or both, a direct means of influencing both price and availability of a particular crop. Not only may a greater degree of constancy of supply be assured, but costs for the consumer can be more readily controlled, thus protecting, in particular, the less well off.

Also important is the fact that storage facilities indirectly affect the producers' profits; with good storage, the producers would be confident that their crops would be purchased at a suitable time and place, hence providing a regular income to the retailer and guaranteeing the arrival of goods for the consumers. In addition to that, these storage facilities provide revenue for the national

economy, which will expand proportionately, by directing any surplus in two parallel directions, industrialization and export. Finally, good use of better storage facilities should minimize crop damage. In all these ways, stabilization of local and national markets should be encouraged.

So, although inevitably inherent characteristics of the different crops will affect their storage potential whenever convenient storage capacities are provided, acute fluctuations in production and price and instability can be abolished by storing the surplus at production time and putting it back on the market later, thereby creating a continuous market mechanism and reducing fluctuations in prices.

The successful distribution of stores must reflect such production specialization as occurs in certain areas, but their location can also be seen as an incentive to increased production in chosen fields. In addition, imported fruits such as bananas and apples require specialised facilities for storage. However, the total capacity of storage facilities in 1983 was 33,050 tonnes of cool storage, plus 16,800 tonnes of refrigerated storage with a further 4 cool stores, each of 6,000 tonnes capacity and refrigerated storage of 14,000 tonnes capacity under construction. However, a study by the Ministry of Agriculture estimated that in order to maximise the country's agricultural potential, the actual need for storage facilities was 637,300 tonnes for cool storage and 356,000 tonnes for refrigerated storage.<sup>(2)</sup> This vast difference between the actual and the ideal indicates, in part, the difference between reality and abstract perfection, but it is also a very clear indication of what could be achieved if this aspect of the marketing process was to be significantly improved.

### 1.3 Output losses in the marketing process

Losses in the marketing process are those that affect crops between the harvesting and consumption stages. The damage that occurs to the crops during the harvesting or gathering, packaging, transportation, storage and distribution, all contribute to these losses, which emerge in the last stage of the marketing operation.

By discussing the subject of such losses it is possible to suggest how large these are at each stage, from gathering to consumption, and to put forward appropriate solutions. Whilst not a major problem for all crops, this is particularly significant as a loss factor with certain fruits and vegetables.

Harvesting operations for many fruit and vegetables in Iraq are still primarily related to the need to get a top quality product to the consumer. For instance, the shaking of trees to make fruit fall and thus facilitate easy collection is still regarded as a proper method despite obvious damage to the crop. Not surprisingly, such dirty or damaged crops command low prices should they ever reach a market.

In explaining why such procedures continue it has been suggested that :

a) Farmers structure their harvesting operations in relation to existing transport and storage facilities, therefore, the crops being produced will reflect the transport and storage facilities available.

b) The methods or techniques used in harvesting influence and are influenced by the income of the individual farmers.

c) The time of harvesting is sometimes determined by the price which these crops will fetch on the market; this leads to some undesired effects on the national economy.

At the other end of the process of marketing losses can be equally dramatic as most of the particular markets which specialise in agricultural products in Iraq serve small areas, but do not provide good marketing facilities : examples include a lack of cleaning, grading, packaging machines and insufficient warehouses for product storage; crops are therefore exposed to varying climatic and other harmful influences. Products are often piled on top of each other before being sold, causing goods to crush under pressure. Traffic congestion, pedestrian congestion, lack of car parks and traffic control also cause problems. Individual producers' containers may be mixed up. There is confusion during the distribution of the correct number of containers to each farmer. Finally, containers are not cleaned after use, causing the spread of fungus and bacteria, which affects the quality of the new products.

Most of the fruit and vegetables are fragile crops, therefore, losses occur in these crops more than the others. Generally speaking, Iraq has been producing sufficient amounts of most vegetables, although imports are necessary because of seasonal discrepancies, but fruit production is, except for dates, usually insufficient to meet demand and therefore Iraq imports fruit. However, Iraq exports the vegetables and some of the fruit produced in the high production season, mostly immediately after harvesting.

In order to make the amount of these products sufficient for domestic consumption, and improve the foreign trade balance in these goods, output losses should be tackled and minimized. The main reason for the deficit in fruit and vegetables supply is therefore not so much inadequate production (see Ch. 3), but the output losses which occur during the marketing process. Only with the knowledge of the amount of percentage loss in each crop for each stage of marketing can a careful appraisal of solutions be provided.

Output losses vary from crop to crop according to the intrinsic nature of the crop, but it can be said that some crops are similar to others in the sort of losses which occur through their marketing process. For example, wheat, barley and rice experience similar losses through their marketing process. Some vegetables such as carrots and potatoes incur nearly the same losses during harvesting, since they are grown under the soil, while cabbage and cauliflower have less losses at that stage because they are protected naturally by the outer leaves. Most fruit and some vegetables such as grapes, tomatoes and lettuce are very fragile, therefore, they incur more losses through their marketing process. These output losses may happen in the field, during transportation, when in store, at the wholesale market or at the retailing stage. The reasons for losses at each stage differ and need to be mentioned separately. At the harvesting stage provision is not always made for sorting according to ripeness and size; imperfections in the packaging occur because of over-filling which crushes the crops; the harvested crop may also remain in the field for a considerable time before going to the main market, exposing it to unsuitable atmospheric conditions; the crop is sometimes left too long on the plant before harvesting leading to a decline in quality because of over-ripeness.

For example, output losses in the field from the quantities ready for marketing for carrots occur because, not only does the process of lifting the carrots cause damage and breakage, but also all carrots, regardless of their size and condition, are lifted simultaneously. Finally, having lifted them, farmers do not sort the carrots prior to despatch.

A major cause of output losses at the initial stage is the harvesting techniques used. Carrots are gathered either by hand,

using spade or hoe, or by machine, using lifting gear, which means that all carrots are harvested together regardless of size or condition. Unfortunately, at this stage the farmer does not sort the crop, resulting not only in a low price for good carrots than could be otherwise obtained but also in unnecessary transportation costs for useless products which could be used locally for animal feeding. Machinery is much quicker and, therefore, more popular on large acreages, but causes greater damage to the crop.

At the transportation stage, output losses are due to overloading during transportation with consequent crushing of the goods at the bottom of the load, in particular for the crops filled in sacks such as beans and carrots, where haphazard arrangement of sacks on the vehicles, transport over long distances between production areas and the main markets for consumption, and imperfect handling especially through loading and unloading vehicles causes considerable damage. These factors apply especially to crops such as beans, whilst carrots are one of the least susceptible of vegetables to being crushed. Cabbage and cauliflower, however, with outer leaves which protect the edible parts from many of these external factors, have relatively greater resistance at this stage, damage or loss of those outer leaves not constituting loss except in terms of bulk or appearance. In addition, these two crops are only transported over short distances since most production areas have developed close to the cities and towns which provide the points of consumption.

At the wholesale market stage, output losses are due mainly to the variation between supply and demand. Delays in the distributing operations sometimes cause a proportion of the crop to remain too long in the market causing damage. There is a wide range of differing rates of loss between the different centres, with losses usually being

low in the major cities but often very great in the smaller centres. This seems to be because of, on the one hand, the large number and varied demands of the urban buyers - they use these vegetables in a greater variety of ways and are more willing to experiment-and on the other hand, because of the more conservative nature of the rural areas where a more traditional diet is favoured by society. Output losses also happened because of mis-handling especially through unloading the vehicles and haphazard arrangement of sacks on the ground causing, for instance, a significant proportion of bean pods to break. The crop may also remain at the market for a considerable time before going to the shops or other markets while the atmosphere in the market building may cause damage to the crops.

At the retail stage, output losses are brought about by imperfect handling, both by the sellers and by prospective consumers, an excess of supply over demand, the piling up of the sacks on top of each other and even the display of the goods at the shop. Furthermore, unsold quantities, whether because of high prices or low demand are again considered losses. The unsold quantities which remain in the shop for a considerable time because of relatively high prices or low demand lose weight and quality because of evaporation and, for instance, the removal of the outer leaves of cabbage, by retailers to 'improve' the crops during display. Retailers in Iraq usually sell cabbages whole, each head weighing on average about 3 kg; this quantity is often in excess of a small family's needs, and is thus clearly one of the reasons why these vegetables have such a limited degree of popularity in Iraq. It should be easy either to grow smaller cabbages, or to encourage consumers to buy more by dividing the head into two or four portions, as in Britain for instance, with benefits for all concerned.

This brief mention of one of the specific problems associated with one particular crop acts as an appropriate introduction to, and justification for, a more detailed survey of the range of problems affecting the efficient marketing of two other crops which illustrate the extent of the issues involved.

### Potatoes

One of the more recently introduced of Iraq's important food crops, potatoes were made a very important crop to be grown by the state farms and the cooperatives from the outset of these enterprises in the late 1960's. This was deliberate government policy, partly to stimulate rapid growth in the national production of this new crop, and partly in the hope that the example of the potato growing schemes in these state and cooperative farms would be copied by the private farmers. This has been achieved because the state farms have now shifted their emphasis in the direction of industrial crops, and a large proportion of the rapidly growing potato production now comes from private farmers. One fortunate consequence of this development is that much of the output loss at the harvesting stage, about to be described, can be presumed to have been removed.

Within the cooperative and state farms there are different methods of production, particularly relating to the use of machinery in state farms, compared with the traditional methods which are followed by the co-operatives and also by most private farmers. Output losses differ accordingly. The rapid increase in demand for potatoes has encouraged the farmers to expand their cultivated area and to grow potatoes as a safe product which has a guaranteed good selling price in the markets. The national production of potatoes in Iraq now constitutes a high proportion of the total internal potato market, although they are still imported sometimes (see Table 1.3).

Table 1.3                      Potato Import and Production data

Year	A Quantity (000 tonnes ) imported	Cost of Imports (ID)	B National Prod- uction (000 tonnes)	A % B
1976	11.3 <sup>(a)</sup>	1,211,385 <sup>(a)</sup>	74.2 <sup>(b)</sup>	15
1977	12.2	748,665	64.4	19
1978	3.0	134,377	104.0	3
1979	3.2	287,742	n.d.	
1980	17.9	1,628,081	n.d.	
1981	13.6	1,364,600	n.d	

Source    (a) Official figures from Ministry of Agriculture  
               (b) Annual abstract (1978) p.60.

The use of machines in the state farms means that some 17% of the product is left in the field, in addition to about 6.8% lost during initial preparation of potatoes for marketing. <sup>(3)</sup> The two reasons for output losses at this stage are, firstly, that certain types of soil are not conducive to the production of potatoes. The use of machines in crop collection results in a lot of broken potatoes when the soil is heavy, as it is at most of these farms. There is also the level of incompatibility between the seeder machine and collector machine, the seeder machine putting the seeds at an inconvenient depth for the collector machine.

Output losses because of mechanical sorting has been estimated at 1.7% of those put through the machines. This represents the quantities dropped during sorting due to being crushed by feet, barrows or vehicles. These quantities were collected in a damaged state. The reason for these output losses was basic inefficiency in pouring the potatoes from the containers into the grading machine.

In contrast, output losses in the fields belonging to the co-operatives is very small compared with that from the state farm. The reason for this is that the cooperative workers collect potatoes by hand and by using spades. Since the areas cultivated are small it is appropriate to use spades rather than machines. Further there is a greater incentive to keep losses to a minimum so that profits may be kept high. All the family members of the cooperative share in the collection operation, since, should they not sell the crop on the open market, the government guarantee to purchase the potatoes at pre-agreed prices. The proportion of potatoes lost at the marketing preparation stage is 5.5%.<sup>(3)</sup> These output losses result from the fact that farmers are not sorting their crops to extract the damaged potatoes during the production and collection operation. Therefore, hand sorting is made in the depot with a net output loss in this case of 1.9%,<sup>(3)</sup> largely because of damage which occurs during their mechanical transportation within the storage sheds.

Since the production of both state farms and co-operatives passes through the same marketing channels from the storage stage onwards, they are both equally exposed to the same output loss factors which characterise these stages. Output losses due to storing average some 3.5%, whilst losses due to imperfect sorting average 4.5%, giving total losses in the stores of 8%.<sup>(3)</sup>

The losses are due to the following five points:-

Firstly, irregularity of temperature and humidity inside the stores: given that very exact temperature and humidity controls are crucial for proper storage of the potatoes, even when the ideal environment has been accurately determined, occasional human and mechanical errors with the machinery cause losses.

Secondly, the fact that the numerous varieties of potatoes kept in the store require slightly different pre-set environmental conditions means that, given only one micro-environment in the store, some deterioration of some varieties is inevitable.

Thirdly, no provision is made for grading and classifying according to quality and volume.

Fourthly, imperfections in the grading operations which led to part of the output losses in the first stage in the stores. Here physiological damage to the potatoes is a contributory factor to the general damage to the products.

Finally, procedures followed in the stores also lead to problems in that workers do not follow the guidelines which state that those potatoes coming into storage first must be marketed first.

The main wholesale markets in each county are supplied with potatoes from stores belonging to the A.M.A. These markets then supply the local markets. However, in Baghdad the local markets are supplied directly by A.M.A. stores. Potatoes incur output losses during transport over long distances because of irregularity in the filling of the sacks and irregular packing in vehicles. Losses also occur when sack ties are broken, which is surprisingly and needlessly serious during transportation. A heavy load causes potatoes to crush under pressure because of the fact that sacks are piled on top of each other. Given that the lorries are usually open, local weather conditions - extreme heat or, less frequently, rain, affect the products during transportation. In addition, and in the past as a consequence of these problems, further damage occurs due to the bursting of the sacks whilst in the vehicles. The extent of these losses are shown in Table 1.4. To calculate output losses during this stage, samples were taken from vehicles arriving at the main markets in selected counties.

Table 1.4 : Potato losses during transportation to wholesale markets

County market	Average delivered Wt/kg/Veh.	Sample volume kg.	Total(A) kg.	Output losses (B) %
Basrah	11,650	1,850	242	14
Anbar	5,040	550	45	9
Najaf	8,321	1,434	138	10
Wasit	10,790	1,200	69	6
Missan	11,800	1,125	85	8
Total	47,601	6,159	579	9.4

Source: Al-Rahbi, M.S. and Al-Shibli, K.A. (1978), Output Losses in Marketing Process of Vegetables in Iraq, Baghdad, p.49.

This table reveals that the percentage lost averaged 9.4%, but 8% of this was due to potatoes, already damaged at the storage stage, being carried, thus leaving an output loss actually due to the transportation stage of 1.4%.

The calculation of output losses in the wholesale markets was estimated by totalling the number of damaged sacks, including those in the main markets, and by totalling the quantities of spillage from each sack given that the standard sack weighs 35 kgs. There are, however, some sacks weighing between 50 and 70 kgs. The weight spilled was measured in order to calculate the proportion of the total quantity lost. Six samples were taken from six markets as shown in Table 1.5 which indicates further losses due to damage at this stage of 1.6%, given that crops damaged due to previous stages in the process of marketing were estimated to be 9.4% of the total sampled. Losses due to spillage were 1.8%, giving a combined loss at this stage of 3.4%.

Table 1.5      Potato output losses at the wholesale markets

Markets	Quantity on arrival	Output losses due to spillage		Sampled volume after spillage losses	Output losses due to damage at and before this stage	
	kg.	Rg.	%	kg.	kg.	%
Kathimia	11,940	197	2.0	597	18	3
Dora	13,300	323	2.4	665	40	6
Basrah	11,650	120	0.1	583	95	16
Missan	11,800	225	2.0	590	96	16
Najaf	8,321	121	2.0	416	68	16
Anbar	5,040	123	2.4	252	25	10
Total	62,051	1,109(1.8%)		3,103	342(11%)	

Source : Al-Rahbi, M.S. and Al-Shibli, K.A. (1978), Output losses in Marketing Process of Vegetables in Iraq, Baghdad, p.51.

These losses are due to one of three reasons : broken sacks and spilled potatoes because of mis-handling; the crops being kept for too long a time in the market which affects the quality of the crops because of physiological deteriorations, and insufficient warehousing in these markets to protect the crop from the climatic fluctuations.

The retail outlets form the last link in the marketing chain. Here, given that, usually, the buyer picks and selects his own purchases, a process which in itself increases damage to the potato, losses can be considerable and all unused potatoes must also be included, being classed as 'damaged'. The following table, 1.6, shows these losses, and indicates that the net loss at this stage is 3.5%, 11% loss having been carried forward from the previous stages. These losses are brought about by the imperfect handling by both retailer and consumer and the piling up of the sacks on top of each other.

Table 1.6                      Potato output losses at the retailing stage

Market	Quantity delivered kg.	Output losses kg.	%
Khathraa	13,550	2,595	19
Harithia	11,050	1,349	12
Qadisyia	27,480	3,608	13
Overall	52,080	7,552	14.5 average

Source: Al-Rahbi, M.S. and Al-Shibli, K.A. op.cit., p.53.

Therefore, the marketing of potatoes by existing methods has been shown to produce overall crop losses, in the state sector, of about 35% and in co-operatives of about 23% of the potential crop (see Table 1.7). This shows differences between the state farms and the other farms in the output losses, especially at the harvesting stage as a consequence of machine use and the carelessness of workers in the state farms where machinery dominates and workers are paid a wage. This can be reduced by adjusting the machines and operating them more efficiently in order to reduce the number of potatoes damaged. In addition the employment of some workers to collect potatoes which have been left in the field as a consequence of using the machines would be beneficial. The use of machines can justify this level of loss because of other savings, notably the time involved, manpower and wages; however there is no justification for leaving potatoes in the field uncollected. This should be reduced by motivating workers to collect all the crops by giving them a bonus or by reducing their wages according to the proportion left in the field. The same method can be used to reduce the output losses in the quantities prepared for marketing in the field. This will inevitably

Table 1.7 : Output losses for potatoes

Stages	Loss at each stage		Loss of potatoes, based on cumulative loss at each stage.	
	State Farms %	Co-operatives %	State Farms %	Co-operatives %
(1) Left in the ground distributed as follows: Suitable for consumption 9.8% Broken 3.8% Small (less than 25 mm) 3.4%	17.0	2.0*	100	100
(2) Output losses in the quantities available for marketing from the field	6.8	5.5	83	98
(3) Output losses because of mechanical sorting in state farms and hand sorting in co-operatives	1.7	1.9	77	93
(4) Output losses in the stores, distributed as follows: because of storing 3.5% because of imperfect sorting 4.5%	8.0	8.0	76	91
(5) Output losses because of transportation	1.4	1.4	70	84
(6) Output losses at the wholesale market distributed as follows: due to deterioration 1.6% and spillage 1.8%	3.4	3.4	69	83
(7) Output losses at the shops	3.5	3.5	67	80
Balance - The percentage actually consumed of those entering the marketing process			65	77

Source: Derived from Al-Rahhi, M.S. and Al-Shibli, K.A. op.cit.

\* Al-Rahhi and Al-Shibli state Nil - this is not realistic.

reduce losses during storing, since most of it comes from imperfect sorting in the field.

Output losses can be prevented entirely during transportation and at the wholesale markets, since potatoes do not perish rapidly; if good sacks with suitable filling and sewing are used, losses will not occur. Arrangement of sacks on the vehicles should be done more efficiently avoiding heavy loading and haphazard piling of the sacks on top of each other. In addition, sufficient warehousing in the wholesale markets is needed to protect the crop from climatic fluctuations.

Output losses can be reduced considerably at the retailing stage if potatoes are graded and classified according to colour, size and variety. Each of them must have a specific price. This gives consumers the option to choose the crop they wish. At present the selection by purchasers of the better quality potatoes from a mixed quality batch leaves a residue of poorer potatoes at the same high price as the higher quality ones which have been bought preferentially. This causes losses which could be removed by better grading so that consumers who could only afford cheap potatoes would not have to pay an inflated price for them.

Other possibilities for improvement include the storage stage, at which a further 8% of potatoes are lost, a figure which represents 19% of all losses within the state farm marketing process, and a remarkable 31% of such (smaller) losses from the cooperatives. These occur because of inadequate humidity, temperature and ventilation controls, in addition to the high percentage of losses caused by imperfect sorting. These losses could be greatly reduced if the atmosphere inside the store is more carefully controlled and the workers are encouraged to take more care in the sorting process.

## Tomatoes

Previously tomatoes had only been grown in Iraq as a summer crop. Modern winter tomato production dates from 1971, when farmers introduced new scientific methods in their cultivation of this crop. This winter cultivation has been increased by using polythene sheeting to protect tomatoes from the winter cold. Basrah is the most important part of the country for this crop. Its specialisation in the production of winter tomatoes is due above all to the local climatic factors of Basrah. The style of cultivation differs between the marsh areas and the desert areas. In the marshes, farmers cultivate on the terraces between the marsh waters. The plants such as reeds and canes which grow naturally act as wind barriers, thus improving the tomatoes' microclimate. Sometimes farmers use sheeting to increase that protection. Farmers gain access to and harvest their crops using small boats which can pass through the channels between the terraces. Planting of the winter tomato in the marshes starts in July and lasts until the end of August. The cultivation depends on the seasonal lowering of the water table which limits the beginning of cultivation.

In the desert, where the temperature is lower than in the marshes, especially at night with no wind barriers naturally available, the farmers cover their crops nightly with plastic sheeting to protect them from the cold wind and frost.

Iraq's tomato production, begins with the new 'Season', starting at the beginning of November in the areas near Basrah; this area continues in production until the spring, when the midlands start their summer production, followed by the northern part of the country. These developments have happened because of the success of tomato cultivation in Basrah and the increasing national demand for it. In recent years

tomatoes have been the most important single item in the marketing of vegetables because of increases in production to cater for the increasing consumer demand for this important crop. However, as tomato marketing increases so the absolute output losses increase because of the poor marketing conditions in operation, but such losses vary greatly from area to area, with in particular, loss rates for summer-produced tomatoes being far higher than for winter-grown ones.

It is worth mentioning that when the crops have been gathered from the field some farmers have traditionally sorted their crops according to such criteria as size, ripeness and shape. Then they pack them in boxes to be ready for the market. Output losses at this stage have been estimated at between 10 and 15% of the total crop of winter tomatoes, and occur due to the four following reasons: imperfect sorting; the existence of damaged crops in the boxes left there from previous consignments; the large size of the boxes especially their height which means that the tomatoes are crushed under pressure; and finally, the packaging operation which takes place without sufficient shelter to protect the crops from the elements.

Further damage to the crops occurs during transportation because of the following reasons: firstly, the long distances sometimes involved between production areas and the main markets for consumption, which means that too long is taken for this highly perishable product to reach the markets; secondly, the inadequacy of the roads especially those which link the farms with the main roads, which causes crushing of the loaded tomatoes, particularly towards the rear of the lorry; thirdly, using large boxes causes tomatoes to crush under pressure, fourthly, general mishandling onto and off the vehicles. In addition, given that the lorries are usually open, extremes in the prevailing weather during the journey can be detrimental.



summer season, such losses are not less than twice that of the losses during winter, largely because of the rapid deterioration in the tomato which can occur during times of high temperature and when exposed to hot sun. This very considerable loss, up to about 40% of the crop produced in summer is because the packing of the crop coincides with the highest temperatures which occur in July and August when temperatures reach 45-50°C. Such stages as transportation could be responsible for losses of up to 10 times the figure given in Table 1.8 as a consequence of using open-top lorries with no protection from heat and sunlight. Another significant loss happens during the retailing stage because of selection by purchasers. At present the selection by purchasers of the better quality tomatoes from a mixed quality batch leaves a residue of over ripe and generally poor tomatoes at the same price as the higher quality ones which have already been bought. This rapidly causes damage to the over ripe tomatoes. These could be removed by better grading according to ripeness. The price differences for each grade must be clear in order to ensure rapid sale of the over-ripe grade which otherwise could possibly be used in cooking or home-made tomato juice rather than left to spoil and even affect the whole consignment. Moreover, tipping the whole box of tomatoes onto a selling surface to let consumers select their own causes further damage. In addition, the atmosphere inside the shop is not conducive to this highly perishable crop.

In order to reduce output losses cool transportation should be introduced, especially for tomatoes which travel over a long distance, or at least transportation should occur during the night when the temperature is less than day time. During retailing, the tomatoes must be graded according to ripeness and the retailer should be induced

to be more flexible in his display, handling and pricing policies.

In an attempt to dispose of summer surplus and diversify production to avoid waste, a canning factory has been built in D'hok the main area for summer tomato production in northern Iraq. This is in addition to the Kerbala factory which absorbs some of the surpluses from the central production areas. But there is still room for further small canning factories in production areas. These will encourage production in remote areas suitable for tomato production, but where there are difficulties in transportation. Thus it would be possible to achieve a better balance between production and consumption, reduce output losses and solve the problem of tomato transportation.

#### 1.4 Cleaning, Grading, Classification and Packaging

Most producers do not clean their crops before packaging and dispatching to the market because of a failure to appreciate the importance of this aspect and a scarcity of workers. Therefore, most of the domestic products are not attractive to consumers. Moreover, soiled crops, though they may be of high quality, will not be considered first class and do not gain a good price in the market. Obviously, soiled crops are more likely to incur damage since they are a good media for bacteria and fungus. It is necessary to clean most crops before dispatching them to the market.

Effectively, there is no grading and classification made for most vegetables, though some traditional methods are followed for fruit. Usually farmers put the worst quality crops into the bottom of the container, followed by medium quality and the best quality at the top in the hope of gaining a better price as the buyer

supposedly thinks that the whole crop is good. However, buyers are rarely so gullible and the price paid to the producer is based on the equally unreliable assumption that most of the crop is of low quality. This dubious marketing method has led to a loss of confidence between producer and buyer but this situation could easily be resolved if the farmer were to grade and classify his crop according to acceptable criteria. He would then gain a good price for the good products and avoid unnecessary transport costs for dispatching products which will not be sold in the market.

In addition, classification of crops according to ripeness is necessary to avoid damage to the over ripe crops which, typically, farmers put at the bottom of the containers to confuse buyers. This causes more damage to this most susceptible part of the crop which, if it is to have any value at all, must be treated particularly carefully and speedily, or separated out for processing.

If crops are classified and graded then purchasers will be more easily persuaded not to insist on picking up their own because they will become prepared to accept that quality is constant. This will be a fairer system for all and the resultant output losses will be less. All this implies that not only is a greater degree of regulation and efficiency needed, but also a greater degree of mutual trust between the parties involved if the marketing process is to be streamlined. Producers should not pay for the dispatch of poor quality products, nor will they gain the confidence of consumers if they do. The consumer will pay according to the quality which he purchases. The national economy will benefit as well since output losses will be less, domestic production will satisfy a higher proportion of national demand, and, ultimately, the national food import bill will be replaced by export earnings.

Packaging is another important operation in the marketing process. The containers can play a major role in preserving crops during their marketing process both during the stages of transportation and whilst being displayed. If the containers are suitable for that sort of crop, damage will be prevented. But, unfortunately, some containers used in marketing fruit and vegetables are not suitable. Examples include not only the boxing of tomatoes, already discussed, but also crops like grapes. In the transportation of fresh grapes, large wooden boxes are used, thus damaging the lower fruit. Similarly, using sacks in lettuce marketing affects the quality, whilst boxes can keep lettuces in good condition for several days during the transportation, handling and displaying stages. Where sacks are still used, as is often the case, retailers pile them on the ground to give consumers the option of testing the quality before buying, a process which obviously causes more damage to the crops. Traditional containers which are used in Iraq for fruit and vegetable marketing are relatively heavy. This creates difficulties in transportation and handling and increases the cost of marketing. A 'packaging revolution' is therefore required and whilst, clearly, the costs would be far from insignificant, it has now been shown that for all except the most resilient of the crops, this would have a profound effect on rates of loss or damage.

### 1.5 Conclusion

Recent developments in Iraq over the last three decades, and particularly during the 1970's, have meant that the population structure has changed dramatically. Distribution of population between rural and urban areas has been reversed. The proportion of rural to total population decreased from 63% in 1957 to 36% in 1977, along with a high

rate of population increase which is currently estimated to be 3.3%. Moreover, personal requirements for food have changed as well. The demand is for a greater variety of nutritious food products all year round. Most of these products are fragile, sensitive towards atmospheric change and seasonal. They need more care in marketing. This has made the task of making agricultural products readily available to consumers difficult. Consumers now require fresh and good quality food all year round. Therefore, whilst recognising that some loss is likely always to be inevitable, the infrastructure must be available to do the task with far less output loss.

However, the infrastructure does not exist in most areas. Transportation suffers from inadequate roads, especially those which link the farm and rural areas to the main roads. This situation has led to transportation delays and to output losses amongst the more fragile crops during transportation, and an unnecessary increase in transport costs. Moreover, the fragile crops in some remote areas are sometimes left to spoil because vehicles are not available at the suitable time. Most fruit and vegetables are transported by ordinary vehicles which are usually open with no protection from the sun or rain. Such vehicles are not suitable for transporting these commodities. Covered, specialised, and often refrigerated vehicles must be introduced to preserve fruit and vegetables during transportation and to reduce crop damage. Rural roads must be developed to provide farms with access to the main roads in order to make transportation easier and faster. The use of Iraqi Railways must be developed as a means of transport during periods of maximum production.

Storage facilities for cereals are in a better situation than that of other agricultural products such as fruit and vegetables and livestock. The state is continuing to build silos in those areas where

production is concentrated. In addition, there are large silos in the major cities whose capacity has been expanded. For other products, however, there is still a great need for further storage facilities; in particular a need for cool and refrigerated stores throughout production areas and consumption centres. These stores will act as a buffer for most products to make them readily available in the out of production season and to minimize output losses. The workers in these stores must be well-trained and efficient and the stores must be supplied with their own generator in case of electricity failure on the national grid.

Losses therefore happen at all stages of the marketing process, between harvesting and consumption. The inefficient use of machines in crop collection results in ruined crops. These machines need to be used properly in order not to damage crops. Harvesting should be at a suitable time since any delay in the harvest will result in a loss of crops through exposure to wind or birds or insects, or simply because of passing their optimum condition. After harvest the crops must be transferred to appropriate stores or to the markets immediately or else be placed under protection until the proper vehicles arrive. The vehicles must be suitable for a particular crop, in size and quality. The arrangement of crops in the vehicles is important as well because haphazard loading may cause damage to the lower containers and crops. Heavy loads cause crops, especially those filled in sacks, to crush under pressure and this increases crop damage. Therefore, the load should be suitable for a particular crop.

Most of the agricultural products' main markets do not provide good marketing facilities. For example, insufficient warehouses cause increased output losses, since no provision is made for excess sun or rain. These markets need suitable warehouses to protect crops

from damage until they are dispersed to retailers and some cool stores to keep unsold crops for another market. Traditionally mishandling causes damage to the containers and spilled crops. This increases output losses in the main market. Therefore, the main markets should be provided with modern machinery for unloading and loading commodities. This will decrease the need for workers and consequently decrease the cost of marketing and decrease the losses because of workers' mishandling. Further output losses in the retailing stage are brought about by consumers handling the goods and an inappropriate atmosphere in the shops. These can be prevented by grading and classification of the crops so there will be no need for consumers to look for the best quality and by making facilities available in the shops such as cooling and ventilation to keep the commodities fresh.

Cleaning of the products must be done to make them more attractive to consumers and to reduce output losses. Grading and classification are necessary to organize marketing by giving the option to purchasers to buy the grade of product they wish at appropriately differentiated prices. This will increase confidence between all those involved in the marketing process. The prices must be studied carefully in order to encourage producers to concentrate on production of the higher grades in order to gain more profit, while consumers will purchase good quality.

The problem of packaging is an important factor in the marketing process. Insufficient containers create difficulties for transport, store and display of retail products and hence increase in output loss. In Iraq there are various sorts of traditional containers most of which are not suitable for carrying the products both in terms of their size and the materials from which they are made. Therefore, they increase the cost of transportation and crop damage. However, there are now

modern plastic box factories, producing boxes which are better than traditional containers, but are only suitable for some varieties of products and unsuitable for others. Not least, the use of plastic containers can cause severe 'sweating' of vegetable matter, and therefore very rapid deterioration of the product. Therefore, this industry must develop to produce a variety of boxes suitable for such products. Materials such as cardboard and wood should be used more widely and sensibly for the making of generally smaller and shallower containers than is currently the case. Some of them must be designed for use once only, since some sensitive crops are affected if second-hand containers, which often encourage the spread of bacteria and fungus, are used.

Thus, despite the government of Iraq's major attempts to reform the marketing process, some problems remain. Governmental efforts have been concentrated on the essential major foodstuffs and some other industrial crops, involving, in particular, subsidization policies. Therefore, the less essential products such as much of the livestock sector (see Ch.5) suffer from traditional as well as new problems even though most prices are controlled by the government. With such commodities more assistance in the form of infrastructural incentives seems to be the only real solution. With further government involvement in the physical requirements of the marketing stages - better roads, improved, crop-specific storage facilities and processing plants in particular, the private producer can be encouraged to increase production, in the knowledge that his efforts will not go to waste, either because of less than adequate payments for the crops or because of wastage en route to the consumer. Similarly, a more efficient niche will have been created for the middlemen - private or public sector - serving the industry because, not only will they be operating within an

improved physical framework, but also the government will, justifiably, be able to make much more advanced calculations about the costing and timing of the whole process. Further savings, more than compensating for the cost of these improvements, will therefore be made.

Whilst recognizing that the theory is always more easily stated than is the reality achieved, it should now have become clear that losses in particular crops at particular stages are sufficiently great, not only to justify immediate action, but to guarantee positive results should such action be taken.

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## CHAPTER TWO

### METHODS OF AGRICULTURAL MARKETING IN IRAQ

In the early years after the Second World War Iraq was basically self-sufficient in agricultural production, largely because of the structure of the population which, in 1947, was 64% rural. Not only was the rural population producing its own food, but also, of the remaining 36% of the population, although classified as town dwellers, it would seem that about half were dependent on agricultural activities for their livelihood. There was considerable fluctuation in productivity from season to season, due particularly to flooding because of inadequate water control measures and to pests, with such insects as locusts, in some seasons, destroying the whole production of certain crops. Nevertheless, despite this nearself-sufficiency, the traditional methods of farming, particularly the use of draught animals and primitive tools caused low yields. Further, traditional types of storage facilities, poor roads and the dominance of non-mechanised transport, all of which limited marketing activities, meant that local producers invariably sold such surpluses as they had at nearby markets.

Iraqi society has undergone great changes since that time. Not least was the impact of the first Agrarian Reform Law in 1958 which dealt with the redistribution of land. Agricultural marketing in modern Iraq today, therefore, bears little relation to the immediate post-war situation: it is the purpose of this chapter to examine these current methods and the factors which have brought them about.

#### 2.1 The Marketing Process Involving the Private Sector

Iraq has some justification for claiming that it is the 'home' of agricultural marketing systems. The ancient Sumerian civilization flourished, not least on their successful disposal of their agricultural

surplus. As a modern Iraq evolved, prior to the introduction of either much international trade, or the arrival of modern techniques, involving agricultural surplus, there was the gradual evolution of a method, whereby middlemen emerged to provide a link between producers and consumers. This was particularly so where producers of non-agricultural products needed basic food-stuffs and had money to pay for them. As the population structure changed over the years and urban communities began to dominate Iraqi society the role of the middlemen became increasingly important since the gap between producers and consumers widened. Middlemen controlled the buying, transporting, storing and selling of all crops whether basic foodstuffs or, increasingly, as the 20th Century advanced, luxury items.

With the widening of the gap between producers and consumers the former were less able to gauge the demand for their goods and the intervention of middlemen became increasingly important. Indeed they were able to encourage producers to respond to consumers' demands by supplying vital commodities such as seed and agricultural equipment and even money. Their influence became powerful in the retail sector too in their control over transport, marketing and storage.

Initially middlemen served a vital role. They encouraged activity and themselves supplied much of the necessary capital. Of course they also bore the risks involved and often suffered in consequence. But over the years their manipulation and monopolization of the system and their generally questionable techniques of "buying low and selling high" regardless of social or wider economic considerations, led to a loss of confidence in the system by both producers and consumers. In principle, the high profit margin available to the middlemen should have encouraged more participants with a concomitant benefit to both producers and consumers, but the 'cut-throat' nature of the activity simply meant that

newcomers were positively discouraged and an increasingly elite core of middlemen continued to prosper.

Because of the basic need of the farmer to dispose of his produce middlemen were able to employ methods which though ostensibly proper, were open to easy and regular abuse. Many methods were employed, including the following five:-

- 1) Buying at the very low "farm gate" price which would be far less than the market price.
- 2) Arranging purchase before the actual harvest.
- 3) By buying using unofficial weight and volume measures.  
For instance, although such measures as the Tighar, Wazna, Mann and Occa are nationally recognized as terms, they differ in value from one part of Iraq to another - by as much as 300% between Mosul and Basrah for example.
- 4) Buying a crop by volume and selling by weight or vice versa.
- 5) Lending money at unofficial rates of interest: There are six basically different processes by which loans are arranged and marketing organized; some of which are confined to particular crops.
  - (a) Through a bilateral agreement whereby creditors and middlemen give farmers certain sums of money and/or seeds on condition that, in return, the crops are sold back to them against commission. Alternatively crops are sold at a pre-determined price at the time of the loan.
  - (b) Marketing, using travelling merchants, who, during harvest time can be found in the villages negotiating directly with the farmers, often using unofficial weights and measures. They,

in turn, sell to the town merchants, their profit including the difference between the official and unofficial weights. The farmer gains by not having to leave his farm at a busy time but loses in that the price he receives for his crop will be minimal since the merchant must get his 'cut' from the arrangement. He may even be acting for a town merchant, at a commission. This particular method is generally restricted to cereals, largely because, not being easily or rapidly spoilt, risks associated with these aspects are minimal.

- (c) Direct marketing by the producer to the retail outlet at a price already agreed upon, with an agreed percentage being deducted as commission and an adjustment (allowances) being made for discrepancies in the weighing and measuring of the crop. This method was followed in the areas adjacent to urban centres where it was easy for the grower to deliver his vegetables to market. There is much scope for increases in this system as transport facilities and vehicle availability improve.
- (d) A curious system whereby a local trader with vehicles, seed and money etc. will 'borrow' a farmer's land without any formal charge on an annual basis and cultivate it himself. The resulting crop is shared on a roughly 50-50 basis dependent upon soil fertility and land location. If he wishes, the owner of the land may, in fact, sell his share to the 'partner' at the 'farm gate' price. These traders, who, in their business, often employ numerous workers to cultivate the land so 'borrowed', frequently take care of the entire marketing process and settle up with the owners either

in cash or in kind or both on the basis of the original agreement at the end of the relevant season. This method is found particularly in the rainfed areas of the country especially around Al-Jesera in the north west, where 70% of wheat, Iraq's main cereal crop, is produced.

- (e) The bulk of the fruit and vegetables crop is sold by auction in the city markets. Fruit is usually auctioned by weight except for some citrus fruits. Oranges in particular are sold at each stage by number, bidding usually being for units of 1,000.
- (f) Fruit and vegetables can be sold by agreement during the morning's bidding, when a retailer will agree upon a price with the farmer. Middlemen may sometimes be involved in these deals. This method circumvents the auction and involves less risk, but may also fetch lower prices. Its great advantage to the producer and to the purchaser is in time saved by not waiting about for the auctioning to proceed.

Wholesale marketing processes which contribute to increases in the price of a commodity do not, of course, occasion any actual improvements in the crop. The middlemen, in the private sector, exist not only to provide a service, but to make money by whatever means, even involving the deliberate misuse of weights and measures. If the first to suffer in this process are the farmers, the consumers are the second since what is bought from the former at the lowest price is sold to the latter at the highest.

However, these modes of marketing had succeeded in dominating agricultural production distribution because of the non-existence of a public sector or farmers' co-operatives to look after their own interests. This domination has both advantages and disadvantages as

far as the producer is concerned. On the plus side is the financial capability of the private sector to pay immediately for the crops or to provide loans before harvest with delivery and transport being provided and their ownership of good storage facilities, particularly for the storing of cereals giving a regular all year round supply and a greater flexibility in marketing. On the negative side is the fact that a general lack of education amongst the peasantry left them at the mercy of the middlemen who had over the years accumulated considerable expertise in determining crop qualities, and also the farmers' frequently urgent need of cash, making them very dependent upon the middlemen's goodwill.

## 2.2 Developments in Agricultural Production in Iraq

Changes in the structure of marketing procedures in Iraq reflect, however, not only the fact that the former marketing system was dominated by private practice : they are also a reflection of major changes in the nature of agricultural production. Introducing modern machines, whether for general agricultural tasks such as tractors, or for specialised activities such as combine harvestors has increased the ability to cultivate more land more easily, especially on the plains in the rain-fed area in the northern part of the country where it is very convenient to use machinery economically. This has encouraged producers to cultivate more land to satisfy the increasing demand. But the problem here is that all such parts of the country depend on a rainfall which fluctuates from year to year as well as from season to season. Therefore, in the 1940's and 1950's production of cereals was more stable than it is now because cereals were cultivated in all the fertile areas of Iraq including the irrigated lands in the central and southern parts of the country, where there was a guaranteed water supply. As a result the fluctuation was less, despite the ever constant risk from locusts or flooding. These

two risks are now almost completely eradicated by the building of dams and pest control.

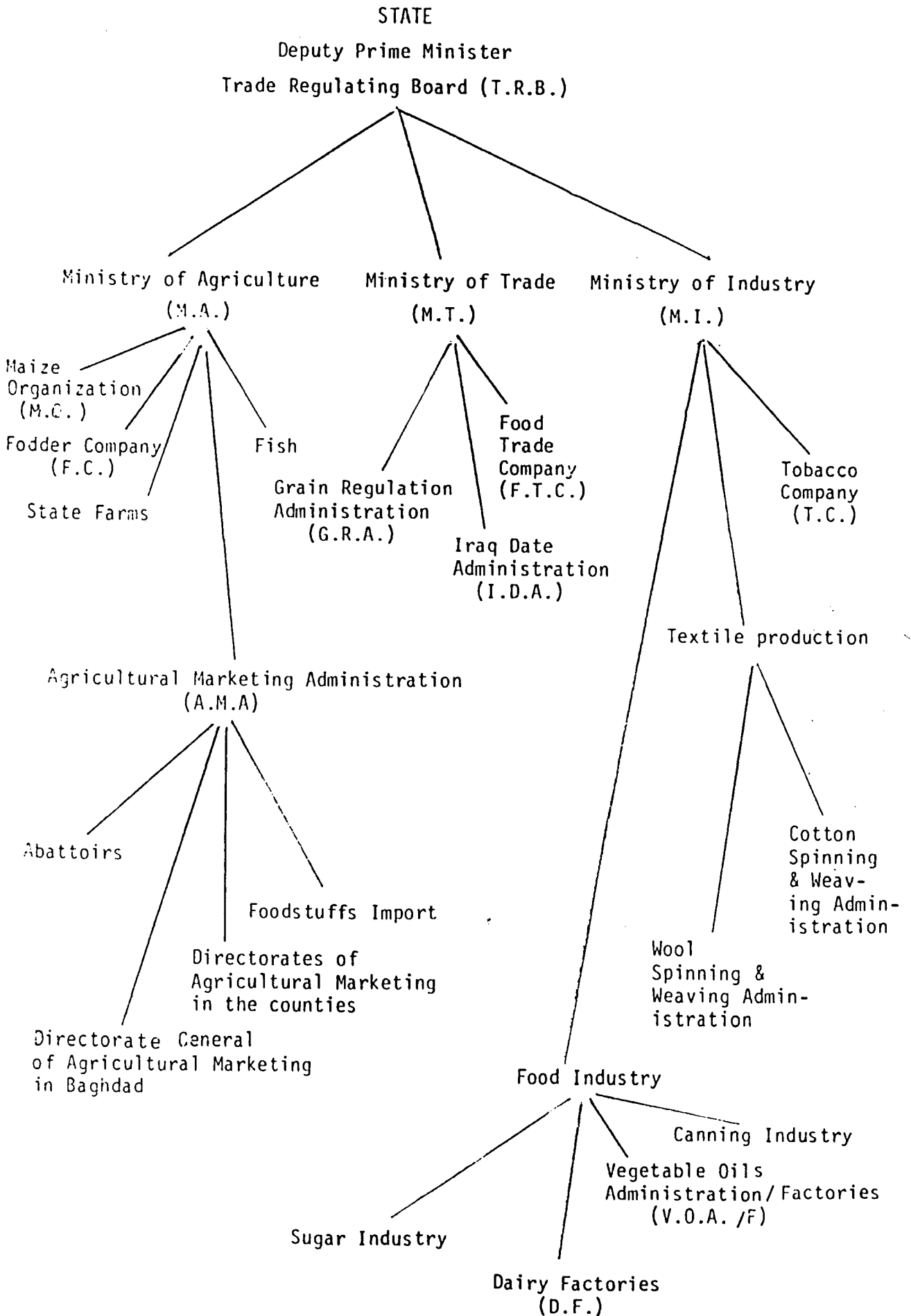
Changing peasant habits especially in the southern part of the country where better communications have led to a widening of rural-urban contacts has encouraged very many of them to change their cereals cultivation into the production of the vegetables for the newly-accessible urban markets which have created a high demand, although some farmers manage to grow both types of crop. This quite basic change in agricultural outlook played a major part in the serious decline in cereals export with its concomitant problems.

By the 1960's and 1970's, it would seem that very many peasants had changed their cereal cultivation in the irrigated lands, especially those near urban centres to vegetables particularly those in high demand. Gradually as society developed new industries and new demands people began to change their eating patterns. They wanted new foods, therefore, new crops were introduced such as potatoes, and there was an expansion in the production of other crops such as tomatoes which were previously considered non-essential crops. In addition, the emergence of such industries as textiles and chemicals (pharmaceuticals) lead to the development of industrial crops such as cotton and oil seeds.

### 2.3 Iraqi State Organizations which deal with the development of agricultural products

The current administrative system by which agricultural products are marketed or processed has evolved particularly since the late 1960's and early 1970's and falls into three main groups, (see Figure 2.1). The first group belongs to the Ministry of Agriculture and Agrarian Reform which deals with fruit and vegetables, poultry, meat and fish. The second group which deals with cereals and dates is dealt with

Figure 2.1 Iraqi State Organizations which deal with the development of agricultural products



by the Ministry of Trade because of their international significance. The final group belongs to the Ministry of Industry which deals with industrial crops or products such as cotton, wool, milk, skin, oil seed, sugar beet and cane and tobacco. Although responsibility for the use of the agricultural products is thus divided, the Ministry of Agriculture and Agrarian Reform remain responsible for all aspects of actual agricultural production. The wide scale of agricultural products and their diverse nature make it difficult for one organization to deal with the overall marketing, hence the decision to co-ordinate and co-operate with other specialized ministries in marketing these various products.

The Ministry of Trade is responsible for external and internal trade (commerce). It can co-ordinate trade in certain agricultural products with other sorts of trade, especially for the international market. It is, thus, responsible for marketing those products which play a major role on the international market such as wheat (import) and dates (export). It is the ministry which is able to organize international trade most satisfactorily because it is the policy-forming unit in terms of the needs of foreign trade.

The major role of the Ministry of Agriculture is in dealing with agricultural production and marketing on the domestic front plus a minor involvement in the import of small quantities of perishable agricultural products which have little relation to the international market or which need rapid marketing is mainly restricted to the Ministry of Agriculture. Similarly, and equally logically, the Ministry of Industry is responsible for the marketing of industrial crops and products in order to make these products coincide with the needs of national industry, and for processing such products according to domestic demand.

The purpose of this system is to organize marketing of agricultural products at the lowest cost possible by making the specialized organizations responsible for the commodities which they are dealing with. There is coordination between the organizations responsible for producing and disposing of the products. The aim is to benefit from the experience of each organization in the field, using its specialized knowledge and practices.

Whilst, of course, the state wishes to achieve the best result possible by making agricultural products readily available for various purposes at reasonable prices, using the easiest possible method with lowest marketing costs, there are certain priorities for achieving these aims. The prime aim is to feed the people. Other aims include making raw materials readily available for the national industry, increasing the export of surpluses and decreasing imports, diversifying domestic production, emphasising wholesome foods and industrial products, and increasing farmers' income concomitant with national income. This system developed in order to meet the needs of an expanding economy and it is possible, if future events require it, for it to change and adapt to meet new conditions.

The government justifies its involvement in the marketing process because it recognizes that marketing is one of the most important components of the agricultural sector of the economy, the improvement of which is considered to be one of the major factors in achieving higher production goals. It is seen as the main element in the increasing number of successful new developments, and is regarded as the main means of achieving reasonably good prices for both producers and consumers.

It is impossible in planning to have improved agricultural production without assuring that there is a reasonably good market price

for the producers. The two main factors which have a major effect on the producer are the price obtained for and the ease of disposing of his products. There are difficulties in marketing most of the agricultural products, not least but not solely because of the role of middlemen, and one of the main aims of this thesis is to highlight the particular marketing difficulties which specific commodities generate.

The aim of the producer is to get a high income from his product to develop his livelihood, while the consumer's aim is to get the products at the lowest price while maintaining good quality. The state, in addition to its acceptance of these aims seeks to encourage national self sufficiency by decreasing imports and increasing exports. This would help to lessen the reliance on oil exports which is under the control of external forces. The aim is therefore to guarantee that a higher proportion of the benefits of agriculture go to the producers and the consumers. Therefore, it is necessary to establish an efficient system for the marketing of agricultural products which would, on the one hand, help producers to obtain the best prices coupled with a minimization of the costs incurred in transportation, storage, packaging etc. and, on the other hand, make commodities more readily available with better quality and quantity at reasonable prices to the consumers.

It is necessary to consider the underlying need for a constructive plan that would coincide with the objectives of the national development scheme in order to achieve greater efficiency in the agricultural sector to enable it to play a full role in the establishment of a modern Iraq. In this way it is possible to improve the socio-economic position of the farmers and decrease the differences between rural and urban populations. This is one of the most important aims of the present government.

#### 2.4 The aspects of pricing policy and subsidization

By the early 1970's government intervention involved introduction of laws and guidelines to organise and control the methods of marketing and price-fixing, with the state buying and selling the main agricultural products in order to satisfy the needs of both farmers and consumers. In addition, the government intervened to subsidize some major crops such as wheat in order to ensure a high enough price which would encourage the producer to stay in this activity, and at the same time to ensure a reasonable price for the consumer for such a staple crop. This subsidization policy is still followed, despite the high cost, because wheat constitutes by far the most important crop in trade terms in production, importation and consumption.

The principles adopted by the government for intervention in marketing and subsidization of certain commodities are based on the commodity's relative importance both for producer and consumer. Commodities are divided into three groups : essential (staple), less essential (standard or normal) and luxury. For staple crops the government aims to make the price stable for consumers whilst at the same time taking into account both inflation and production costs for the grower : therefore, the price paid to the producer (buying price) by the government increases, whilst the selling price to the consumer is constant. Producers of wheat therefore received increasing prices year after year while at the same time consumers were buying bread or flour at a constant price over a number of years.

To prevent the re-sale of subsidized wheat on the Black Market, all grain is immediately stored in government stores and silos from where it is taken as required to mills and bakeries. Even imported wheat is encompassed by this policy. The price of imported wheat is of course subject to international market price, but the price to

the national consumer is the same as for domestic wheat. Government intervention has controlled or balanced the home production and imported production prices. The national producers are therefore protected from price speculation if the two products are almost the same in quality. The most important aim of the government is to fix a reasonable price for both producers and consumers. This is direct subsidization, the price of selling being lower than the purchase price. The cost of transportation, storage and containers is borne by the government.

For such less essential commodities as eggs, broilers and meat, the policy of subsidization is different. The proportion of subsidy is less than for staple commodities. It is sometimes 'unseen' subsidization since the price of selling and buying is almost the same, the marketing costs, transportation, storage, containers etc. being borne by the government. Subsidization of those commodities depends upon a variety of fluctuating circumstances such as national economic and individual income and is standardized. The aim is to help to foster production until the stage at which the activity becomes self-supporting. For example, government subsidization in the broiler chicken industry was never intended to be permanent and was abolished in 1981, since when many successful private schemes have gradually emerged although the demand can only be met by importing frozen broilers. The subsidizing policy of the government is then temporary for these commodities and is specifically aimed at generating change and introducing new commodities.

The amount of subsidy depends on the decreed dietary importance of the product. It has been constant for wheat, but is gradually decreasing for eggs and meat, because they are less important than bread for the individual Iraqi, and international prices in general are increasing. Luxury commodities carry no government subsidy or price control whatever.

Briefly there are six factors considered when government pricing takes place :

- 1) The prevailing market prices for a particular crop.
- 2) Production costs.
- 3) The 'importance' of the crop according to official agricultural policy .
- 4) The relationship between supply and demand.
- 5) The encouragement of production 'out of season'.
- 6) The relative shortage or abundance and price of comparable or alternative crops.

With factor 5 the government's purpose is to expand the production period, in order to increase the availability of certain crops rather than to concentrate production into a short period. This applies particularly to such crops as tomatoes and melons, which are very difficult to store in good fresh condition for later distribution. With this longer production season it is possible to balance supply and demand and thus avoid a glut in one season, with associated risks of crop deterioration, and a lack at other times with concomitant price rises. This obviously applies exclusively to perishable foodstuffs. The government usually avoids intervening in the pricing of these earlier products to enable the producers to maximise their profits in the first period since prices will be reduced after a short period of time to levels associated with normal 'in season' production costs. The reason why the government allows this freedom in pricing is to compensate for the fact that early production involves higher production costs than normal owing to the need to employ special techniques. The government wishes to encourage such developments as part of its policy to increase diversification and to encourage the introduction of new commodities. The government thus hopes to encourage a greater level of self-sufficiency and a higher level of consumption of home-grown items, including those defined as luxury foods.

The policy followed for the pricing of luxury foods is, however, very different from that pertaining to staple foodstuffs. Whereas the price for the main staple crop, wheat, remains stable throughout the year, the prices for commodities such as, for example, grapes and pomegranates are generally allowed to fluctuate according to market forces.

With factor 6, the aim is to attempt to rationalize a situation where crops of a similar nature are available at different times and in varying quantities and to meet the vagaries of public demand so that the producer suffers as little loss as possible. The aim is to try, by encouraging the production and consumption of genuine alternatives to balance scarcities and abundance and public demand with a pricing structure which is fair to both growers and consumers.

#### 2.5 The Structure of Agricultural Products and Foodstuff Pricing

As with any state-directed system, there is a hierarchy of decision-making. At the top, national level is the Baghdad-based permanent committee, "Central Committee for Pricing of Foodstuffs". This committee, although obviously closely connected with the relevant ministries, not least because its chairman is invariably the representative of the Regulating Committee of Trade, is autonomous within its decreed area of jurisdiction. Its members comprise one representative from each of:-

- 1) Regulating Committee of Trade.
- 2) Ministry of Agriculture - Agricultural Marketing Administration.
- 3) Ministry of Trade - Trade Control.
- 4) The Central Pricing Authority.
- 5) General Union for Co-operatives.
- 6) Baghdad Chamber of Commerce.
- 7) Control and Inspection Organization within the Ministry of Agriculture.
- 8) Directorate General of Security - Economic Branch.

This committee can consult any one deemed to have relevant experience.

Below this national committee are the County Branch committees, which are the lowest administrative level. These consist of :

- 1) Deputy Head of the County Council.
- 2) Main market director.
- 3) Head of local union for co-operatives.
- 4) Director of internal trade for the county.
- 5) A member from the local County Directorate of Security.
- 6) A member for the Local Peoples Bureau.

The duties of this administration are the pricing of fruit and vegetables in each county according to local conditions, in addition to the factors outlined previously. Anomalous situations can arise whereby a county which is not itself a producer of foodstuffs will ensure an adequate supply by purchasing from a neighbouring county at an inflated price leaving the producing county with a shortage! It would seem therefore that to ensure equitable distribution for fruit and vegetables all over the country the prices must be co-ordinated centrally or at least between the neighbouring counties, according to production and transportation costs.

The organization of policies involving control and inspection is in the hands of the Ministry of Agriculture and Agrarian Reform and the Department of Trade control. They also inspect general security systems in order to achieve the proper functioning and implementation of the Trade Regulating Board and Pricing Committees laws and decisions.

The duties of the central and branch committees for pricing foodstuffs which the Ministry of Agriculture and Agrarian Reform deal with are as follows:

I. Fruit and vegetables

1. The committees fix the prices for the main fruit and vegetables as well as for other fruit and vegetables as necessary as follows:
  - a) By fixing a minimum price for wholesale (producer price) for the first and second grades and not allowing its purchase from producers below that price.
  - b) By fixing a maximum retail price for first and second grades and not allowing goods to be sold at a higher price than this.
  - c) When pricing, the factors considered are : production cost for particular crops; demand and supply; nature of the crop; nutritional importance of the crop; determining the price for second grade commodities so that production and marketing costs are still covered. It is hoped that this scheme will encourage producers to improve the quality of their products.
  - d) The committee advertises the prices for some fruit and vegetables which the A.M.A. may have contracted with state farms, as well as limiting wholesale and retail prices for those commodities in the light of their estimate of national supply and demand.
  - e) Some flexibility is permitted in the retailers 'mark up' price but not beyond 60% above the wholesale price.
2. The A.M.A. determines its commission for each operation.
  - a) It retains 3% in the case of vegetables and 2% for fruit of the wholesale price obtained.
  - b) The committee determines fees for the loading and unloading of each unit according to the weight.

3. The central committee can fix the price of some of the main fruit and vegetables both for the producers and for the consumers, at a single, national, level in order to avoid regional price differentiation which can affect the distribution of crops to local markets.
4. The central committee fixes the prices for imported fruit and vegetables in order to prevent the price of imports falling below that of national crops of similar quality.
5. Once the prices for fruit and vegetables are fixed they are announced in the media each week.
6. Official prices must be followed by all retailers in all local markets and shops. In addition to public awareness, the committee has employees who check that these changes are implemented.

## II. Livestock products

The committee fixes the prices for national and imported livestock products as follows:

- a) The pricing of national livestock products according to the prices decided by T.R.B. For instance some decisions of the pricing committee during December 1980 were:-

- (1) The fixing of the price for broiler chickens produced by state farms; for the retailer 660 Fils/kg and for the consumer 700 Fils/kg.(94p and £1.00 at 1980 prices).
- (2) The fixing of the price for live chickens from private and co-operative sectors as received by A.M.A. centres: 460 Fils/kg purchasing price from co-operative sector; 510 Fils/kg from private sector.

The reason for this difference is due to the fact that the co-operative sector is more subsidised than the private

sector. Also equipment and fodder prices, which are usually supplied by the government, are less than for the private sector.

- b) The pricing of livestock products imported by the government is according to the total cost of imports plus a profit margin no more than 10%, since the quality is usually very high and the retailer stands to lose only a very small proportion of his consignment.

For livestock products pricing is centrally controlled and, therefore, branch committees are not involved. The aim is to balance the prices especially for imported poultry products (frozen chicken and eggs) with national production, since most of the excess of demand over supply has been met by importing frozen broilers and eggs, and the growth in the demand for these products has been high all over Iraq. This is an attempt to make distribution equitable.

## 2.6 Marketing Policy and Practice for Selected Agricultural Categories

### 2.6.1 Fruit and vegetables

Whilst the T.R.B. specifies the crops which the A.M.A. must buy should a surplus develop, it is the responsibility of the A.M.A. to buy, at official prices, all surplus remaining unsold after a specified period. Compulsory buying by the A.M.A. involves:

- a) Checking that the specific crops conform to the general characteristics of that crop as defined by law.
- b) Buying according to the quality of the crops at the time of buying, and according to the grades and prices decided by the committee.
- c) Buying at times specified by the Ministry of Agriculture and Agrarian Reform's decision.

- d) When the commodity is of very low quality, requiring its owner to sort it in order that the good part of it can be bought, leaving the seller to dispose of the sub-standard part by private means as best as he can.

In all of these calculations, because of the intrinsic nature of fruit and vegetables, a margin of error of 3% is allowed and incorporated in the price-change calculations.

The A.M.A. disposes of crops according to the following descending order of priorities:

- a) The demand in various different markets.
- b) Potential for sale, following storage in the hope that demand for the crop will increase. The amount stored depends on the storage capacity available and the nature of the crop e.g. potatoes store easily whereas grapes have a short shelf-life.
- c) The export potential.
- d) Transfer to factories for processing.
- e) Finally if no potential exists using any of the previous factors, destruction of the commodities takes place, the costs being borne by the A.M.A.

In addition, the government subsidises the A.M.A., making up for the losses incurred because of its policy, by profits in other agricultural marketing areas, whilst the A.M.A. can make a contract with the producers on state farms or co-operatives for a given % of the fruit and vegetable crop according to the prices already determined by the central committee for pricing.

### 2.6.2 Cereals

Cereals constitute between 85-90%<sup>(1)</sup> of the cultivated area in Iraq, the most important being wheat, barley, rice and maize. Wheat in particular and barley are grown by the vast majority of farmers, some 66%<sup>(2)</sup> of the land under cultivation being devoted to these two cereals at any one time. Wheat is the most important crop in terms of the area cultivated and the quantities produced and is very important for the individual Iraqi diet. There is hardly any meal without bread which is usually made from wheat. Barley on the other hand is a major animal fodder. However, despite being such a basic crop, marketing problems arise because production of wheat fluctuates greatly from year to year according to the amount of rainfall and regularity of the seasons, since almost 75% of the land under wheat is in the rainfed area. This is an important factor affecting wheat marketing and particularly its pricing since wheat is a staple crop. Without government intervention, in years of ample supply prices would be low and in years of poor harvest prices could rocket beyond the reach of the poorer families. In addition the effect of the international market is strong, not only in respect of quantities available and concomitant prices but also in respect to the political factors involving food, given that the food crisis over almost all the world is seen by many analysts as being, above all, a 'marketing' problem.

All these factors necessitated state intervention in order to regulate the marketing, both national and international, of cereals. The government seeks to control prices, prevent speculation and monopolization, ensure adequate prices for producers, and make bread and flour readily available to consumers all the year round at a reasonable and constant price.

State intervention involves not only direct price subsidization, but also the introduction of laws and guidelines for regulating cereal marketing and control of the methods of marketing and the establishment of a system capable of implementing these policies. These activities have been developed gradually according to experience and previous practices in this field in order to solve the problems and overcome the obstacles facing the industry.

The state organization which is responsible for cereal marketing is the Grain Regulating Administration (G.R.A.). It was established according to Law No.199 in 1969 and started its activities in 1970 to control commerce in the basic cereals (wheat, barley and rice), by co-operation between the Ministry of Agriculture and the Ministry of Trade. Its aim is to ensure a basic human food supply with controlled reasonable prices by regulating the marketing of cereals and balancing the quantity available by exporting or importing. Its activities include building silos, quality inspection and the weighing, storing, classifying and grading of cereals.

Initially, the G.R.A. was mainly concerned with storing government crops and giving export cereal permits. It was in this area that grain merchants had played the major role in this activity and controlled prices. Initially when the G.R.A. started buying cereals the merchants started increasing wheat prices to enable them to sell at the higher official price the quantities which they had previously bought from farmers at lower prices. An additional profit was available because of the difference between official and unofficial weights used when negotiating with the farmers. The result was the farmers obtained small profits, whilst merchants benefited from government subsidisation policies, with the state bearing the difference between purchase prices and sales prices to bakeries. Therefore from 1970 the government

decreed that co-operative and collective farms must sell their wheat to the G.R.A. at its price. A bad season and high wheat price at the local markets according to supply and demand role compared with the G.R.A. price led many of the farmers to choose not to deliver their wheat to the G.R.A. that year.

Initially, in 1970 the G.R.A. had bought wheat both for the State Milling Company and the Bakeries and Ovens Administration. The sole purpose of the buying by the G.R.A. was to intervene between these two administrations and the producers, in order to ensure regular supply, thus creating a situation similar to buying on international markets. The method which was followed by the G.R.A. for national wheat buying was through its special committee, which, not initially having the power to fix wheat prices, bought according to prevailing market place circumstances.

In and following the 1971-72 season cereal prices have become more stable due to the intervention of the G.R.A. as a buyer, able to limit the prices by government authority.

#### The co-operative marketing of cereals

Undoubtedly co-operative marketing is considered one of the most important of the co-operatives activities. It is seen as a method which, if efficiently done, will not only reduce marketing costs, thus benefitting the consumer but, above all, by the nature of a co-operative should benefit all the producers collectively. Co-operative marketing in Iraq since being established in 1964-65 has passed through two main stages: 1) Voluntary marketing, and 2) Compulsory marketing.

#### Voluntary Stage

This stage started in 1964-65 when grain was marketed co-operatively

Table 2.1      Development of co-operative marketing of cereals during  
the period between 1964-65 to 1970-71

Year	Cereal	Quantity marketed (metric tonnes)	Value Iraqi Dinar (ID)	Members involved	Co-operatives involved
64-65	Wheat	224	6,720	- *	8
	Wheat	478	14,340	465	16
65-66	Barley	- *	- *	- *	- *
	Rice	19	545	88	- *
	Wheat	655	20,643	728	7
66-67	Barley	147	3,169	564	10
	Rice	225	15,244	270	4
	Wheat	2,046	45,268	2,279	79
67-68	Barley	185	3,314	552	15
	Rice	1,538	61,160	295	8
	Wheat	2,359	76,362	2,639	70
68-69	Barley	12,000	174,525	2,000	69
	Rice	2,856	115,776	1,897	30
	Wheat	6,219	221,814	5,554	115
69-70	Barley	1,745	37,230	2,400	67
	Rice	3,758	172,896	2,682	33
	Wheat	3,997	164,193	7,260	104
70-71	Barley	1,074	34,060	2,171	45
	Rice	6,630	284,714	5,500	36

Source: Al-Nawfal, S.J. (1978) Cereals Marketing in Iraq, Baghdad p.76-77.

\* - NO DATA

for the first time in limited quantities. The member had complete freedom to sell his crop as he wished, in any quantity. The aim of this stage was to let the member experience the benefits of this method of selling in comparison with individual selling to merchants. Co-operatives marketing their products to the merchants obtained a better price because of the better dealing involved in this method.

By 1970 G.R.A. was buying the production of co-operatives for the first time. As a result of the benefits for those members who dealt with the G.R.A. directly, the quantities marketed through the G.R.A. increased year after year. At the same time the number of members and co-operatives selling their products increased (see Table 2.1).

Compulsory Stage. (Partly restricted and completely restricted)

To avoid depressed cereal prices in good seasons, it was decided in 1972 to apply a partial restriction on the marketing of wheat, barley, and the two most important and superior strains of rice.\* According to this decision, the production from co-operatives must be sold to the G.R.A. at prices fixed by the Trade Regulating Board (T.R.B.). So merchants and other producers who previously had freedom to sell their products to G.R.A. or not as they preferred now lost this right. (According to the partial restrictions plan, in 1972 G.R.A. had bought about 383,000 tonnes of wheat and 42,000 tonnes of barley at state prices, including 125,466 tonnes of wheat belonging to co-operatives, and 24,655 tonnes of barley. This amount constituted a large jump in co-operative marketing compared with the immediately previous years).<sup>(1)</sup>

The marketing plan for 1973 aimed at dominating the state and co-operatives sector in commercial cereals by imposing the following restrictions:-

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\* Anbur and Ghayba

All cereal marketing to pass through the G.R.A., thus preventing merchants and middlemen from dealing in cereals. The co-operatives were obliged to buy cereals from members and producers and to deliver it to the G.R.A. at the official price. Finally, the price was stabilized to avoid a lack of confidence in the system amongst farmers who would otherwise suffer when prices fell.

The partial and complete restriction plans for 1972 and 1973 emphasized that the state and co-operative sector must play a major role in cereal marketing to prevent exploitation by the merchants of the farmers. The result was to increase co-operative members' income, by controlling the weight of their products by using mechanical weighing balances and banning the long established practice whereby merchants lowered their prices against an arbitrary valuation of the crop. This system continued until 1978-79 when new regulations were introduced.

Regulations governing the marketing of wheat, barley and rice issued in 1978-79 restricted the entire marketing operation to the G.R.A. and made it illegal for merchants, middlemen, mill-owners and fodder factories to deal in cereal marketing.

To achieve this aim a hierarchy of decision-making was set up. At the top national level is the "Central Committee for Cereal Marketing" whose chairman is always the head of G.R.A. However, the agreement of the appropriate Deputy Prime Minister has always to be obtained, before the publication of the list of prices.

The committee comprises one representative from each of:-

- a) Head of G.R.A. (Chairman) Ministry of Trade.
- b) General Union of Co-operatives.
- c) Ministry of Agriculture and Agrarian Reform.
- d) Directorate General of Co-operation. Ministry of Agriculture.
- e) Secretary from G.R.A.

Its duties comprise:- checking that marketing is done according to the plan, treating problems and obstacles as they occur, answering questions coming from the Branch Committees, and laying down extra guidelines necessary for easing cereal marketing. The major question of price fixing and the overall strategy is in the hands of central government.

The second tier consists of 18 County Branch Committees for wheat and barley and 5 for rice. Each committee consists of:-

- a) Deputy Head of the County Council (Chairman).
- b) General Director of Agricultural Department.
- c) Director of Co-operation.
- d) Director of Marketing Department.
- e) Head of Local Union for co-operatives in the County.
- f) A representative of G.R.A. in those counties in which G.R.A. silos exist.

Ad hoc members may be brought into these committees as is necessary.

The functions and duties of a County Branch Committee are varied, but include:-

- (1) the prosecution of people found illegally dealing in cereal marketing.
- (2) the granting of permission for up to an annual maximum of 5 tonnes of wheat and barley and 0.5 tonnes of rice, to be paid to workers in this sector rather than money provided that they do not re-sell it.
- (3) the fixing of the opening and closing day in Marketing Centres (M.Cs .).

- (4) the organizing of co-operation between neighbouring M.C.s for the greater efficiency of both, particularly when stocks in one area are too low for sound economic trading.
- (5) the fixing of the tariff for transporting grain to silos and stores which then remains constant for that season.
- (6) the establishing of the local committees which are based on M.C.s - 64 for wheat and barley and 30 for rice - all of which are centred on grain producing areas.
- (7) the reception of grain produced by the relevant farmers against a payment of 100% of the value to them. These centres aim to make crop delivery easy to farmers and less expensive, thus encouraging them to deliver their product direct rather than to deal with middlemen who had usually bought the products direct from the fields. These marketing centres are managed by Local Committees (L.C.s) comprising agricultural experts and one or more of the co-operative members, plus some assistants.

A Marketing Centre is a depot in the middle of a production area. Its task is to receive grain from producers and pay for it. The task of the producer is to deliver the cereal to the M.C., while the G.R.A. transfers the cereal to its silos. Usually a M.C. has at its disposal weighing and storage facilities and is near a good road network.

On receiving the crop two operations take place immediately : weighing the crop and sampling for analysis in order to ascertain the grade and variety for which a certificate is given. Afterwards the consignment is collected according to variety and the producer receives full payment. This contrasts favourably with the beginning of governmental marketing where only 80% was paid initially, the remainder often taking weeks or even months to reach the farmer. The producer's

task in that crop's progress to the consumer is finished once he has received his money. Subsequently M.C.s classify and grade the crops before sending it to the silos.

The local farmer is responsible for taking his crop to the nearest M.C. and must pay the cost of unloading and weighing plus a tax of IF100 per tonne, whilst the G.R.A. bears the cost of transferring the grain from the M.C. to its silos and stores.

The third tier of management, the Local Committee (L.C.) is responsible for a whole list of interrelated administrative tasks. These include the weighing, classifying, grading and analysing of the grain at collection centres ready for transportation to the area silos. The L.C. is also responsible for such practical concerns as the hiring of the necessary work-force and the appropriate vehicles and for the total distribution of the grain sacks so vital to the whole enterprise. Maintaining a high crop standard also falls to the lot of the L.C. who have the authority to refuse poor quality or contaminated deliveries. They are also responsible for the safety of the entire crop at the local depots until it reaches the silos, even to the extent of having a committee member accompany each convoy.

Every stage of the movement of grain from farm to silo has to be strictly monitored and the L.C. is responsible for issuing and filing the appropriate documentation. Farmers are paid according to all the aforementioned criteria and the L.C., through the offices of the G.R.A. is able to offer loans and banking facilities. Throughout the system there exists a degree of flexibility enabling farmers to opt for 'on the spot' negotiations which is particularly practical where a number of small farmers work as a co-operative but all committee members must be in attendance.

## Maize

In Iraq maize is almost exclusively a fodder crop, and its importance has increased concomitantly with the increasing demand for fodder as a result of the expansion of, in particular, poultry schemes. Only the cob features in the commercial process : green maize fodder is unimportant and outside state control. Maize production and marketing is controlled by the Maize Organisation, established in 1968 with the assistance of the FAO.

The method followed for marketing maize is that there are a number of marketing centres in the counties in which production of maize is concentrated. Maize is delivered by producers to these centres, which then send the crop to the silos where stripping and drying is carried out. The crop is sold to the Fodder Company (F.C.) according to conditions agreed upon in advance. By 1978 the main marketing restrictions imposed by the M.O. were:-

- 1) Maize had to be delivered on or off the cob, but not a mixture of both.
- 2) Producers have to let the Marketing Committee know about the quantity they hope to market in advance in order to fix the day of delivery to avoid uneven marketing.
- 3) The M.C. arranges a rota for the local areas for the receipt of the crop on specific days.
- 4) The total amount delivered must not exceed 500 tonnes daily in order to avoid congestion on the roads and enable adequate storage facilities.
- 5) Payment must not be delayed more than 20 days after the date of delivery to the M.C.
- 6) The purchase price for the producer must be according to the latest

decision of the T.R.B (in 1978, ID58 on the cob and ID61 for grain per tonne). If the moisture level was shown to exceed 17% of total bulk, appropriate price deductions would be made. A spoil allowance is made up to 2%; for each % spoilage from 2-5 the equivalent deduction is made; after 5% the crop is rejected. 'Foreign' grains are acceptable up to 8%.<sup>(2)</sup>

- 7) The F.C. collects maize grains from the maize growing counties, amongst which Babylon predominates, within a specific period after drying and stripping.
- 8) The M.O. can sell maize to the private fodder factories via the F.C.
- 9) The M.O. lends seed grain and equipment to the producers, the cost being deducted from the final selling price.

Thus, since the early 1970's, the government has controlled all aspects of commercial cereal marketing, whether this be for human or animal consumption.

### 2.6.3 Lentils and Chick Peas

One other important group of crops require special consideration. The government, through its Food Trade Company (F.T.C.) started purchasing lentils and chick peas in the early 1970's thus giving producers the choice of selling these two crops directly to F.T.C. instead of to the merchants. The profit made by producers in selling at official weights and prices to the F.T.C. encouraged them to continue selling increasing quantities to the F.T.C. and to persuade other farmers to follow their example. The merchants, seeing what was happening raised their purchasing prices from producers in order to compete with the F.T.C. By this strategy they managed to purchase most of the crop with the result that the F.T.C., given that it lacked statutory powers of monopolistic purchase, suffered a shortage of supply.

In order to regulate and satisfy the F.T.C.'s requirement of making these crops readily available to consumers an attempt was made by the General Union of Co-operatives (G.U.C.) to intervene between the F.T.C. and farming co-operatives. The method followed was that the F.T.C. gave credit to co-operatives and supplied them with containers in order to persuade them to sell their products to the F.T.C., the G.U.C. receiving a commission of 1%. This method was followed up to 1975-76.

With the obvious success of government-organized cereal marketing, the state was encouraged to follow similar methods for the marketing of lentils and chick peas. To prevent speculation and competition with the private merchants and to ensure a regular supply of lentils and chick peas to the F.T.C. a restriction plan was introduced in 1976-77 similar to the method of restriction operating in the cereals marketing.

The plan was basically similar to the cereals marketing plan and restricted the sale of lentils and chick peas to the public sector (F.T.C.). However, the County Branch Committees (C.B.C.) are found only in the four northern counties where these two crops are concentrated, Nenavah, D'hok, Arbil and Sulaymania. These committees comprise an equal number of representatives from agricultural departments and branches in these counties of the F.T.C. Their duties consist of supervising the marketing operation. The Agricultural Department jurisdiction in each of the counties mentioned established Local Purchasing Committees (L.Cs) in production areas to make marketing easier. However, where such a committee does not exist for whatever reason an F.T.C. branch can purchase the crops directly from producers according to official prices and with the same conditions. In 1977-78, 12 M.Cs were established in production areas, similar to the successful M.Cs for cereals marketing. In each M.C. there is an L.C. responsible for management of these centres, one of whose members is an analyst from the F.T.C. who tests the crop on site, enabling the L.C. to pay the producer 100% of the crop value immediately compared with

the previous practice when payment was made anything up to 20 days after delivery.

At the end of the 1977-78 lentils and chick peas marketing season a committee was instituted by the G.U.C. and the F.T.C. to suggest new methods for 1978-79 in the light of recent experiences in order to develop further the marketing of these two crops. This committee issued regulations for governing the marketing of lentils and chick peas which had the agreement of the T.R.B. and the government. These regulations comprised the continuation of restrictions on marketing lentils and chick peas which were to remain solely in the public sector and, by implication, the continuation of prohibition upon merchants dealing with these two crops; any crops found being marketed outside this system were to be confiscated and those responsible prosecuted; and the setting up of a Central Committee, comprising representatives from the G.U.C. and the F.T.C., in order to check that marketing is done according to the plan, treat problems and obstacles as they occur, answer questions coming from the C.B.C.s and lay down extra guidelines necessary for easing lentils and chick peas marketing.

Finally, the Central Committee had to institute Branch Committees in the four producing counties, Nenavah, D'hok, Arbil and Sulaymania. These committees, the six members of which comprise the Government Agricultural Department, the Head, a Cashier, Head of Marketing and Director of Co-operatives, plus the county Head of the U.C. and a branch member of the F.T.C. have to supervise the county marketing procedures, but they are not directly involved with the purchasing of the crops. Their duties involve making cash, vehicles, sacks and relevant facilities available to local M.C's; arranging analysts' timetables for the most efficient use of their time and examining any appeals from farmers. To this end they are obliged to meet every 15 days at least. Finally, they

are responsible for the setting up of Local Committees of which there is a total of 16, in the particular production areas. These LCs, the third and lowest tier of management, comprise an agriculturalist, an analyst, a cashier and a local U.C. representative. The L.Cs' duties, which are basically the same as those equivalent L.Cs dealing with cereals, are, above all, responsible for the purchase of the crop from the producers and the running of a Marketing Centre in each of their areas (which functions as a short term depot and collection point).

The monetary regulations and controls which facilitate the marketing of chick peas and lentils through their various stages involves the following:

- 1) The Ministry of Trade credits Branch County Committees with appropriate sums to ensure that money is available for the L.C. to pay the farmers their money immediately.
- 2) The Ministry must also pay 1% of the value of the marketed crop to the G.U.C. as commission for its involvement in regulating the marketing.
- 3) Producers bear all the actual costs of marketing up to delivery to the local depots.
- 4) The Ministry of Trade bears the cost of transferring the crop from these depots to its stores.
- 5) The G.U.C. bears the cost of any 'normal' variations in weight which are the consequence of the proper marketing process, whilst abnormal variations will be the L.C's responsibility. For instance, chick peas are acceptable with up to 3% of foreign bodies, while lentils may have up to 7% of the weight comprised of 'other material'. At higher levels than this, a reduction in the price will be made.
- 6) In order to encourage cleaner crops the Ministry of Trade pays an additional 1% on the value for each % of purity.

- 7) The Pricing Authority fixes any price increase, on the basis that the previous season's price is regarded as the minimum.
- 8) The price of a damaged crop will be reduced by ID10 per tonne for chick peas and ID5 for lentils, since all the quantities arriving at the M.C. have to be purchased by the L.C.

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When the systems operating for the marketing of all foodstuffs in Iraq, whether for human or animal consumption, are viewed from a distance it can be seen that there is a danger of superfluity of stages and committees, which although created in order to increase the degree of correlation between production and the consumption demands of the state do not necessarily benefit the economy when it is measured in its widest terms. There are, in some instances, examples when money has been spent which benefits neither the farmer, nor the consumer and is a drain on the Iraqi exchequer.

For example, is it necessary, when local farmers opt to have their grain analysis done 'on the spot', for every member to be involved? Surely two, one of whom being the analyst himself, are capable of overseeing this operation. Or in the case of lentils and chick peas, is there a need for the Agricultural Department to be represented by 3 members when one could adequately operate?

A further saving in bureaucracy and money is possible by having a single committee in any given area being responsible for more than one commodity where this is geographically and seasonally practicable. Is it perhaps a more viable method of management to have elected committees of the Agricultural Department functioning on a permanent basis rather than a constant appointing of committees which serve for a limited period in a limited field?

At the end of the day, the Iraqi marketing procedures for these essential food items have to be such that the administrative costs of this complex system of bureaucratic decentralisation and control do not become excessively high, and certainly do not exceed, as a proportion of total production costs, the profits formerly enjoyed by the merchant element.

## 2.7 The Marketing of Industrial Crops

Since Iraq has been interested in building up its national industries, the making available of raw materials is very important, and industrial crops have featured prominently in this policy. Successful marketing methods for these industrial crops can play a major role in making these crops readily available at a reasonable price, quality and quantity, for these national industries.

Cotton marketing formerly took place directly between farmer and factory. The method was that the producer brought his cotton to the factory, where it was weighed and analyzed and the value of the crop paid to the farmer after some days; this method was followed up to 1977. The farmer could sell his product to the private sector if preferred. Because of an increasing demand for cotton both from the private and the public sector and the competition between them to purchase this crop from producers and the variations in the methods followed in purchasing and the ease of disposing at high prices, severe shortages of supply to the public sector textile factories resulted. Such factories were thus obliged to buy cotton from the free market at a higher price. For example, from 1973 to 1975, Iraq imported cotton to the value of ID 8.5 million. Consequently, in order to make cotton readily available for the national textile industry it was necessary to regulate its cultivation and marketing, and for instance, in 1975, Law No.158 was issued (see Appendix ). It sought to make cotton much more

readily available for the national textile industry. To this end regulations were invoked governing varieties allowed to be cultivated and areas permitted under license, seed varieties to be made available, price fixing and disease and pest control. Further, the establishing, running and general management of all cotton mills would be closely supervised by the government appointed Cotton Development Administration (C.D.A), a branch of the Ministry of Agriculture. Tight control would be exercised over movement of cotton and cotton-seed in and out of the factory whether for textile manufacture or further processing, and import and export of all cotton severely restricted. Experimental centres could only operate under licence and the breaking of any of these regulations incurred severe penalties.

In order that these regulations should be interpreted effectively guidelines were issued in 1976 setting out detailed criteria for all aspects of mill operation. Engine capacities were fixed, bale size standardized and stores, yards, warehouses and laboratories subjected to rigid specifications. Equipment for the various processes involved were introduced and mills required to fall into line with these recommendations by a given date when a license would be granted. Penalties would be imposed where guidelines were flouted.

Further guidelines in the same year concentrated on the processing aspect of cotton and cotton-seed and aimed at improving the quality of cotton available and drew particular attention to the unacceptability of mixing any of the 6 major grades of cotton. Some higher grades could be mixed in certain authorized situations but the mixing of the lowest with any other grade was strictly prohibited and only this grade could be made available to the private sector.

These guidelines were also concerned with classifying and standardizing things like bale size, make-up and identification, seed

packaging and storage, and the keeping of detailed records.

As regards the actual methods of cotton marketing, in 1979 the T.R.B. instituted a hierarchy for cotton marketing similar to that for other crops, except that here the Ministry of Agriculture and the Ministry of Industry were the two government departments involved, plus the G.U.C. Marketing Centres, often temporary depots alongside a local co-operative, were established in all production areas, the season for cotton collection and redistribution running from 15th September to the 1st February. The norm for the moisture content of the cotton was fixed at 11%; if more than that a % deduction would be made, if less a bonus would be given. The cost of the difference in the two weighings - at M.C. and factory - was to be carried out by the G.U.C. whether a plus or a minus. The M.Cs carry insurance against loss, damage and theft of cotton. Cotton from the producer is weighed and analysed and payment made by the L.C. at the depot, not, as previously, at the mill.

When a consignment reaches the mill and is weighed on more sophisticated machinery any discrepancy is borne by the G.U.C., a percentage allowance being made for changes in moisture content. Cotton must be transferred to the mill according to variety. The M.Cs organize the transport but the mill bears the cost at a predetermined tariff agreed by the Head of the local County Council.

#### Oil Seed

In Iraq the seeds of many plants are utilized in the production of vegetable oils which are used in both the food and pharmaceuticals industries. These include sunflower, sesame, soybeans, linseed, cotton and safflower. In order to make the raw material readily available for this industry the government intervened by restricting and regulating the marketing of these seeds. By the time of intervention, some of the

oil seeds had developed to such an extent that they not only satisfied domestic demand, but there was a surplus available for export. The reason for this intervention and restriction was that the demand by the private sector for seeds such as sunflower, which is in high demand as a confectionary, and consequently the price paid by the private sector was frequently higher than the official price and was thereby threatening state-defined uses of the crop. Therefore, producers preferred to sell their products in the private sector letting the government sponsored Vegetables Oil Factories (V.O.F) suffer shortages. In order to make oil seed readily available as required by the V.O.Fs, coordination was essential between organizations responsible for producing and selling the oil seed and the purchasing organizations.

The first plan was started in 1978 to restrict sunflower marketing to the public sector by restricting the sale of sunflower seeds to V.O.F thus preventing merchants and middlemen from dealing in this commodity. In order to facilitate this ruling new cultivation plans were brought in detailing areas to be used for sunflower cultivation.

Sunflower seeds production having exceeded 1,000 tonnes per year, new M.Cs were opened in Sulaymania, Diala and Qadisia so that even the smallest producer could take his crop to a relatively local depot, rather than to Baghdad where all processing is located. The responsible organization for every aspect of sunflower seed processing in the Vegetable Oil Administration (V.O.A) which follows much the same role as the committees for other crops in organizing collection, weighing, analysing etc. and supplying staff, vehicles and equipment. The only significant difference is that the producer must share equally with the V.O.A. the costs involved in transportation including the cost of

containers, an indication of the official view that this is a less-essential crop than some of the foodstuffs discussed earlier.

For linseed and soybeans the same plan initiated in 1980 was followed with emphasis on cultivating these crops on the state rather than on private farms for supplying to V.O.A. However, sesame continues to be used by both the private sector for processing into making Tahini and by V.O.A. for making some food oils. Producers of sesame have freedom to sell to whichever sector pays more and has better marketing facilities, the government having accepted that the private sector is functioning efficiently and in the national interest with respect to this crop.

#### Tobacco

The state control of tobacco marketing was inaugurated in 1976 when it was decreed "illegal to sell tobacco which is cultivated in Iraq to any other than the Ministry of Industry or specified organizations within this ministry." \* Thus, 1977 saw the setting up of 19 'receiving committees' responsible for receiving and classifying tobacco, plus 3 appeal committees which investigated farmers' complaints. These committees pay producers in their areas without delay according to the variety and grade. To encourage high levels both of quality and quantity bonuses are available to producers supplying the market with large quantities of high quality tobacco. Grading of tobacco depends upon flavour, colour, vein texture and leaf size. The Ministry of Industry bears the cost of rolling and packaging the leaves and transporting them from M.C. to Tobacco Company stores.

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\* (Law No.3, 1976, Tobacco cultivation - regulation and development)

### Canning and Processing of Fruit and Vegetables

Whereas, with the marketing of fresh fruit and vegetables, the government only exercises partial control, by methods already seen, the marketing of such crops associated with their canning and processing is entirely under government control. The establishment of a fruit and vegetables canning industry in Iraq has benefitted not only the grower but the government, the retailer and the consumer. The cost to the government of providing cool and refrigerated transport is significantly reduced as goods need not travel great distances between farms and local canning factories. This also results in decreased damage to crops otherwise incurred. The farmer then benefits because his seasonal surpluses are not so subject to immediate supply and demand factors and thus result in more stable prices. The retailer reaps the benefit of this modern approach to food marketing since he has readily available not only a greater variety of commodities i.e. fresh, tinned and liquified tomatoes, but also is ensured of a more regular year-round supply of otherwise seasonal foods which all have a far longer shelf-life than their fresh equivalent.

These benefits are all passed on to the consumer who also has the added advantage of readily available convenience foods whose preparation time is usually considerably reduced. The availability of canned foodstuffs has widened the variety of foodstuffs consumed by the average Iraqi family and contributed to the improvement in their diet but there are still areas open to improvement particularly the setting up of further area canning factories to deal with the local crops and thus further reduce transportation costs and losses. The introduction of factories capable of canning a variety of crops at different seasons would be more cost-effective than single-commodity enterprises. Inevitably the whole canning industry is directly related

to the availability or otherwise of the basic crops and a greater degree of flexibility in canning 'lines' would enable factories to adapt more readily to the problems of price and quality and supply. Also, a factory which can can a variety of crops at different seasons is far more likely to be efficient than is a single-commodity enterprise.

Two purchasing methods are normally followed. The official pattern is for the canning factory to advertize its specific needs as to quantity, quality, price and period and to negotiate with suppliers who bid for the contract. These suppliers may themselves be farmers or may have farmers 'on contract' for a given crop. However, this has proved somewhat unreliable since contractors are subject to problems related to the unreliability of market sources and dramatic price changes and are often unable to honour their contract. As a result canning companies have been obliged to adjust their procedure and now tend to purchase directly from the wholesale markets (3) which may well mean that the factory has to pay higher prices than would be desirable. Occasionally the quality obtained may not be suitable for processing.

As an example, the method followed for purchasing tomatoes for canning is by establishing collection centres (depots) in the areas where this crop is concentrated. These depots receive tomatoes directly from producers at prices fixed in advance. This method of marketing has made tomatoes readily available and has reduced the stages of involvement by middlemen, thus contributing to a more effective canning industry than that for other fruit and vegetables.

## 2.8 Conclusion

In Iraq there are two basic methods for agricultural marketing: The traditional methods for marketing almost all Iraq's agricultural crops prior to the Revolution was Free Enterprise involving many merchants and middlemen.

Middlemen were the pioneers in negotiating between producers and consumers and played a large part in encouraging producers to expand their production in line with prevailing market needs and to adapt their patterns of production and distribution in order to make their products readily available for the consumers at the time and place where demand was significant. The ultimate aim of the private middlemen was to make a profit and they were, therefore, quite prepared to alter any aspect of agricultural trading to achieve this aim, but the majority were sufficiently astute to realise that neither producer nor consumer had to be squeezed to such an extent that they were forced out of the system. Dubious methods were followed by private middlemen at different times and in different areas. Various non-standard measurements were used and a wide variety of commissions were offered; frequently middlemen indulged in risky speculations which put all the partners at risk (including themselves), and the monopoly which characterized this free enterprise approach had serious repercussions for producer and consumer alike. Obviously in such a system, it was quite impossible to follow any planned economic structure.

After the 1968 Revolution the government quickly introduced legislation to control all aspects of the production and marketing of the staple cereal crops in order to prevent speculation and monopolization which were rife in the free enterprise system. Further, controls aimed at guaranteeing that a higher proportion of the benefit of agriculture

would go to the producers and consumers rather than speculative middlemen and would encourage national self sufficiency were introduced. Over the intervening years controls have been introduced for all products of major significance to the Iraqi economy. Certain luxury commodities however are still allowed to follow market forces.

Thus three systems now run parallel in Iraq, with the approval of the state marketing controllers.

- 1) For essential products State control is all encompassing. The Government Department determines prices, purchasing procedure, transport, storage, packaging, distribution, subsidies and factory management.
- 2) For less essential products the State intervenes to the extent of dictating price and purchasing procedure while allowing other aspects to be in the hands of either the public sector or the private sector according to the State's ability to be adequately involved, i.e. shortage of, say, civil servants or storage facilities might lead to the government opting out of dealings in certain commodities.
- 3) After initial attempts at control which proved unacceptably costly to administer the production and marketing of almost all luxury crops is now in the hands of the private sector although, with some 'borderline' items the government still determines the price.

Where the government fixes the price of any commodity this remains constant for at least one year for the essential products although that may not be so for less essential items. These prices are studied by the Pricing Authority and fixed by the special committees for marketing each separate product. The prices arrived at aim to ensure an equitable figure for both producer and consumer, and will take into account the production costs, and the relative importance of the product. Moreover a subsidization policy is strictly followed

for all essential crops, e.g. wheat and rice.

Laws and Guidelines provide the framework for the current methods of marketing and following these Laws and Guidelines has, over the years, resulted in the introduction of many new ideas which have revolutionized the agricultural industry in all its aspects. However, some traditional techniques still exist and their continued use inhibits even further growth i.e. the use of jute sacks in conjunction with a combined harvester should be superceded by the use of trailers which is a highly cost-effective method.

Viewed overall State control in agriculture has benefitted the vast majority of the population and has led to a higher standard of living for the nation and a more equitable distribution of food throughout the socio-economic strata of the people. However, the government must not be afraid to re-assess schemes and practices which prove to be either costly or difficult to control, as they have already done with regard to luxury crops. There is a constant danger that an excess of bureaucratic involvement will lessen the many beneficial impacts which removal of the private middlemen or their substitution by the organs of the state have had, and this must be watched for.

References

- (1) Al-Nawfal, S.J. et al., (1978), Cereal Marketing in Iraq, Baghdad, pp.8-82.
- (2) Ajill, J.H. et al., (1979), The Style of Co-operative Marketing in Iraq, and the State of the General Union of Co-operatives, Dar-Elsayad Press, Baghdad, pp.26-129.
- (3) Al-Sukoti, M. et al., (1978), Fruit and Vegetables Marketing in Iraq, Baghdad, p.35.

### CHAPTER THREE

#### THE VOLUME OF MARKETED AGRICULTURAL PRODUCTS

Although a poor second to oil in terms of export earnings, agriculture, as we have seen, is the largest sector within the employment structure of Iraq, and remains second to oil as a contributor to the national income.

The volume and the value of those agricultural products which are marketed is thus of crucial importance, not only within the context of this study, but for the Iraqi government as it follows its economic policy.

Agricultural marketing, like any other marketing activity, is a balance between, not only consumers and producers, but differing goals. The aim of national agricultural self-sufficiency is to reduce imports and decrease reliance upon foreign products by encouraging producers to increase home production of basic foodstuffs which are in increasingly high demand as the population grows and its tastes become more varied. On the other hand the government's continued need for revenue from the agricultural export market is furthered by attempts to control quality and quantity and to encourage expansion in those crops which are in high demand abroad. Moreover, political considerations are very relevant and considerably affect choice of markets and prices charged. These two major elements do not always go hand in hand. Initially Iraq must feed its people and export only that which is in surplus but to acquire foreign currency it becomes important to grow crops, ideally those especially suited to the soil and climatic conditions of Iraq, specifically for export, despite the fact that the home market for such items may be small.

The aim of studying the volume and the value of agricultural crops which are marketed is to assess their importance both to the producer in terms of financial reward and to the consumer in terms of value for money and to balance these with the long-term need for export revenue.

There has always been a shortfall between production and consumption of the sum total of agricultural products, due, above all, to variability in the production totals because of a whole range of interrelated factors. The function of agricultural marketing is to bridge this gap, which differs from crop to crop. The variations are dependent both upon national production which suffers from wide fluctuations and upon the availability of scarce crops on the international market with the consequent effect upon prices, and upon the domestic consumption, which has increased according to the population growth on one hand, and people's habits and tastes on the other. There has been an important change in people's eating habits during this century whereby they demand more nutritious foods which were previously considered luxuries such as meat, eggs and many varieties of vegetables, particularly tomatoes. As a consequence of this, changes in farming patterns have had to be made. For instance, most of the irrigated areas which were previously confined to cereals are now generally given over to the production of vegetables. The result of this change over has been an increase in the problems of cereal production in that nowadays most is grown in the rainfed areas with, given the unpredictability of seasonal rainfall totals, an increased variability in annual cereal yields. This inevitably increases the problem of marketing since the demand for cereals has not been reduced.

As the demand for food grows, but outstrips the producers' capacity to meet this demand, the inevitable consequence, without government intervention, is a rise in price to the consumer of all foodstuffs.

These factors serve to illustrate the importance of agricultural marketing and in particular the crucial element of making foodstuffs available to satisfy people's demand. It is necessary to encourage producers to increase their productivity by improving their returns. Also, the marketing system must investigate the export potential for certain crops to create alternative sources of hard currency. The ideal agricultural marketing system must balance all these factors to produce the most appropriate result possible. Only through a knowledge of the amount and variability of the production of and demand for each crop can an understanding of the marketing problems be gained.

Therefore, the present chapter investigates the production of and demand for some significant crops grown within Iraq and assesses the size of the gap between production and consumption and the part which marketing plays in helping to overcome this problem.

To achieve this understanding, the following areas are investigated with reference to the chosen crops, cereals, and fruit and vegetables:

- 1) total volume of domestic production;
- 2) the variability of domestic production, and its causes;
- 3) total volume of domestic consumption;
- 4) the changing purchasing power of individual consumers within Iraqi economy;

- 5) assessments of any surplus or deficit between production and consumption;
- 6) methods for meeting any deficit and disposing of any surplus;
- 7) conflict between national policy for self sufficiency and government's need of revenue from agricultural exports.

The fact that the overall agricultural production and its contribution in financial terms to the economic planning of Iraq is crucial to the Government's long term strategy is evidenced by the development efforts which have been made since the early 1950's. The initial plans gave high priority to agriculture, the aim being to produce an agricultural surplus for export by reducing dependence on weather conditions and solving the salinity problems which affect irrigated land. The development plans have allocated funds for several vast land reclamation schemes and integrated farming projects adding nearly one million acres to the country's arable land.

As in many developing countries in the post-war years, Iraq attempted to organize its strategy in a series of 5-year programmes. From 1951-55 the investment allocation to the agricultural sector was ID 57.7 m being 42.7% of total national investment; in the period 1955-59 the amount had risen to ID 82.8 m though the percentage of the total had fallen to 29.3%. From 1959 to 1965 ID 134.1 m were put into the agricultural economy in diverse areas including research, advice, livestock development and silo building.

In the period 1965-69 the Government expressed its support for the agricultural sector by making available ID 146.5 million.<sup>(2)</sup> Unfortunately, for a variety of reasons including material and manpower shortages and simple inefficiencies, only ID 56.3m.<sup>(2)</sup> of the allocation was ultimately taken up. Many of the 'goals' envisaged by the

Agricultural Ministry were never achieved; many were not even attempted. The Government, however, persisted in its backing for the agricultural sector and from 1970-74 increased its allocation to ID 366 m,<sup>(2)</sup> almost as much as to the building industry, though yet again it was not all used, the expenditure amounting to ID 207 m.<sup>(2)</sup> From 1975-81 the amount rose yet again to ID 2,029.6 m. <sup>(3)</sup> representing some 18% of the planned total of government expenditure.

A major thrust of all schemes since 1970 was to develop all rural areas socio-economically with an emphasis on the improvement of agricultural productivity and on the important role of state, collective and cooperative farms. The success of the government's involvement in agriculture is suggested by the following statistics:

- 1) The total production value for 1968 was ID 200.8 m which rose to ID 354.9 m in 1974 and ID 1,280.1 m by 1981, showing an average growth, admittedly not inflation-adjusted, of 9.9% between 1968 and 1974 and 22.1% between 1974 and 1981.<sup>(3)</sup>
- 2) The value of G.D.P. from agriculture was ID 167.9 m in 1968, ID 278.4 m in 1974 and ID 977.0 m in 1981 which reveals an annual average growth of 8.8% (1968-74) and 20.9% (1975-81).<sup>(3)</sup>
- 3) Area under cultivation increased from 9.2 m donums in 1975 to 10.7 m donums in 1981. <sup>(3)</sup>
- 4) Production volume for all crops and livestock products rose from 3.2 m tonnes in 1975 to 11.1 m tonnes for crops\* and 558,000 tonnes for livestock products\*\* in addition to 933 m eggs in 1981.<sup>(3)</sup>

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\* Cereals, industrial crops, vegetables, dates and fodder crops.

\*\* All type of meat, dairy produce, wool and hair.

From this background it is now possible to proceed to a consideration of selected groups of products, in the context of both this considerable, but still insufficient, record of growth, and the seven-point structure previously outlined. Given that dates and livestock are dealt with separately in Chapters 4 and 5, the emphasis here will be on cereals and on fruit and vegetables.

### 3.1 Cereals

Cereals occupy a high proportion of the cultivated area, about 85-90% annually,<sup>(4)</sup> the main crops being wheat and barley. In addition there are the less important cereals such as rice, maize, sorghum, millet and oats. In 1978, for instance, the area under wheat and barley was 8.8 m donums (see Table 3.1), 80% of the total cultivated area in the country.<sup>(2)</sup>

The major problem facing the marketing of each cereal is unstable volume of production, as it can fluctuate widely from year to year (see Table 3.1), and given that the two main cereals have basically similar growing requirements, these fluctuations unfortunately tend to coincide. The most important factor in this fluctuation is rainfall, especially in the rainfed areas of northern Iraq. This factor has a greater effect on wheat production in particular, since 70% of wheat cultivation takes place in the northern part of the country, whereas only 45% of barley is grown there.<sup>(4)</sup>

The wide fluctuation in rainfall can result in serious differences in total production of wheat and barley in particular. This is clearly illustrated in the figures for 1966/7 when only 45% of overall wheat harvested came from the rain-reliant northern region where the average yield was 78 kg. per donum, whereas in 1967/8 70% of production was

harvested in the same area at an average yield of 167 kg. per donum.<sup>(5)</sup> By contrast, the figures for the remainder of the wheat growing areas which rely entirely on irrigation were, 1966/7, 215 kg. per donum (central) and 190 kg. per donum (southern) and 1967/8, 182 kg. per donum (central) and 170 kg. per donum (southern).<sup>(5)</sup>

The factor which has a major influence on rice production is irrigation and the consequent availability of water. Rice is a summer crop which depends on water supply from the rivers or from irrigation canals. However, even here water fluctuates from year to year according both to the seasonal rainfall and to the snow which falls in the winter in the upper catchment of the Euphrates and Tigris. Flooding can also affect some rice growing areas as can climatic factors, insects and plant diseases.

Focussing on this particular example of the volume of cereal production and its variability during the 1970's emphasises the difficult task which the marketing of cereals has to face.

After several years of poor harvest there was a successful cereal crop in 1972 with a total output of 3.9 m tonnes of cereals, of which 1.75 m tonnes were exported.<sup>(1)</sup> The good crop was due not only to ideal climatic conditions but also to the introduction of new high-yielding varieties of seed. Even so in 1973, wheat and barley output dropped to 1.3 m tonnes because of low rainfall. It rose to 1.9 m tonnes in 1974, but fell back to 1.3 m tonnes in 1975. Wheat and barley output totalled 1.9 m tonnes in 1976. The wheat crop in 1977 was affected by lack of rain and was only 0.7 m tonnes, compared with 1.3 m tonnes in 1976; this pattern of fluctuation within the 100% range of 0.7 to 1.4 m tonnes continuing through to 1982 at least : figures which always fall short of internal demand. In 1980, for instance, despite the volume of wheat production being 1.3 m tonnes,

**Table 3.1** Area harvested and domestic production of main cereals in Iraq  
(Area-million donum, Production-million tonne, and yeild kg/donum)

Year	Area harvested			Production			Yield		
	Wheat	Barley	Rice	Wheat	Barley	Rice	Wheat	Barley	Rice
(a) 1963	5.41	3.39	0.32	0.55	0.73	0.15	101	215	462
64	3.16	3.05	0.32	0.90	0.57	0.19	175	188	585
65	5.40	3.50	0.34	1.13	0.74	0.20	209	243	597
66	5.51	3.25	0.33	0.93	0.77	0.19	168	236	572
67	6.02	3.14	0.41	1.03	0.74	0.31	171	234	765
68	6.73	3.61	0.44	1.54	0.99	0.35	228	274	814
69	6.65	3.38	0.42	1.18	0.96	0.32	178	285	750
70	7.03	2.69	0.30	1.23	0.68	0.18	176	254	604
71	3.79	1.58	0.44	0.82	0.43	0.31	216	277	703
72	7.66	2.90	0.38	2.62	0.98	0.27	342	337	712
(b) 73	4.62	1.86	0.26	0.86	0.46	0.16	186	247	615
74	6.53	2.08	0.13	1.34	0.53	0.07	205	257	551
75	5.63	2.27	0.12	0.85	0.44	0.06	150	193	506
76	5.10	2.30	0.21	1.30	0.58	0.16	217	252	779
77	3.43	2.14	0.25	0.70	0.46	0.20	203	214	785
78	5.98	2.86	0.22	0.91	0.62	0.17	152	216	786
(c) 79	Not available			1.50	0.90	0.28			
80				1.30	0.58	0.22			
81				1.10	0.60	0.25			
82				0.90	0.55	0.25			

Source: (a) Al-Nawfal, S.J. et al (1978), Cereal Marketing in Iraq, Baghdad p.26-28-29.

(b) The Middle East and North Africa (1978-9) and 1983-4), Europa Publications Limited, London, p.402-353.

(c) EIU (1984) Annual Supplement p.9.



wheat imports stood at 2.2 m tonnes.<sup>(1)</sup> The overall target of 4 m tonnes has yet to be achieved in domestic cereal production.

Rice production, theoretically more stable, has also fluctuated widely, from 0.35 m tonnes in 1968 to 0.16 m tonnes in 1973, and, even more dramatically, falling to 70,000 and 60,000 tonnes in 1974 and 75 respectively, specifically because of the impact of the building of the Euphrates Dam in Syria.

In contrast, the still minor crop of maize rose steadily from 15 thousand tonnes in 1974, to 23, 55, 82 and 96 thousand tonnes in 1975, 76, 77 and 78 respectively.<sup>(6)</sup> This increase, which is believed to have continued, is concomitant with the expansion in poultry breeding projects in Iraq, both in the public and private sectors, where maize constitutes the major feed. Farmers are not only encouraged to grow maize because of the growth of the poultry industry, but also because there is state intervention, in the form of price guarantees, whereby maize is bought against a previously agreed price which will be not less than that of the previous season from the producer, and special marketing facilities are made available for the crop.

In turning to cereal consumption, it is important to stress that 'consumption' includes grain used for both human and animal consumption, for sowing and also that lost through 'spoilage'. 'Human consumption', where appropriate, will be specifically referred to as such. Also, the assumption is made that all available production is actually consumed. The fact that some may never be consumed, and a considerable amount is consumed in the year(s) subsequent to production must be borne in mind. Compared with the evaluation of production it is a relatively easy task to assess theoretical national consumption, especially for the basic crops since there is little fluctuation in



This table shows unexpected fluctuations, particularly in consumption figures where one would expect a large degree of stability and therefore suggests inaccurate or incomplete data, making it difficult to draw an accurate picture. However, it is reasonable to assume that these wide 'consumption' fluctuations are, at least in part, explained by the fact that considerable proportions of any year's total production may be used in the following seasons. Accepting these points, Table 3.2 and method 1 seem to suggest a relatively constant national consumption rate for wheat. This result is somewhat surprising since the population whose staple diet is wheat rose by about 3 million during that time. At least, though far from satisfactory, we can tentatively suggest that the per capita consumption was declining, in line with the theory that diets were becoming more diverse and less dependent on staples. These figures suggest a national average per capita consumption which fell from 182 kg at the start of the 1960's to 137 kg at the end of the decade; when adjusted on the basis of 10% of the crop not being for human consumption, these figures come very close to the ideal per capita consumption rates of 133 and 129 kg per annum suggested by the G.R.A. and the World Bank respectively. These amounts would yield about 110 kg of flour.

However, according to the family budget research samples undertaken in 1971, the individual 'consumption' was shown to be 178 kg. per annum. (7) These figures seem rather high, and are probably explained by the fact that many, particularly rural, purchasers buy more wheat per annum than they actually consume simply as a form of insurance in case of inadequacy of supply towards the end of the season.

Figures put out by the Nutrition Institution in Baghdad suggesting an ideal intake of 110 kg per year would seem to indicate that the

population as a whole, tends to consume rather more wheat than is nutritionally necessary. This is particularly true of low income families but fortunately it is high in calories and rich in protein, each kg of wheat containing 3,640 calories and 109 gm protein. (7)

The human body needs between 2,000 and 3,000 calories daily, according to age, sex, and the nature of normal activity. 50 g of protein is considered a good average intake. (8) This means that a high proportion of calories, 55%, is supplied by wheat, and the rest, 45%, from all other foodstuffs, and about two thirds of protein from wheat. (7)

Therefore, the volume of wheat available for human consumption should be about 1.95 m tonnes per year, given a total population of 15 m, and average per capita consumption of 130 kg annually .

In addition, the quantities needed for sowing about 150,000 tonnes (25 kg per donum for sowing the 6 m donum under wheat annually) which, with a 3% spoil rate (63,000 tonnes) because of inadequate storage, gives a total domestic requirement of 2.2 m tonnes.

Estimation of barley consumption volume is much more difficult than wheat because barley consumption is not confined to human food intake, being above all used as an animal foodstuff. There is, however, some direct human consumption of barley as flour, especially in the remoter villages, and in addition barley is 'consumed' by the Iraqis as beer. But these amounts are small: whereas something like 90% of all wheat produced is directly consumed by humans, the figure for barley is nearer to 20%. The figures for barley production in Table 3.2 are certainly too low, not least because many animal breeders grow their own barley fodder, and details of such production are not available for inclusion in the official production statistics. Furthermore the state involvement in barley marketing is less than in wheat, since because barley is in high demand, due particularly to the

expansion of animal rearing, government intervention to maintain price and production is deemed to be less necessary. Barley also has industrial uses, such as in the brewing of beer. Al-Nawfal et al (1978) in their study of cereal marketing in Iraq state that the World Bank estimated the per capita needs for barley per year for all purposes direct or indirect in 1972 to be 95 kg. with 5% growth annually, because of the expansion in poultry and animal breeding projects, in which barley would constitute more than 75% of the fodder. Given that the quantities devoted to sowing are about 75,000 tonnes annually, assuming 25 kg per donum for cultivating 3 m donum, allowing for 4% for spoilage, these figures indicate a national consumption requirement for barley of about 1.6 m tonnes. If the figures in Table 3.2 are taken, given the proviso already mentioned, as fairly reliable, then it becomes clear that the difference between barley production and ideal consumption requirements in a typical year is still likely to be considerable. When the needs of the livestock industry are investigated in Chapter 5, the lack of an adequate supply of barley fodder will be shown to be the main reason for the poor relative meat yields per animal, and it is the realisation of this fact that has encouraged those animal breeders in possession of sufficient capital and appropriate land to grow their own barley fodder. It is this element of the crop which, being consumed 'on site', is not yet included in the cereal production figures and which does not feature in the marketing process.

Rice, unlike barley but like wheat, is used almost exclusively for human consumption. Individual consumption per annum in the early 1970's was estimated by the G.R.A. to be c. 25 kg <sup>(4)</sup> a figure which has now (since 1980) risen to c. 40 kg. The reason for this increase is the higher standard of living and the increase in per

capita income allowing this more expensive product to be available in a greater variety of Iraqi homes. National consumption of rice therefore now stands at about 0.6 m tonnes, exclusive of the quantities for sowing, which gives an estimated shortfall in domestic production of up to 400,000 tonnes. This gap has had to be met, in recent years, by an increasing proportion of imported rice, coming in particular from Thailand, Pakistan and the U.S.A.

From these figures, it is clear that the most important crop is wheat of which Iraq produces about half of its annual needs; Although up-to-date detailed figures for the other cereals are not available, it is clear that there is a wide, and possibly increasing gap between the national production and the anticipated or actual consumption demands for such cereals as rice and barley. With all these three cereals, the problem is thus not only one of annual fluctuations in production, but also it is apparent that the average production per annum is failing to keep pace with the optimum consumption ideals which the government aims to achieve. Marketing of cereals in Iraq must thus inevitably fight on two fronts : the national and the international.

The volume of domestic cereal marketed clearly varies according to the fluctuating production volume, for reasons already discussed. Thus a continuously operable flexible system is needed to cope with the large quantities in the infrequent good years, and the shortfall in poorer years, whilst still maintaining a stable price.

The first necessity is an efficient transportation system enabling the transfer of the huge quantities of cereals, which in some years can reach 3.6 m tonnes as happened in 1972. The whole crop must be dealt with within 4 months between the harvest in June and September when

the rains usually begin. This means that 30,000 tonnes need to be transferred, on average, daily (see Chapter 1).

The second necessity is that a sufficient number of sacks is available. Each sack, which costs ID 0.17 contains 100 kg of cereal. This means that 36 million sacks are needed costing more than ID 6 million. In addition, is the labour cost of filling these sacks on site, which is a labour intensive activity, and not cost effective. Using sacks in this way is an expensive method and it is possible to reduce this cost by using trailers working simultaneously with the combine harvester to collect cereal to transfer to the silos.

The third necessity is good storage facilities. Before 1979 the capacity of silos and stores was about one million tonnes. (4) In 1976 the Government authorized the provision of storage facilities for a further 309,000 tonnes, so the total capacity of state-owned storage facilities now stands at more than 1.3 m tonnes. In addition, private stores (siefs) are usually used for storing cereals for their owners' personal needs. These have been described by al-Rawi (1975) who states "the merchant system is based on the old "alawis" and "siefs" and is known as the sief system. These are simple courtyards where the wheat is usually stored in bags, with part of the area roofed over. The alawis are primitive stores where grain losses are high and estimated at about 3%. These stores are not usually mechanised, the produce being handled manually in bags. No services, except for cleaning in some cases, are offered at these storage facilities other than storage. There are some 567 alawis licensed and approved by the grain board, each having an average capacity of 1,000 tonnes. The licensed number of alawis is thought to be only about 40% of all operating grain stores; total alawis storage is estimated to be

approximately 1.4 m tons for all grains, but especially for wheat, barley and rice and including corn, linseed etc." (5)

However, after increasing government involvement in cereal marketing, and expansion in building silos and state stores, some of those "siefs" are now used for other purposes, so the private storage capacity has decreased. These private facilities for grain storage represent nearly 50% of the overall national storage capacity and are a crucial element if Iraq is to overcome its storage shortage in the near future. They must therefore be given proper recognition as a legitimate means of storage and integrated into the national system as soon as possible so that the amount of grain stocks giving further food security may be increased. The G.R.A. should exercise more control over their private stores, if necessary even renting or buying such siefs rather than allowing private owners to convert the premises to other uses for their own purposes. The cereals surplus in a good year should be stored for consumption in a bad year. Thus, this sound internal marketing will make the country less dependent upon international markets, and make negotiation for imports by Iraq easier.

Because of the still-usual annual shortfall, the Iraqi government is confronted with the problem of maintaining adequate food supplies to meet domestic demand, which whilst in very good years may mean negotiating the export of selected cereals, usually means arranging for cereal imports.

Therefore, Iraq has been obliged to deal on the international cereal market in order to fill the gap between domestic production and domestic consumption.

A wide perspective of the international cereal market is necessary,

especially for wheat and rice since they are the main crops imported by Iraq.

The basis of study is the volume of quantities exported and imported by each group of countries. This is dependent upon production and consumption of grain, the stock volume, in addition to the trading policy followed by each group and individual foreign policies.

However, trade volume of cereal has increased much more than production volume. In Food and Agricultural Policy (1977) G. Edward Schuh states that:

"There have been two aspects to the concern about foreign markets being too strong. The first is the instability that has arisen from the large fluctuations in the output of the Soviet Union - fluctuations that have been passed onto international markets. (The Soviet Union, which produces and consumes about one fourth of the world's wheat and has accounted for a substantial part of the variability of world trade, could continue to impose highly variable, unanticipated demands on wheat supplies in the rest of the world.) (9) The second concern has been with the increasing dependence of the low-income countries on the international grain markets." (10)

Data below highlight the major areas of concern showing, as they do, the continued rise in the amount of surplus grain produced by the developed countries and the increasing inability of the rest of the world to produce enough grain for its own people and the consequent need to trade on the international market.

Table 3.3 World Net Grain Exports and Imports (in millions metric tons)

Group	1969-70 - 1971-72 Average			1971-72 - 1973-74 Average		
	Exports	Imports	Balance	Exports	Imports	Balance
Developed Countries	67.7	35.8	+31.9	91.0	36.9	+54.1
Centrally planned countries	3.9	10.7	- 6.8	-	20.3	-20.3
Developing Countries	6.4	25.5	-19.1	2.8	29.8	-27.0
Asia	3.2	14.1	-10.9	2.3	15.5	-13.2
N.Africa, Middle East	-	9.2	- 9.2	-	11.6	-11.6
Africa	-	2.2	- 2.2	0.5	2.3	- 1.8
Latin America	3.2	-	+ 3.2	-	0.4	- 0.4

Source: Don Paarlberg (1977), Food and Agricultural Policy, Washington D.C. p.156.

The trend shown above is substantiated by the International Food Policy Research Institute (IFPRI) which projects a net cereal deficit for the developing countries of between 65.6 m tons and 82.5 m tons by 1985. This deficit could rise alarmingly to 200 m tons if the lower production growth rate of the late 60's and early 70's was to be projected into 1985. (10)

A longer-term trend in foodgrain production and demand of IFPRI (1977), the World Bank (1976), and Asian Development Bank (1978) indicates a substantial widening in the gap between foodgrain production and demand in the decade ahead. For example, "the IFPRI study concludes that the production shortfall of staple food crops in the developing market economies will range from 120-145 m metric tons by 1990. This is more than three times the shortfall of 37 m metric tons that occurred during the relatively good production year of 1975 (IFPRI, 1977 p.17)." (11)

The imbalance between the developed and developing countries is growing, and inevitably aggravates the serious food problems in these developing countries. U.S.A., Canada, and Australia are the main exporters of cereal. Developing countries and centrally planned countries including those in N. Africa and the Middle East all import cereals. The U.S.A. alone exports more cereal than all the other exporting countries put together. In 1973, for example U.S.A. exported 38.4 m metric tons of wheat, while Canada, France, Australia, and Russia together exported 33.7 m metric tons. (7) If these countries were to form a cartel for cereal exporting, they could control the price of all grain exports. G. Edward Shuh speaking of U.S. policy states that "The secretary of agriculture has recently proposed that we make an agreement with Canada whereby we would jointly fix the price of wheat in order to avoid undercutting each other. A policy such as this has often been suggested by those who recognize the large share of world exports we supply." (10)

The gap between international production and consumption in terms of the volume of the deficit, indicates the pressures that are likely to occur in the system of international marketing of cereal. One major concern of the policymakers planning national food security is with the actual volume of grain that can be imported and stored. Thus the development of storage facilities and buffer stocks could reduce considerably the problems resulting from yield variability of domestic production.

The international market for cereals in which Iraq is obliged to deal is controlled by four factors : (1) the volume of surplus or deficit in terms of the volume of cereal available for purchase; (2) world price which depends on overall supply and demand, (3) the impact

of world-wide inflation; (4) the policy of the exporting countries. These factors, over which Iraq has no control, inevitably affect the whole of her cereal marketing policy. This leaves her vulnerable to the effect of market forces and frequently negates government plans for coping with Iraq's food problems and makes increased storage facilities a must. A major problem is to balance the cost of installing silos against the cost of imports for possible deficits from poor national harvests.

Joseph (Genesis : 12) had to organize for a 7 year drought. The EEC calculates its needs and storage capacity based on a 5 year time-table. Yet Iraq works on a storage capacity with a 3 month time-table. It would seem that for Iraq to build silos to enable it to cope with at least 2 years of bad harvest is economically viable and politically necessary.

### 3.2 Fruit and Vegetables

With the large range of vegetables and fruits grown in Iraq, there is no season of the year when at least some fresh produce should not be available. However, the level of availability is often less than perfect and the aim of investigating the volume of fruit and vegetables in marketing is to assess the actual importance of those crops. It is relevant to bear in mind that fruit and vegetables should form a staple part of people's diet; in an ideal world, an adult human being needs an average of some 240 gm of vegetables daily, and a fruit intake ranging from 100 gm in winter to 800 gm in summer, since fruit and vegetables are recognized as being the main source of vitamins and minerals for the human body.

Most fruit and vegetables are very sensitive to the conditions

under which they are stored and transported, being quickly and adversely affected by prolonged storage and atmospheric change. Lengthy periods of storage are often inadvisable and, in some cases, impossible. Special care is thus needed when marketing these crops in order that they shall reach the consumer in a good condition and, given that seasonal gluts and shortages typify their patterns of availability, in an appropriate annual sequence.

The study of their volume indicates what facilities have to be made both to deliver them to consumers and to ensure a reasonable price for producers to encourage them both to expand these sort of crops and to stagger their season of availability where appropriate. Only through a knowledge of the amount and variability of the production of, and demand for, each crop, can an understanding of the marketing problems, both specific to one crop and in general to the whole range of fruit and vegetables, be gained.

The main 'vegetables' under consideration are tomatoes, potatoes, aubergines, okra, squash, green string beans, green pepper, green beans, green broad beans, spring onion, lettuce, Swiss chards, carrots, cabbage, cauliflower, spinach, cucumber, water melon\* and melon.\* Average annual production for all these vegetables for the period 1974-78, during which time an overall increase in volume of production of over 50% was achieved, was 1.8 m tonnes. <sup>(6)</sup> Tomatoes form the major crop, the average annual production being for that period just over 400,000 tonnes, obtained from 165,432 donums. <sup>(6)</sup> The figure for water melons, averaging 566,000 tonnes from 174,258 donums <sup>(6)</sup> is misleadingly high since a high proportion is not edible.\* The implication of this is that, of the total of 1.8m tonnes for annual vegetable production, <sup>(6)</sup> 0.2m is in fact melon waste!

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\* In Iraqi statistics, melon and water melon are classified as vegetables.

Production of all these vegetables increased from 1.35 m tonnes in 1974 to 2.21 m tonnes in 1978<sup>(6)</sup> as national demand for these crops increased, reflecting, on the one hand improvements in people's diet and on the other hand a change in the farmers' cultivation pattern with the introduction of chemical fertilizers and other improved land management practices. However, although producers were encouraged to cultivate more land, use higher yielding varieties of seed and use more fertilizers, this increase was not maintained as will be explained later, being for instance, only 2.2 m tonnes in 1981.

About 23 varieties of vegetable are cultivated commercially in Iraq, three times as many being summer crops as winter, according both to area cultivated and quantity produced. Of the total land used for winter vegetables more than half is put down to broad beans and onions. Some crops, for example potatoes, are of course available for a large part of the year. An expansion in the cultivation of tomatoes and water melon has resulted from an increase in demand not only within Iraq, but also in a number of Gulf states, like Kuwait and Saudi Arabia, which Iraq now supplies.

The total area under vegetables is about 9%<sup>(12)</sup> of the overall cultivated area, most being in the central part of the country close to the areas of high demand, particularly Baghdad. A further significant area is to the south of Basrah adjacent to Kuwait. This area, in Zubair and Safwan has, in fact, the greatest proportion of its cultivated land under these crops of any of Iraq's major agricultural areas, with more than 90%<sup>(12)</sup> of the total cultivated land under vegetables, the major crop being tomatoes. Proximity to Kuwait, which is an important market for these vegetables, is a critical factor here.

Of course, just as not all vegetable production features in

the official statistics - there are, after all, many suburban gardeners growing a few vegetables for themselves who make quite an important contribution to the government's aim of reducing the shortfall in supply - so, conversely, not all of the recorded production is actually made available for marketing. Some of this produce is consumed by the producers themselves. In 1978, for example, about 48,000 tonnes of spring potatoes and 27,000 tonnes of autumn potatoes, a total of 75,000 tonnes were marketed from a total production of 104,000 tonnes.<sup>(6)</sup> The average price range of ID90-110 per tonne in spring and summer, and ID105-110 in autumn and winter, priced by the government,<sup>(15)</sup> reflected the government's wish to protect the consumer and guarantee an annual price, rather than a realization of the extra costs of out-of-season production and storage, which could well have justified a significant price differential. Indeed, demand for most vegetables in the winter outstrips supply, so winter production of potatoes and other potentially winter-grown vegetables needs to be increased, to compensate for the lack of other vegetables available. It would appear that the factor which is encouraging increased production is the price. Therefore there must be a differential between winter and summer prices, the former being higher. As potatoes are less affected by marketing operations, they can easily be stored if certain temperature and ventilation conditions are followed.

Some vegetables, such as onions and various sorts of beans are consumed in two forms, fresh and dried. This, in theory, allows a much closer correlation between demand and supply to be maintained, insofar as the dried and fresh forms are regarded as interchangeable by consumers and has made marketing of these vegetables more subject to control by producers. They sell the fresh quantity the market can use, leaving the remainder to be dried and stored. However, generally,

the producers prefer the instant cash return gained by selling their produce fresh when, generally speaking, the value will be higher, whilst, even in a glut situation the returns will reflect the fact that people will buy more when prices are deflated.

Overall, the 2 m tonnes of vegetables which Iraq produces in an average year would seem to be roughly 50% higher than overall domestic needs, based on the figures given at the start of this section. The problem is thus not absolute supply, but lies in the areas of distribution and the seasonality of supply.

More produce needs to be available for distribution throughout the year, but the seasonal nature of production presents difficulties. In particular some vegetables present storage difficulties, so the state encourages producers to experiment with earlier and later production by removing price control at these times. These measures have proved popular with the more innovative producers, allowing such producers to make more profit from these crops to compensate for the extra cost and effort involved in out-of-season production. Even so some vegetables have to be imported to meet the periodic shortfalls.

The agricultural Marketing Administration (A.M.A), the state organization responsible for the marketing of all fruit and vegetables as well as imported meat, poultry, eggs, and fish, was responsible for marketing 1,027,000, 954,000, 959,000 and 833,300 tonnes of vegetables in 1979, 80, 81 and 82 respectively. <sup>(13)</sup> The decrease noted throughout the period came after a few years of increased production of vegetables, with consequent implications for levels of demand. This decrease in production was in part due to young farm workers migrating to other sectors, where greater profits were to be made. In particular, vegetable production is more labour-

intensive than other crops. Thus, although the total volume of vegetables produced in Iraq annually is more than its needs, the quantities of vegetables available for consumption in some months remains insufficient. To guarantee a more continuous flow of supply, Iraq is obliged to import vegetables in the months in which there is a deficit, and, if possible, to export the surplus when there is a glut on the home market (see Table 3.4).

Table 3.4                      Export and Import of Fruit and Vegetables \*\*

Years	Exports(tonnes)		Imports(tonnes)		Balance (tonnes)
		Value ID mil		Cost IDmil	
1976	40,475	-	13,381	1.4	+ 27,094
77	20,954	-	12,173	0.7	+ 8,781
78	20,010	1.2	3,026	0.1	+ 16,985
Veget- ables 79	6,907	0.5	7,891	0.1	- 984
80	3,941	0.3	34,304	5.2	- 30,363
81	3,095	0.2	42,742	7.0	- 39,647
82	-		74,300	*	- 74,300
1976	-		25,180	2.9	- 25,180
77	-		34,152	4.7	- 34,152
Fruit 78	523	0.08	52,072	8.5	- 51,549
79	34	0.004	103,424	17.6	-103,390
80	24	0.004	199,255	38.8	-199,231
81	739	0.1	169,655	30.2	-168,916
82	1,560	*	123,000	*	-121,440

\* Data unavailable

\*\* Dates are excepted from these figures

Source: Official figures from Ministry of Agriculture.

The table clearly indicates Iraq's serious and seemingly increasing imbalance in the production and consumption of both fruit and vegetables. Increasing demand for a wider variety of vegetables has resulted in increased imports and has decreased crops available for export. For the three years 1976-78 the only vegetable imported was potatoes, but from 1979 tomatoes, onion, aubergines, courgettes, beans, pepper, cucumber and garlic were added to the list, the gross deficit increasing from just under 1,000 tonnes in 1979 to 74,300 tonnes in 1982.

With the exception of dates, the total volume of annual production of fruit is already lower than domestic demand. This is because most farmers prefer to produce vegetables or industrial crops, like cotton and oil seed rape rather than fruit in spite of the increasing demand which makes the profit from producing fruit about 10 times that of producing cereals.<sup>(14)</sup> This is because the cycle of capital in fruit production is slower than in other areas of agriculture because establishing orchards needs at least 3-4 years and indeed for some fruits i.e. figs it is even longer before a profit is seen. In addition, damage to trees and vines from climatic or other factors is a greater set-back than for crops with a shorter life-cycle. This is why the Government has intervened with subsidies to encourage farmers to grow fruit.

The 20 million fruit trees of Iraq occupy about 0.2 million donum.<sup>(14)</sup> In addition there are areas where date palms are inter-planted with citrus trees. The most important fruit trees in central Iraq are the citrus family; grapes and apples grow well in the central and northern parts of the country; figs, pomegranates, peaches and apricots grow especially well in the north.

Fruit marketing involves four particular issues which must be taken into account:

- (1) Care must be taken in gathering the fruit to keep it in good condition. Since fruit is considered a luxury food, its physical appearance and condition is very important to consumers.
- (2) Over-ripe fruit must be separated off immediately and not allowed to contaminate the rest. Sound fruit is then transferred in cool trucks in the shortest possible time.
- (3) Special containers suitable for each sort of fruit must be used.
- (4) Fruit must be so displayed that buyers can not affect the quality by over-handling.

Meeting these very varied needs has resulted in rising costs in fruit marketing.

The volume of domestic fruit marketed by the AMA for the years 1979, 80, 81 and 82 was 166, 125, 113 and 103 thousand tonnes respectively.<sup>(13)</sup> These quantities do not satisfy the domestic demand which is currently estimated at about 0.5 m tonnes, and hence Iraq imported extra quantities for those years of 103, 199, 170 and 123 thousand tonnes respectively,<sup>(13)</sup> at an average cost of ID 29 m per annum. The main fruits imported are apples and bananas since the domestic apple cannot compete with the imported one in terms of quality, grading and packaging, and because bananas are only rarely grown in Iraq. The main suppliers of fruit and vegetables are France (apples), Greece and Turkey (fruit and vegetables), and Somalia (bananas). These imports were partly offset by those fruits and vegetables exported, which include tomatoes, cucumber, onion, okra, beans, water melon, melon, grapes, apples, citrus, apricots and peaches. The main markets for Iraqi fruit and vegetables are Kuwait and Saudi Arabia.

Table 3.5                      Salary Increases 1968 - 81 (Iraqi Dinar)

	1968	1974	1981
Salaried staff in Public Sector	492	609.2	1517
Semi and unskilled in " "	228	675.4	1617
Overall average individual Iraqi income	91.1	269.4	666.1
Government official figures	100	187	474

Source: Political statement, Central Statement for 9th Conference for Baath Party held in June 1982, (1983) Baghdad, p.94.

The official figures indicate an average growth of 20 ID from 1968-74 but only 13 ID from 1975-81.

Table 3.6                      Family Budget figures 1976-79

	Urban (Percentage of Total)	Rural (Percentage of Total)
Families with less than ID 50 / month		
in 1976	11.7	37.5
in 1979	2.8	12.9
Family income ID51 - ID 150/month		
in 1976	66.9	55.2
in 1979	51.7	69.1
Family income above ID 150 /month		
in 1976	12.2	7.3
in 1979	45.4	8.0

During this period 1976-79 prices rose by at least 26%

Source: Ibid, p.94 and 95. N.B. These official figures, in the case of the 'Urban 1976' and 'Rural 1979' data, only total 90% .This discrepancy cannot be accounted for.

One of the main reasons why demand for fruit, like demand for livestock products, has increased is the rise in people's real income, which, coupled with a greater awareness of dietary matters and the basic population increase, has generated these advances. Tables 3.5 and 3.6 indicate the extent of these changes in income. This increase in the purchasing power of previously lowly paid workers has resulted in a marked change in spending patterns. Where the salaried workers might spend their increase on consumer durables the artisan spends far more money on food such as meat, eggs and fruit in addition to more staple items. Thus the demand for the crops formerly regarded as luxuries by the majority of the population is steadily increasing.

### 3.3 Conclusion

Developments in the volume of agricultural production have not gone hand in hand with developments in other sectors of the Iraqi economy; thus resulting in a significant imbalance between supply and demand for these products which is, in itself, part of the explanation for the considerable changes in the price, and hence value of those crops, into the marketing of which the government has not intervened.

Demand has increased greatly for almost all agricultural products, but in particular, demand for foodstuffs has increased and diversified. Some foodstuffs which were previously considered luxuries are nowadays in general demand as a result of increasing individual income, changes in people's habits and tastes and, finally, overall population growth. At the same time demand for other agricultural products has increased as well. For instance, the demand for industrial crops such as cotton and oil seeds has greatly increased because of the development of national industries supplying, initially, the home market but with scope for expansion in the export trade. The demand

for animal fodder has also greatly increased, since the demand for animal products, both of foodstuffs and by-products, continues to increase rapidly.

National production is not regular and not constant. Despite the significant plans introduced and the great sums spent on developing the agricultural sector, this sector is still backward both as regards the amount of cultivable land brought under cultivation and also the yield per donum.

The figures available regarding the labour force in agriculture show a possible discrepancy. Because of the rapid development in other sectors needing a large unskilled labour force many workers registered as being employed in the agricultural sector are almost certainly working in other sectors. This subterfuge is not very surprising because a law exists forbidding transfer from farm working to any other sector except in exceptional circumstances. Despite this, there is a labour movement, largely involving the young mobile worker drawn by the prospect of larger wages, off the land and into other sectors.

The imbalance between the volume of production and the volume of consumption makes the task of agricultural marketing difficult, leading inevitably to a considerable reliance on the international market. This results in revenue being spent on imported foodstuffs much of which could be grown in Iraq if certain aspects were improved. Political factors could also play a part since countries able to supply vast quantities of basic crops, in particular cereals, may not be prepared to undertake trading agreements and this would reduce the choices available for purchasing additional supplies.

The demand, both for human consumption and for animal fodder, for almost all important cereals considerably outstrips supply. A similar situation exists for livestock products where demand is significantly

higher than production. In the vegetable and fruit sectors the situation is less problematical since for most of the time national supply can cope with national demand with occasional shortfalls being met by imports and, in part, compensated for by exports not only of other crops, but also of imported crops in other seasons.

Thus the major thrust in the agricultural sector in the next decade must be to raise the level of efficient, cost-effective, home production and distribution of foodstuffs to a level of near self-sufficiency : this is well within the country's capabilities since Iraq is blessed with a good climate and vast acres of untapped land, though there is a need to look particularly at mechanization, infrastructure and training.

Theoretically, there is an automatic and positive correlation between the volume and value of the marketed product, based on the market forces of supply and demand. Although increases in production should generate greater returns, when the volume of the product is high, the value per unit tends to be lower and vice-versa, creating, in consequence, far less dramatic fluctuations in the total 'value' of a particular commodity than occur in terms of its volume. This, of course, does not mean that fluctuations in the price per item of a particular crop are not great when left to market forces, and it is for these reasons that attempts have been made by the government to reduce the influence of the volume upon the value and vice versa in order to plan long term production strategies. These strategies, in addition to attempting to moderate domestic production price fluctuations, are designed to protect the producer from low priced foreign products. Thus the government either directly controls or must authorize all import and export of food

items, whilst in the international market, all essential products and most of the less essential products are priced by the government, bearing in mind the volume of production, but not, unlike the theoretical free markets being dominated by this factor. In this case the natural correlation between the volume and value of the marketed product is controlled and reduced.

However, were agricultural marketing in Iraq to be left free, some crops would not continue to be produced internally since some foreign crops, being produced more efficiently in areas more appropriate to their production, would be imported at the expense of domestic production. In consequence, the volume and the value of such products would decline, whilst some other products more appropriate for commercial production would be increased. This would make the country more reliant on external forces and less dependent on itself. It is part of the specific policy of the Iraqi government to avoid this situation as far as it is appropriate, given the country's agricultural potential, and hence its intervention into the marketing process, both internal and external. Not least, it is hoped that the inflation which nowadays dominates so much of the world, will not come to dominate the Iraqi market, whilst the drive for greater self-sufficiency will encourage a higher volume and range of production, albeit in a protected environment.

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CHAPTER FOUR

THE MARKETING OF DATES

4.1 Introduction

Iraq contributes about 39%<sup>(1)</sup> of the dates which enter into international trade. This contribution, which excludes dates used domestically, comes from almost 22 million <sup>(2)</sup> palms (30% of the world total)<sup>(3)</sup> covering more than half a million donums, and from which is produced a widely fluctuating annual yield of from 230-500<sup>(4)</sup> thousand tons of dates (see Table 4.1, and its footnote).

Income is the main factor in encouraging or discouraging producers to further develop their activities. Investigation and analysis of the reason why producers neglect their groves have shown conclusively that the income derived from groves is too low to encourage increased cultivation. Whilst income, which is obviously a consequence of the interplay between production costs and the price received by the producer, has not increased at a rate which producers have found acceptable because of factors about to be explained, it is easy to understand why, given very limited government involvement, this sector has remained depressed. A comparison of these reasons with the other activities of the farmer allows a full estimation of income to be made and the relative importance of dates to the farmers to be seen.

The commercial price of dates has not risen in line with the rise in production costs, in marked contrast to the situation with many other crops. However, rises in the labour cost of workers resulting from a higher standard of living have added considerably to the cost of production. In particular, date palms need a lot of attention, cultivation being largely by hand and thus requiring a lot of effort and time. Mechanization of date growing is as yet in its infancy.

Its greater use should decrease production costs and aid quality, so ensuring a reasonable income for producers.

Iraqi dates do not gain a good price in international markets because packaging is poor, and quality is inconsistent. Some of the dates, either old stock or those of lower quality, are used for industrial purposes. However, such dates are also consumed by people, resulting in a low level of nutrition. Such trade, in poor quality dates, continues at an international level despite the low profit margins. Discontinuing this trade, and exporting only high quality dates would aid Iraq's image abroad as a producer of quality crops, but would only be possible following radical changes in the date industry, not least in the marketing procedures involved. Intensifying the industrial processing of poor quality dates will also aid export levels by ensuring the production of products which can easily be sold abroad, vinegar and other fermented products, being good examples.

#### 4.2 Production of Dates (The date yield)

About 450 <sup>(5)</sup> varieties of date are known, of which only three are widely grown in Iraq. The Halawi palm produces the finest fruit, but gives only a moderate yield (20 kg. per tree). The Sayir palm is slightly less productive, but is more tolerant of inferior growing conditions and is probably the most widely grown. The Zahdi does not give a fruit of high quality, but the yield is over 50 kg. per tree, and this compensates for the low price obtained.

Date palms need an annual temperature between 20°C and 24°C, with a maximum of 40°C to 47°C for ripening.<sup>(5)</sup> The ideal soil is a valley fill sediment with a loamy texture typical of the land below 500 m in central and southern areas of Iraq. The palms need regular irrigation to produce a high yield, but are more tolerant than many other tree

species of extremes of temperature.

Propagation of the date palm is by cultivating offshoots taken solely from the base of female palms rather than using seeds partly because of the time involved but particularly because it eliminates risk of producing a male date palm or a variety of inferior quality. This unique cultivation technique requires much effort, starting from taking the offshoot from the base of the parent tree and this must be done with great skill to avoid damage to the parent plant and to the offshoot itself. The offshoot price is thus very high. During the first year of cultivation the offshoot needs regular irrigation and protection against excess heat and cold until it produces the major root which enables it to absorb soil moisture effectively. Such time-consuming highly skilled work is costly and forces up the price to the consumer. For high quality dates the Iraqi consumer is prepared to pay a good price but poorer quality dates are equally demanding yet will only fetch a low price on the local market. However, this poorer quality crop forms the major part of the annual production resulting in a low return to the farmer and over the years this has contributed to the declining importance of date production in Iraqi agriculture. Obviously then a major re-appraisal of date growing with the idea of significantly increasing the number of palms producing high quality dates should be undertaken. However, the life cycle of a date palm means that from planting to cropping can be anything up to 8 years so farmers are not inclined to undertake a scheme of replacing trees producing poorer quality dates with those producing cost-effective high quality fruit.

In many suburban areas date groves could be found and their proximity to a ready market did lower transport costs somewhat but, with the rise in the cost of land suitable for building, many owners

have cut down their palms and sold the land. Fortunately this practice has been halted by recent government legislation prohibiting such sales.

Besides forming an extremely important part of the local diet, dates are used in the distilling of arak, Iraq's chief fermented beverage outside the vine-growing area. The crushed stones are fed to cattle, and both the leaves and the trunk of the palm are used in light constructional work (houses, boats, even bridges) and also in the manufacture of paper. Palm trees even have a part to play in moderating the effects of weather by lowering the temperature and preventing dust storms.

The three main areas for date production are the Shatt el Arab, the Middle Euphrates and the area around Baghdad and Diala. Each of these areas has its distinctive aspects. The Shatt el Arab suffers from more neglect than the others, since palm productivity is inherently lower, thus discouraging producers from giving the necessary attention to their groves. High water and soil salinity and insufficient irrigation systems are major factors in this. Most of the groves in this area are dependent on the tide for their irrigation. The consequent salinity and excessive inundation are the main reasons why the date palm yields are low. An experiment was conducted by the Horticulture Department in Basrah to compare the yield from 90 palms irrigated by the tide with the same number of palms irrigated by pump, with the following results after one year.

<u>Irrigation method</u>	<u>Average yield per palm</u>	<u>Average weight for 50 dates</u>
Tide	10 kg.	240 gm.
Pumps	22 kg.	340 gm.

Source : Hasan, Kh. H. (1982) Dec. Food processing, Baghdad, p.51.

Although short-term irrigation consequences are notoriously misleading

this nevertheless hints at the basic reason why productivity levels are as low as this in the south of Iraq. Neglect of the ditches and canals, resulting in their infilling with sediment, thus eventually preventing sufficient water reaching the palms, causes poor growth and the death of a number of palms each year. For example, "in 1978, 186,000 trees died in this region. This is equivalent to 2.8% of the total number of the palms in this region and 55% of the total number of palms that died in Iraq in the same year."<sup>(6)</sup>

Although the number of date palms in this region decreased from 13,400,000 palms in 1952 to 6,545,000 in 1978, i.e. a drop of 51.2%,<sup>(6)</sup> this region still has the highest number of date palms in Iraq. Despite this fact the date yield in this region has decreased markedly during the last three decades. In 1950 the date yield was 154,228 tons, equivalent to 32.9% of the total yield in Iraq, and by 1980 the date yield was about 70,460 tons,<sup>(6)</sup> only 11.8% of the total yield in Iraq. This is due to a decreasing individual palm yield, because of the reasons previously mentioned. For example, the average yield of the dates per palm in this region in 1980 was 12 kg. which is far less than half the average in Iraq (33 kg.) and equivalent to about 25%<sup>(6)</sup> of the average yield in Babylon province in central Iraq where, as in other provinces, surface irrigation is practised.

"Great numbers of the date palms in this region are old tawila and have very low productivity at about 10 kg. per palm and this quantity is rarely collected, since these trees are very high. In addition, these palms were planted simultaneously at a high density (5 m apart) and thus there is no progressive replanting to ensure continuous production. They do not bear offshoots and therefore the special cultivation of new offshoots is a very slow operation."<sup>(6)</sup>

The Middle Euphrates is characterized by the cultivation of vegetables or, where plenty of water is available, rice between the palms, but unfortunately this has drawbacks for date palm yield since the palm and the vegetables differ in their needs for water, so it is difficult to generate an optimum environment for the date.

The Baghdad area has the advantage of cultivating citrus within the palm groves. This sort of cultivation is very successful because the palms protect the citrus trees from excess sun and heat, and the producers may tend both trees, the crops of which ripen at different times. Therefore, the individual palm yield is higher than in the other provinces; for example, the Zahdi palm in this province produces an average of over 50 kg. of dates annually.

In addition in central and southern areas most areas of river bank levees (where water is available) are covered by palms, even outside those main areas previously mentioned.

Date production in Iraq fluctuates from year to year ranging from 230 to almost 500 thousand tons Table 4.1 shows date production in Iraq for the period since 1950. These figures include neither the quantities consumed by producers and their families, nor the quantities marketed unofficially.

Table 4.1                      Date production in Iraq, 1950-1983

Seasons	Production	Seasons	Production	Seasons	Production
1950-51	468,303 (a)	1960-61	300,000	1970-71	300,000 (b)
51-52	309,151	61-62	350,000	71-72	450,000
52-53	372,102	62-63	420,000	72-73	310,000
53-54	493,444	63-64	320,000	73-74	385,000
54-55	471,818	64-65	360,000	74-75	340,000
55-56	480,469	65-66	280,000	75-76	459,608
56-57	230,000	66-67	380,000	76-77	254,454
57-58	300,000	67-68	230,000	77-78	476,830
58-59	450,000	68-69	310,000	78-79	389,030
59-60	270,000	69-70	480,000	79-80	392,000 (c)
				80-81	395,000 (d)
				81-82	405,000
				82-83	400,000
				Average	370,673

Sources:

- (a) Habeeb, K. and Al-Sokouty, M. and Rasheed, A.W. (1975), Baghdad. Problems of production and marketing dates in Iraq, p.24.
- (b) Ajill, J.H. and others (1979) Baghdad. Style of co-operative marketing in Iraq, and the state of general co-operatives union, p.175.
- (c) U.N. Statistical Abstract of the Region of the Economic Commission for Western Asia (1981), p.108.
- (d) EIU Annual Supplement (1984) p.9.

N.B. Note these figures include neither quantities consumed by producers and their families nor the quantities marketed unofficially.

Seasonal fluctuation in production would appear to be a result of a range of climatic and biological factors, including the effect of climatic variables such as wind, dust and rain, and the effects of date palm insects and diseases which have a differing impact each season.

However, this sector suffers from neglect partly because of a scarcity of workers for the carrying out of such operations as fertilization of the female palm and digging the land over once every 4 years, a task which, because of the frequent presence of creeks and water courses, must be done by hand. Palm productivity is therefore low and the quality of dates is low also. This is especially true for the commercial varieties, such as Halawi which constitute about 8.5% of the total production of dates, Khathrawi (2%) and Sayir (14%),<sup>(7)</sup> which produce about 15-25 kg. per tree in Basrah province while Zahdi, which constitutes 70% of the total production of dates in Middle Euphrates, produces about 40 kg. per tree, and in central areas produces more than 50 kg. per tree. This is the reason why, despite the overall number of palms being slightly less than in southern areas, the central part of the country produces dates at more than double the rate of the southern part.

Even the average production for the same variety of date palm in central areas is more than in the southern part of the country. Overall, the average production for each palm in the southern part of the country is slightly less than 15 kg. while in the central part it is over 30 kg.

#### 4.3 The income from producing dates

Direct income from any activity is the result of the difference between production costs and the selling price of the crop. Excluding land prices and rents, production costs depend on the cultivation method

followed and the volume of produce. This is limited by an average yield for each date palm, and the number of trees in a holding (see Table 4.2). The cost of tending palms is approximately stable in each year and includes irrigation, weeding between the palms, fertilization of female palms etc. However, the cost of harvesting depends on the quantity produced, becoming very high when production is small, since the harvester has to climb the palm whether the tree carries a small or a large crop. It is this factor which has led to many trees not being harvested at all, with the consequent semi-dereliction of numerous palm groves. The same is true for marketing costs. The study done by the General Bureau of Statistics in Iraq can be used as good evidence in this case.

In 1975, when 460,000 tons were produced the production costs for each kg. were IF 10 whereas in the following year, 1976, when total production fell to 254,000 tons production costs rose to IF 18 per kg. Similarly marketing costs rose from IF 2 per kg. in 1975 to IF 3 in 1976. <sup>(8)</sup> In 1980 production costs for 1 kg. of dates was IF 21 (3.9 pence) and the cash return from this quantity was IF 37 (6.6 pence), giving a theoretical profit of about IF 15.6 (2.8 pence). <sup>(6)</sup>

Many factors are involved in the lack of incentive for date farmers to raise their level of production. For example, "the average yield for each palm in Basrah province in 1980 was 12.2 kg. which, in turn, according to the 1980 figures, meant an average profit of about ID 0.197 (£0.35) per palm whereas the price of crude salt dug from the adjacent seabakh was ID 0.615 (£1.10) per 12.2 kg. Thus, the profit per kg. from dates was less than for crude salt." <sup>(6)</sup> The annual average profit from dates is about ID 12.3 (£22.16) <sup>(6)</sup> per donum which does not encourage the farmer or the owner to improve the date palm yield. This income is very low compared with that which

can be obtained from other forms of cultivation or unskilled jobs in the nearby cities.

However, producing citrus from one donum cultivated under palm trees can earn ID 55.0 a year. (2) The high prices associated with citrus explains their current popularity amongst farmers, and gives a particular advantage to the groves of Baghdad, where citrus are intercropped with dates.

The cultivation of other crops between date palms, despite some drawbacks, has many advantages, since it makes producers more careful with both crops because it is important to make space suitable for the other trees by pruning, irrigation, fertilization, digging land and mowing the grass, all of which increase the yield of the palm.

Whilst, for various reasons, it is thus not an easy task to estimate production cost, it is necessary to do so and to compare these costs with the production costs of other crops in order to establish the relationship between such costs and the selling price, and thus help to explain the declining importance of the date in terms of its dwindling commercial attractiveness. Table 4.2 tries to do this.

Table 4.2 : Income per cultivated donum under selected fruit and vegetables in 1977 (Averages for the whole of Iraq)

Crop	Donum yield (kg.)	Total cost per 1 kg, (ID)	Wholesale price (ID/kg.)	Total cost per donum (ID)	Total income per donum (ID)	Net income per donum (ID)
Tomatoes	2,472	0.046	0.120	114	297	183
Aubergines	4,253	0.021	0.084	89	357	268
Potatoes	2,214	0.040	0.165	89	365	277
Green onion	1,805	0.023	0.035	65	98	34
Sweet lemon	1,700	0.070	0.128	119	218	99
Oranges	1,650	0.073	0.219	120	361	241
Grapes	4,400	0.048	0.124	211	546	334
Dates	1,810	0.017	0.029	31	52	22

Source: Mutab Sh.F. et al (1979), Means of Developing Dates and Palms Baghdad, p.98.

Production costs of dates have been increasing but are not reflected in the price obtained. For example, fertilization of one female palm cost IF 10 in 1960 and by 1980 it cost about six times that.<sup>(2)</sup> As can be seen from Table 4.3 by contrast the wholesale price of dates, since accurate records began in 1955, indicates remarkable fluctuations from ID 6.40 in 1957 to ID 20.02 in 1964. After a further drop they are currently fetching about ID 20.00 (in 1983) thus while fertilization costs rose by 600% whole prices show only a 300% rise at the most.

Factors influencing such variations include changes in I.D.A. policy often including over-reaction to any given year's results, volume of production and export demands.

Table 4.3    The purchase price of dates paid to the producer by the government's Date Marketing Office or (I.D.A.)

Years	Price(ID per ton)	Years	Price(ID per ton)
1955	15.35	1964	20.02
56	8.63	65	20.02
57	6.40	66	12.05
58	9.74	67	16.20
59	12.78	68	16.20
60	-	69	16.05
61	19.92	70	16.05
62	19.92	71	16.40
63	19.12	72	17.05

Source: Al-Rubaiay D.J., (1984), Irrigation and Drainage System in Basrah Province, Iraq, Durham University. p.412.

"These low and variable prices of the dates, together with the other factors previously mentioned, give the farmer little incentive to improve his management but rather lead him to look for other sources of income e.g. cultivation of vegetables or fruit or collecting salt from the adjacent low lands or work in non-agricultural jobs." (6)

The production cost of dates is high, since it involves many farming operations. All these operations are done by hand, starting from digging land up to harvesting, because only a small amount of mechanization has been introduced into date farming. High wages for the workers make the production costs too high. A study done by the University of Basrah states that wages paid to workers constitute 75 per cent of the production costs. For example, the cost of fertilization for the female palm is about IF 70, and a worker can fertilize some 14 palms daily, while, with the use of a fertilizing machine, costs are about IF 14 per palm and 40-50 palms can be coped with daily, thus decreasing the number of workers needed by two thirds. (8) The extra advantage of using the fertilization machine is that it will raise production by about 15%, (8) since it fertilizes the whole bunch by spreading pollen under pressure, while hand fertilization spreads pollen only on the surface area of the bunch.

However, harvesting and marketing costs for the high quality dates such as Halawi, Khathrawi and Sayir are higher than for Zahdi, a lower quality variety. The reasons are that the average yield of those sort of dates are less than Zahdi and they need special care in collecting and packing. Workers have to collect them one by one, put them into a bag, and take them down from the palm very carefully, otherwise they will be spoilt by contact with the soil or crushed: this would make these more fragile dates lose their essential characteristics.

The same is true for the marketing process. On the other hand Zahdi dates can be cut and thrown down onto the ground with no detriment to their quality so this makes harvesting of Zahdi faster and cheaper. The hard dry skin of this variety means that, even if it becomes soiled, it can be readily cleaned.

The use of harvesting machines has many advantages in that it will both protect the dates from damage and will decrease harvesting costs by decreasing the number of workers needed. The traditional harvesting method of 'cut and drop' obviously affects the quality and make the wholesale price lower, since the whole quantity, good and poor, is delivered together by the producer. It is necessary to advise the producer to grade his products of dates not only according to the varieties, but according to quality variation within any one variety. But unfortunately advice is seldom sufficient to make the producer change his habits; it is only when he can see the tangible material benefits that would accrue that he is likely to introduce such reforms.

The commercial varieties of dates (Zahdi, Halawi, Khathrawi and Sayer) are priced in advance by law, but other varieties such as Brim, Jibjab and Deri, for which there is no guarantee of purchase, have their prices agreed by the government agencies only if and when the I.D.A. wishes to purchase them. Mixing up the dates with dosan\* or with low quality dates discourages the state from increasing the price while for the same reason the export price of dates in the international market is also low. The I.D.A. therefore, is not the prime cause of the low prices paid to the producer.

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\*Dosan:

those dates which have fallen naturally to the ground, which are usually damaged, soiled and attacked by insects.

Therefore, it would seem that to overcome this major problem for the Iraqi date industry, the I.D.A. which is responsible for buying dates from producers, at an official price fixed in advance, must be given more freedom to fix the price of each grade according to the variety, quality and the degree of mixing. Higher guaranteed prices for the top grades would give the producer better incentives to both produce better dates and to separate his products more carefully. The price of the lower grade has to cover at least production costs. But, given that it is possible to use these in the factories, for example as liquid sugar, then such a use would guarantee that, regardless of production fluctuations, all the dates would be utilized. This would give the producer more confidence in the I.D.A.

In practice, however, current policies condemn the good with the bad if they are submitted 'polluted'. Therefore, a lot of dates are wasted or sold to the merchants for a low price. The consequence is a lot of dates remaining unharvested, to avoid increasing costs because there is doubt about the result of the sale. If this situation continues most of the low varieties of dates will continue being unfertilized and the land under such dates will become ever-less important to the Iraqi economy.

The disadvantages of using traditional harvesting methods needing many employees are slow performance, high cost, and the risk of the quality being adversely affected. Mechanical harvesting, should it be introduced, would protect the fruit from becoming soiled or damaged on contact with the ground and speed up the harvesting, as well as greatly reducing the manpower required. This in turn would decrease harvesting and marketing costs, not least because of the cheap fuel locally available, and should improve the standardisation of quality and hence the whole packaging and marketing process.

Unfortunately the use of large machines would mean that the groves must be planted more regularly to allow easy access so it would make sense for the resultant increase in profits to be used, in part, to remove some palms to facilitate mechanization. To ignore this development and rely on traditional methods will not increase the profit margin.

#### 4.4 Consumption of Dates

##### (a) Fresh and packaged dates

In an ideal market situation the price of dates results in a worthwhile income for producers and a supply relative to demand for consumers. The perfect marketing system acts as a buffer between the two ends of production and consumption. It absorbs the fluctuations in production and seeks to increase consumption which then encourages farmers to increase and develop their production. However, with the marketing of dates, as with other products, such a situation is a theoretical ideal, not a reality. One reason for this is the actual pattern of date consumption, both domestic and exported, and this section therefore analyses the effects of consumption upon the production and marketing of dates.

Obviously the aim of good marketing is to satisfy people's demand for the commodity. It is considered a good indicator of its success if consumer demand rises and thus causes an increase in overall date production. An increase in consumption inevitably depends on the other stages of the production operation and on marketing efficiency.

Studies and analysis of the chain of production, distribution, and consumption are necessary in order to diagnose the problems accurately and to suggest solutions. It would seem, therefore, necessary to monitor production, marketing and consumption in order to understand the needs of the various aspects of this industry.

Dealing with the consumption of some agricultural products is more complex than with others; they are more sensitive to storage; it is difficult to store them for a long time; the storing operation has an effect on the quality and nutritional value of the food and for this reason the price tends to become lower for agricultural products when stored for any length of time. Dates, however, because of the high sucrose concentration are less likely to spoil than some other crops.

Consumption of dates is divided into internal and external markets. National date consumption includes the producer's own requirements as well as commercial sales which can be divided into two categories : human consumption and industrial processing.

#### Domestic Human Consumption

Unfortunately, accurate figures are not available about human national consumption of dates. In spite of the fact that most people in Iraq consume dates, although no accurate survey has been conducted, it is clear that there are wide differences in the quantity consumed from one area to another. The residents of the south and central areas in particular consumed dates daily, while in the northern part, consumption is only occasional. The need, therefore, for some market research is apparent : given the changing dietary habits of the Iraqi population, there is at the same time potential for expansion of the domestic market, particularly in the north, but also a risk of market contraction in the centre and south unless the date's potential is fully exploited. The lack of accurate statistics is one of the major obstacles in studying and ultimately solving the problems inherent in the date industry.

This section will analyse consumption phenomena, attempt to diagnose the obstacles which are the main problems in the date sector and suggest possible solutions.

The figures which are available about national consumption are the result of deducting the quantity exported from the total production for any given year. Inevitably, therefore, the figures do not give a clear picture, since the quantity consumed by farmers and their families and the quantity marketed unofficially are not included. Many varieties of dates, except Halawi, Sayer, Khathrawi and Zahdi, are marketed unofficially, and this constitutes at least 5% of dates produced in Iraq. In addition, the quantity consumed as Rutab which the residents prefer fresh, is not included in the available figures.

It is, however, generally assumed that about 18% of the country's total production is taken up by the home market, to be eaten as dates. Human consumption of dates shows an annual decrease since 1961 despite a population growth (see Table 4.4). The reason is that the high quality dates required by most people are not readily available and distribution of fresh dates is not regular in all parts of the country. It is not easy to find good quality fresh dates throughout the country particularly in the areas not producing dates. This indicates the shortcomings of the internal marketing facilities, since cooling and refrigerated transport for dates do not yet exist enabling the transfer of fresh dates rapidly all over the country. Fragile dates which are not in good condition could be available throughout the year if frozen. The packaging of dates does not always meet the wide variety of people's tastes which vary as society's needs change and family size decreases.

All these factors have resulted in losses to the community of one of the most nutritious foods available and one in which the country specializes. Interestingly dates contain almost all the basic

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Rutab : This means, literally, 'fresh dates' but is used to include frozen 'fresh' dates as well.

Table 4.4 : Estimated National consumption of all dates, fresh and processed 1960-71

Year	National Consumption			Population (Millions)	Average consumption of all dates, fresh & processed Kg/pers/year	Average individual consumption of fresh dates (Kg/pers/year)
	Human ( '000 tonnes)	Processing ( '000 tonnes)	Total ( '000 tonnes)			
1960/61	50	30	80	7.0	11	7.0
61/62	30	30	60	7.2	8	4.0
62/63	25	30	55	7.5	7	3.3
63/64	25	30	55	7.7	7	3.2
64/65	30	25	55	8.0	7	3.7
65/66	30	27	57	8.2	7	3.6
66/67	30	30	60	8.5	7	3.5
67/68	30	30	60	8.7	7	3.4
68/69	30	28	58	9.0	6	3.3
69/70	30	28	58	9.2	6	3.3
70/71	25	33	58	9.4	6	2.6

Source : Habeeb, K., Al-Sokouty, M. & Rasheed A.W. op.cit. p.62,65, 68, 69.

commodities needed by the human body, carbohydrates which constitute between 70 and 90%, proteins, fats and minerals. (9) Each kg. of dates contains 2805 calories, where one kg. of beef contains 2411 calories, bread 2231, eggs 1615, fish 660-1540, potatoes 880 and poultry 792 etc. (9) It is thus clear that dates produce more energy for the human body than most other foodstuffs. They also contain vitamins A,B and C (9) but the last one depends on the age of the dates as the vitamin content decreases with time.

Some of the luxury types of dates can be found in certain local markets even though the purchase price is high. These varieties are privately marketed, there being no official involvement in their marketing, but they are seldom found outside the producing regions. Prices of these dates are too high for people on an average income and the bulk of this type of dates is consumed by the families and associates of the producers themselves.

According to nutritional statistics a typical Iraqi diet should include a daily intake of about 23 gms. of dates which, on present day population figures, would result in an annual consumption of 120,000 tons. The actual figure is about one quarter of this amount (see Table 4.4). This considerable difference between the actual consumption and the suggested consumption needs specific study and analysis of the reasons why a crop which is readily available in the country, which is a most nutritious food and which is a good substitute for more expensive foods, especially fruit and meat, is not consumed as much as would be expected. Since the production of dates in Iraq is already more than its residents' needs, the main obstacle must be in national marketing ; as yet, there has been little interest in making the various types of dates readily and widely available for people inside the country, either in the public or the private sectors.

Previously when Iraqi families were larger they preferred to buy a Khasafa, a container for dates which is made with the palm leaves. Each container would hold between 40-50 kg. which was sufficient for a whole family for some months. However, changes in the Iraqi family size and standard and style of living meant that many people stopped buying dates in this way. They now prefer to buy small containers, which are packed well, and to have a choice of good quality dates for which they are ready to pay a price which is at once both higher and a smaller proportion of their income than would previously have been the case, given the controlled pay increase of most of the population who are wage earners. For example, the maximum wages of skilled workers as covered by the Revolution Command Council decree No.125 of 1974, was raised to ID 150 c. (£250 ) a month from ID 100 c. (£165 ) a month. <sup>(10)</sup> Also, dates eaten as Rutab are available only during a short period, since they are consumed fresh, as once picked they quickly lose their flavour though it would be possible to keep them fresh all year long by freezing.

The private sector still completely controls the national commercial marketing of dates for human consumption and private factories, the public sector confining itself, via the I.D.A., to the international aspect of marketing. This lack of state involvement - there is no control of prices as with certain other agricultural products - may be seen as one of the main obstacles to better marketing procedures. Even in the area over which it does have responsibility, the I.D.A. licensed some merchants to share in the exporting of dates. The price of high quality fresh dates, particularly at the beginning of the season is very high on the home market, resulting in a self regulating price scale. In terms of supply and demand this is commercial control.

The quality of these dates means that they are in high demand but, unfortunately, it is more difficult to increase the number of these palms under cultivation because partly they are much prized by the home gardener making them less readily available on the open market and partly because the propagation technique used in date husbandry, whereby small offshoots are removed from the base of the parent plant thus ensuring perfect replication is less reliable with Barhi\*, the young plants needing far more nurturing than is the case with the commoner varieties.

#### 4.5 Packaging

A prime factor in marketing, particularly for the exported dates, is packaging. Good packaging adds to the value of the crop for whenever packaging is well conceived and well executed the product is more attractive to the prospective buyer. In addition, good packaging preserves the crop during transporting, storing and displaying and therefore helps to maintain its price.

The method generally followed for home consumption involves the dates being packed into open plastic containers holding about 15 kg. in the fields and transported to either the wholesaler or retailer. In the retail situation dates are generally sold in smaller quantities as required by the consumer. In addition, where there is a large consumption of khalal\* and rutab dates, these are usually put straight from the palm into rigid crates made of the dried midribs of palm fronds. The dates go to market without change of container. The aim of agricultural extension services in date-growing districts should therefore be to encourage the use of garden boxes and the placing of dates directly from the palm into the box.

\* Barhi : A superior date variety

\* khalal : The stage of ripeness before rutab.

Dowson and Aten state that:-

"Most of Iraq's dates are packed in the field and only a small part in packing houses. It is likely that field packing will continue to be important in the date industry because, although packing house packing is cleaner and in several ways better, it is more expensive. Field packing is largely for the cultivator and his family, but dates packed in the field also enter widely into commerce, such as that practiced in Basrah for the trade in low-quality dates."<sup>(11)</sup>

adding that:-

"Dry dates are packed in sacks (75 kg. net each), but the cultivator will press soft ones into a compact mass in a suitable basket or other container; such a compact mass keeps reasonably well. The materials available to the cultivator for containers suitable for these purposes are the leaflets of palms and the skins of sheep and goats." (11)

"Most of Iraq's enormous date crop is packed in the field in baskets made of date palm leaflets (Khasafa 50 kg) net. (see Table 4.10). The dry, cooked dates Jibjab\* and Brim\* are packed in sacks of 100 kg. . Skins are used for packing Khastawi\* and some rare varieties for local consumption only." (11)

All of this indicates the high level of human activity involved in the packaging process, the lack of quality controls, and the potential for mechanization at this stage. If the date industry is going to achieve anything like its full potential for the contribution it could make to the Iraqi economy there must be a major investigation into and modernization of this whole area of the industry.

\* Jibjab, Brim and Khastawi : Varieties of dates.

#### 4.6 Date Processing

The main aim of date processing is the transformation of the date into another product to increase the overall consumption of dates, especially of the lower quality dates which are not suitable for eating in their natural state, and do not attract a reasonable price in either the national or international market. In addition, a supplementary aim is to use surplus date production as a raw material for conversion into other products.

The various problems for the date processing industries are being tackled by scientific research, which has shown that there are new areas of expansion available for processing the poorer quality dates. In addition, improved packaging techniques have added considerably to the shelf life of many of these products.

The main products from dates are dibbis (date syrup), arak (Iraq's chief fermented beverage), vinegar, liquid sugar, and yeast all of which are produced on a commercial scale. The production of these products is being improved. Investigations have been launched into the manufacture of glucose, citric acid, and other products such as jam, baby food, and animal fodder. The artificial improvement of fruit quality by glazing and the storage of dates during the khalal stage in deep freeze conditions has been investigated. The manufacture of paper, cellulose and lignin from date palm is also being researched. The projects are likely to yield favourable results in the future.

The processing of dates for all these purposes has been increased from an average of 29,000 tonnes annually for the years 1960-70,<sup>(2)</sup> to 40,000 tonnes for the years 1971-75, with the intention of raising it again to 123,000 tonnes for the years 1976-80;<sup>(3)</sup> an intention probably realized but for which no factual evidence is available. Several arguments can be used to justify the state's involvement in developing date processing :

(a) standardization of quality (b) integrated use of the poor quality (surplus production) (c) profits for state, not individuals. In addition to such general points as (a) (b) and (c) there is the fact that the selling price of poor quality dates was too low at about ID 10 per tonne<sup>(2)</sup> for export, while the price paid to the producer by the state factories was ID 15. <sup>(2)</sup> Also, from time to time dates of an almost inedible quality are disposed of abroad for human consumption, and this does not enhance Iraq's image as a producer of good quality dates. There has consequently been a major push to develop the national processing industry. The third point is that Iraq pays a high price for sugar on the international markets and it is one of the commodities which is subsidised by the state yet sugar - at least in its liquid form - can be produced from dates. Furthermore, many of the by-products of dates, such as alcohol, vinegar and concentrated protein figure in Iraq's import list, whereas Iraq actually has the capacity to export such by-products if conditions for developing those products could be improved in order to stimulate demand. It must of course ensure a good quality product in order to achieve this.

In addition, Iraq's animal population of some 12-15 million sheep, goats, cattle and water buffalo need at least 1.5 million <sup>(12)</sup> tons of feed annually. They frequently suffer from a lack of adequate pasture in years when the rainfall has been poor, yet Iraq has the capacity to process animal feed from crushed stones and the waste tissue of dates, instead of relying on imported fodder.

The processing of dates takes place in four major ways : making alcohol, dibbis, vinegar and, more recently, liquid sugar. For instance, a factory costing ID 7 million (£11.5 million), designed to produce liquid sugar from inedible dates, was under construction in 1980 at Hindiyah, near Kerbala, by the State Organization for Industrial

Design and Production. The factory will convert 42,000 tons of dates a year into 30,000 tons of liquid sugar,<sup>(13)</sup> which is used mainly in soft drinks and ice-cream. In addition a new line has been added to production at the original Kerbala Canning Factory to convert 7,000<sup>(2)</sup> tons of dates a year to liquid sugar.

There are no accurate figures about date consumption in the making of vinegar because most of it takes place at home by private families for their own consumption. There are, however, a few small private factories, and in addition, in accordance with the National Development Plan for the years 1976-80, a factory in Alnomania was built, to produce vinegar from 2,000<sup>(2)</sup> tons of dates a year.

The two major traditional industries in Iraq which depend on dates as the raw material are the production of arak and of dibbis. Arak is one of the most famous alcoholic drinks in Iraq. One metric ton of dates is required to produce about 300 litres of 95% alcohol.<sup>(14)</sup> Iraq produces about 6.6 million litres<sup>(14)\*</sup> annually (see Table 4.5). A factory using 4,000<sup>(2)</sup> tonnes of dates a year at Alkhalis was planned in line with the N.D.P. for 1976-80 for producing alcohol. This level of production was not enough to satisfy the national demand for arak despite the increase (see Table 4.5) though it was sufficient to meet medical and scientific needs.

This industry faces an added problem in that insufficient bottles are available for the bottling of arak because of the absence of an adequate glass industry in Iraq. It would seem, therefore, that in order to speed up the development of this particular aspect of the date processing industry, there must also be a concomitant development in glass production, enabling the marketing of a wider variety of alcoholic drinks especially

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\* see Note (now under reference 14)  
Dibbis : Date syrup

the better quality ones which it will be possible to export as well as to consume on the home market thus cutting down the need to import.

Table 4.5 : Dates used for Processing 1960 - 1980

Period	(a) For Dibbis (000 tonne/year)	(b) For Alcohol (000 tonne/year)	(c) Other industrial uses (000 tonne/year)
1960 - 70	11	8	10
1971 - 75	22	18	N.D.
1976 - 80	36	22	65

Source: Habeeb, K. et al. op.cit. pp.75 and 78.  
Mutab, S. et al op.cit. p.81  
Al-Jebory, M. et al. op.cit. p.52.

Most Iraqi dates are suitable for making dibbis, due to the high sugar content. The method usually followed when making dibbis is to boil the dates under pressure to extract most of the date's syrup. This is a relatively new technique for making dibbis and increases the shelf life of the product, since it kills the bacteria.

Most of this dibbis is consumed nationally although some of it is exported to the countries adjacent to Iraq especially Arab countries. Despite the fact that dibbis is now produced on a commercial scale, there is insufficient to cover all the needs of the country. It would seem, therefore, that both production and distribution need to be improved. There is a type of dibbis which is collected from under the piles of dates and results from pressure and the heat of the sun. It is a natural by-product, but unfortunately it is none too clean and is, therefore only of local commercial use. It is not included in the figures mentioned in Table 4.5.

Dibbis can also be used, rather like honey, both for eating and cooking and thus, because of its versatility, is an excellent means of disposing of surplus or low quality dates.

#### 4.7 The Export of Dates

Before World War One when transportation and communications were not as highly developed as today, most dates were consumed within Iraq although some were exported to the Arab countries, especially the Gulf States, and to Asian and African markets using dhows as a means of transport.

Between the two World Wars a number of foreign companies were involved in international marketing of Iraqi dates. Between 1929 and 1934,<sup>(14)</sup> because of the international economic crisis, the market for dates was confused, because of manipulation and speculation by these companies. In an attempt to develop the marketing of dates to insure an adequate income for producers by increasing the prices, and to limit the effect of speculation on this commerce by the foreign companies a Law (No.38) was passed in 1925 which was subsequently amended by the decree No.6 of 1939,<sup>(2)</sup> and led to the creation of the Institute Council responsible for the control of marketing and processing of dates.

Immediately after World War Two the influence of foreign companies increased. One British company, Andrew Weir, monopolized all exported dates produced in Basrah, and all the Zahdi type produced in the middle Euphrates. In 1950 the state did not renew this company's contract, which expired in 1952.<sup>(2)</sup> Law No.37 of 1952 did not allow for the selling of dates except by companies in which the I.D.A. had at least a 25% share in the capital. Basrah Dates Company was established in 1950 and raised its capital of ID 0.5 million from the I.D.A. (49%), producers and date merchants (26%), and foreign companies (25%).<sup>(2)</sup>

The chief markets for the dates of Iraq were in Asia, although some high-quality Iraqi dates were shipped to America and Europe.

When, subsequently, the foreign companies felt at risk, they transferred their business and equipment for the repackaging of dates from Iraq to America and Europe. That period was marked by a reduction in the amount of dates exported to American and European countries, and also a proportionate decrease in ready-packaged dates for export, since these countries were now able to do their own repackaging.

The price of dates was constant in those countries in spite of a general increase in the price of other foodstuffs. Since both supply and demand were constant there was no possibility of raising the price of dates consumed in those countries only on occasions such as Christmas. Failure to meet these dead-lines would result in a fall in the price to the wholesaler.

Given that most of these exported dates were, in the countries of consumption, viewed as a seasonal and a non-essential item, and also due to the failure to market a 'new image', the wholesale price of dates failed to increase in line with price rises of most other more basic or popular foodstuffs. Therefore, it is worthwhile expanding the study of date exportation and analysing it, since dates are the major commodity exported from Iraq other than oil. Despite this, or perhaps because of this, attempts to increase the value of date exports have been, in the past, inadequate for the market potential to be realised. A better 'brand image' for Iraqi dates needs to be projected, and the currently fashionable Western demand for health foods needs to be capitalized upon. It would seem therefore that the best way to increase demand and consumption of dates, both in America and Europe is to supply a higher quality of date and to exploit the seasonal demand in the period

before Christmas and New Year in particular. For dates to arrive in a better condition on the overseas market more rapid marketing and transportation must be achieved.

In 1960 the Basrah Dates Company was nationalized, I.D.A. having a 100% monopoly.<sup>(2)</sup> In the same year 'Middle Province Co-operative for Date Producers' was instituted, its purpose being the marketing and processing of dates, aimed at increasing the producers' income by regulating the receiving and disposing of the date crop.

About 70% of the dates produced in Iraq are exported annually. The value of the dates exported ranged from 22% to 54% of the overall value of the non-oil commodities exported between 1962 and 1976,<sup>(3)</sup> but on average constituted about one third of the overall non-oil exports (see Table 4.6).

Table 4.6                      The value of dates exported

Period	A. Average annual value of all non-oil exports (ID Million)	B. Average value of date exports (ID Million)	Date exports as a % of total non-oil exports
1950 - 57	18.2	3.9	21.5
1958 - 72	18.0	6.4	35.5
Average 1950-72	18.1	5.5	30.5

Source: Habeeb op.cit. p.86.

However, the quantity exported fluctuates from year to year according to production volume, the type of dates produced, and prevailing marketing conditions.

The quantity exported varied between 200,000 ton in 1968/69 and 306,000 ton in 1969/70, with an average of 253,000 tons from 353,000 tons produced<sup>(2)</sup> during the period 1962-1972.

In 1975 dates accounted for 91% of the total value of all agricultural products exported.<sup>(3)</sup> This high percentage shows just how important dates are in the Iraqi export picture, much hard currency being gained for the Iraqi economy. Reverting to the facts of the recent past, we see that the revenue obtained in 1963/72, using the average value of dates exported in this period, was ID 7.6 million.<sup>(2)</sup> Iraqi Export Company's sales totalled ID 11.7 million in 1982; in the first quarter of 1983 they reached ID 2.7 million.<sup>(15)</sup> During the period 1964-72, the price per tonne rose from ID 26.0 to ID 30.1,<sup>(2)</sup> though this was not as good a rise as with many other international foodstuffs.

Excepting oil, this reliance within the Iraqi export sector on such an undynamic crop has become a cause for increasing concern in recent years.

Although packaging and transportation play a role in the price obtainable the basic problem lies in the fact that, unlike wheat for example, dates are not an essential foodstuff on the international market. It is, therefore, a buyer's market. So considerable effort must be made to stimulate demand for this crop.

One method has been for the Government to write into most international trade agreements a clause including the export of dates from Iraq, though this could well prove counter productive if the purchasing country has no real market for them. Considerable effort will be needed to increase the demand for dates on the world market. There should be a two-pronged attack. First to increase the amount of advertising, particularly abroad where advertising techniques have reached a high level of sophistication, particularly in the U.S.A. and then to improve the commodity to meet the increased demand by further improving and maintaining the quality, diversification of packaging to

include greater variety of presentation, wider availability of fragile luxury varieties by cooling or freezing, speeding up of distribution and better trading machinery.

Unfortunately the income derived from the export of dates in no way reflects the quantity involved due to the exceptionally low prices gained on the international market compared with other exporting countries. For instance, throughout the 1960's, the price of exported Iraqi dates remained roughly constant, and was only about a quarter of that commanded by Algerian dates, and only an eighth of U.S. prices.<sup>(12)</sup> These low prices were the consequence, not only of low income for the date growers but were also related to the poor packaging, soiled condition of crop, poor sorting technique resulting in the mixing of varieties, and transport delays, as well as a lack of pricing consistency. In addition the Iraqi price is particularly low since it includes dates for industrial purposes, whereas the American figure, for instance, is based solely on the export of top quality dates.

Despite this apparent price difference, which should make the marketing of Iraqi dates relatively easy, the reality has been very different. From Table 4.7 it can be seen that the movement in price of Iraqi dates has been very limited. The small rise in the average price obtained on the international market for a metric ton is concomitant with the general inflation seen in all other crops prices over the same period. Thus from 1954-1972 the price of Iraqi dates remained fairly constant which, in terms of that income's buying capacity, represents a very considerable decline (see Table 4.7). This is in spite of a significant increase in the price obtained by other countries for their exported dates.

Table 4.7                      Iraqi dates prices movement

Years	Production Volume 1000 tons/annum	Value ID million/annum	Average price ID/ton
1954 - 9 <sup>(a)</sup>	235	5.8	25
1960 - 4	223	6.3	28
1965 - 9	229	6.0	26
1970 - 2	288	8.3	29
1973     (b)	211	7.8	37

Source : Compiled from (a) Habeeb op.cit. p.104 and (b) Al-Ani, Kh.A.M. and Telfah, Kh. (1977) Encyclopaedia of Modern Iraq, Baghdad Vol.II p.409.

As we have seen, one main reason which makes Iraqi dates unable to command a reasonable price is the poor packaging. About one fifth of the dates exported for human consumption have high quality packaging and these account for two fifths of the total date income. Since the dates grown in the Basrah region are of a particularly high quality, they constitute about two-thirds of the quantity having this better presentation. By contrast, 80% of Iraqi dates are exported using traditional packaging methods such as the use of plaited palm leaves khasafa, sacks and large cans (kerosene tin). In addition a very small percentage is packed in baskets and leather containers, even in oil drums (see Table 4. 8).

Table 4.8                      The quantities exported according to packaging  
( '000 tons)

Years	Modern packaging	Traditional packaging				Total
		Khasafa	Sack	Tin	Others	
1955 - 9	45	137	41	8	4	235
1960 - 4	50	105	57	10	1	223
1965 - 9	43	111	61	5	9	229
1970 - 2	59	137	86	5	1	288

Source: Habeeb, op.cit. p.102.

The type of container is important, since it affects the price. The price of well packaged dates generally reaches twice that of traditionally packaged dates, although within the traditional packaging there is also some differentiation between methods. For example, 'sack' dates are higher by 1 ID per ton than 'khasafa' dates, 'tin' dates are also higher than 'khasafa' dates. Dowson and Aten state that "The huge Basrah crop, most of which is exported, is generally collected directly from the palms in wooden boxes; and it is in these containers that the dates are subsequently transported to the packing stations without further handling. Most of the dates never touch the ground, and those that do pick up remarkably little dirt, for the ground at harvest time is extremely hard and dry."

The boxes generally measure 0.24 x 0.28 x 0.49m. and hold roughly 17.5 kg. of loose dates or 32.5 kg. when compressed. The filled boxes are returned to the packaging station for subsequent re-distribution, including export. (11)

Since the advent of containerized transport, however, dates are shipped in far larger quantities. The U.K. trade uses 16 tonne containers and London has become a centre for the re-exporting of Iraqi

dates. Currently, the quantity imported into Britain varies between 4,000 and 6,000 tonnes annually.

A proportion of the quantity imported into the U.K. is of poorer quality and is used for processing (i.e. ketchup) but most of the quantity imported is of high quality, Basrah's dates being in particularly high demand in the U.K., and the rest of Western Europe, except France and Italy. The case of France is interesting : currently, France buys Zahdi dates and processes them by glazing to improve their appearance and then resells them at a considerably inflated price, a further stage of processing which Iraq could carry out itself, but currently has yet to capitalise on. This illustrates the value of attaching greater importance to the packaging of dates with its concomitant effect upon prices.

About 83% of the Iraqi dates exported are for human consumption as fresh dates i.e. consumed in the year of production, while the remaining 17% was exported for processing<sup>(2)</sup> in the period 1954 to '73. This 17% includes low quality dates which are inedible, and the old dates which were produced in previous years and have lost their flavour and shape because of time and inadequate storing. These contribute just 6% of the income from exporting dates, since their price is about one third of the fresh date price.<sup>(12)</sup>

However, processed dates are not exported because; firstly there is no surplus of by-products (processed dates), since those in the best condition barely satisfy national demand and, secondly, buyers prefer raw dates rather than those processed for two reasons; the price is lower and they can adjust the by-products according to the demand in their own countries.

It would seem therefore that to improve the export of processed

dates there needs to be a study made of the international demand for those by-products to determine what possibilities there are for meeting those demands within the national dates industry. It might be economically sound to build or add to factories, which would develop those by-products shown to have an export potential. Thus a new demand for dates would be created and prices would rise accordingly, since raw dates left from the previous year and then exported for processing abroad command a very low price whereas by-products manufactured in Iraq would fetch a much higher price and have a greater storage life and thus be more attractive to importers.

A serious problem arises when foreign importers sell second-class Iraqi dates, intended for processing, as good, fresh dates, thus harming the image of Iraqi dates. Therefore, an expansion of the markets abroad would not only absorb a larger quantity of the remaining crop but would enable Iraq to develop a more viable home processing industry. This, and the annual loss to the Iraqi economy, make the need to find a solution to the problem of marketing these poorer quality dates very urgent.

The quantity exported for processing varies from year to year. The price is variable as well, but generally exporting prices for processing dates are lower than purchasing price from producers. The importance of variety and quality decline affects price since those sorts of dates are not for human consumption (see Table 4.9).

Table 4. 9

Dates for processing

Year	Purchasing price from producer (ID/tonne) paid by I.D.A. (a)					Export price (ID/tonne) All varieties (a)	Quantity exported for processing (tonnes)
	Variety						
	Halawi	Kathrawi	Sayir	Basrah Zahdi	Euphrates Zahdi		
1968	23	19	19	11	10	9	46,100 (b)
69	"	"	"	"	"	"	55,000
70	"	"	"	"	"	"	1,000
71	"	"	"	"	"	10	104,400
72	"	"	"	"	"	14	4,500
73	"	"	"	"	11	12	93,200
74	24	20	20	"	"	14	4,800 (a)
75	27	23	22	13	13	19	1,900
76	32	32	26	17	16	22	24,300
77	35	35	28	21	21	21	39,300
78	39	38	36	26	26	23	1,300

Source: (a) Mutab, Sh.F. et al (1979), Means of Developing Dates and Palms, Baghdad, p.76 and 77.

(b) Habeeb op.cit. p.83.

From this it can be seen that the extent of loss because of these prices control policies, is considerable. In most years the export price is below all the relevant purchase prices and losses are, of course, far greater than this table indicates because the other costs involved in marketing, transportation, storage etc. are not taken into account.

The prices of processing dates exported decreased compared with fresh dates, the difference between them rising from ID 16.2 per tonne in 1954/55 to ID 23.0 in 1972/73. (12)

The annual loss to the I.D.A, arising from the export of dates for processing, rose from ID 13,400 in 1954/55 to ID 2,168,100 in 1972/73. (12) This is one of the most important factors contributing to the I.D.A's total burden of losses. The unsold dates have doubled the costs for transportation, loading and unloading, plus the cost of storing. Hence the I.D.A. sells those varieties of dates at about one third of the normal price of top quality dates in the international market, yet the I.D.A bought these commercial dates from producers at an official price because government policy is that the I.D.A. must purchase all commercial varieties.

#### Geographical destination of dates exported from Iraq

About 50 countries round the world import dates from Iraq, the amount and type for each country varying considerably. This variation is influenced not only by the quality and type of packaging and varying national consumption habits but also by political consideration.

After the Revolution of 1958, attempts were made to open up new markets. Previously, no dates had been exported to socialist countries, but with the change in political outlook in Iraq came a dramatic improvement in the trade figure with other Socialist countries.

The Socialist bloc is now Iraq's major customer, taking 40% of total output (see Table 4.10). U.S.S.R alone imported 47% of the dates exported to the Socialist countries in 1972, and China 46%, leaving only 7% for the other Socialist countries. (12)

In the years immediately following the Revolution of 1958 exports to the America and Europe showed a steady decline until 1969 when a period of stagnation followed, only 8% of Iraq's total export going to these countries. By 1972 U.S.A. was importing 43% of the

Table 4.10 :

Political and Geographical distribution of dates exported from Iraq  
(1000 tonnes, ID 1000)

Years	Socialist				Capitalist				Asian				Arabian				African				Others			
	Vol. Tonne	%	Val. ID	Price ID	Vol. Tonne	%	Val. ID	Price ID	Vol. Tonne	%	Val. ID	Price ID	Vol. Tonne	%	Val. ID	Price ID	Vol. Tonne	%	Val. ID	Price ID	Vol. Tonne	%	Val. ID	Price ID
1955-59	12	6	283	24	40	17	2135	54	77	33	1434	19	89	38	1466	17	11	5	263	24	6	3	223	37
60-64	66	22	2104	32	37	13	1895	51	64	29	1304	20	54	24	958	18	9	4	211	23	3	1	194	65
65-69	75	33	2217	30	19	8	1290	68	76	33	1672	22	42	18	822	20	12	5	212	18	5	2	152	30
70-72	110	40	3246	30	23	8	1730	75	89	32	2062	23	45	16	853	19	8	3	184	23	2	1	195	98

Source: Habeeb op.cit., p.88 & 89.

Note: Each column is mutually exclusive : 'Socialist' refers to the 'Peoples Democracies', excluding those in Arabia and Africa. 'Capitalist' refers to the developed Western democracies.

'capitalist' quota, France 16%, U.K. 12%, Canada 9%, Australia 8%, and New Zealand 4%. (12) The 1984 U.K. figures show that 4-6,000 tonnes are imported annually according to Iraqi Embassy Commercial department.

The non-Arab countries of southern Asia maintained the level of their imports from 1955-1972 although the revenue increased as world prices rose. India is Iraq's third largest market, following the U.S.S.R. and China in the total volume imported. Pakistan and Sri Lanka are other important south Asian markets, with the Far East taking about 12% of the southern Asian total. (12)

The proportion of dates exported to Arab countries decreased from 38% in 1955-1959 to 16% in 1970-72 (see Table 4.10), the reason almost certainly being that these countries developed a date industry of their own. Syria was the largest Arab country importing Iraqi dates. However, this quantity has decreased over recent years. From 1968 - 72, Syria alone imported 26% of the total Arab consumption, followed by the Yemen 17%, Egypt 12%, the Gulf States 12%, Sudan 10%, Lebanon, Jordan and Morocco. (12) Some of these countries now export dates, Morocco being one such new exporting state.

In Africa there is little demand for Iraqi dates and even this demand has decreased (see Table 4.10). By 1972 Somalia was importing about 58%, South Africa 15%, Ethiopia 11%, Tanzania 7% and Kenya 6% with all other totals being insignificant.

From the above figures and Table 4.10, it can be seen that, of political groupings, the socialist countries come top, purchasing 40% of Iraq's exported dates with the industrialised capitalist countries although purchasing only 8%, buying the top quality dates, and hence contributing about as much revenue to the Iraqi economy as, for instance, the Asian group who, by volume, purchase some 32%.

Geographically speaking Asia is the main market for Iraqi

dates since China and India are the second and third largest consumers respectively.

The unit price of Iraqi dates in the world market varies from group to group, the industrialised capitalist countries generally purchasing the top quality of Iraqi dates, and therefore paying the highest price, between two and three times the price paid by socialist bloc countries. Africa and Asia pay far less than elsewhere but they are prepared to accept poorer quality stock.

The transportation of date exports is largely by sea using both modern and traditional ships but partly by road. The quantity exported by ship reached a peak of 80% of the total quantity exported between the years 1960-64, after which it decreased to 73% (see Table 4.11).

The quantity transferred by dhow has increased and is almost exclusively limited to dates for processing en route for neighbouring states. The quantity transported by land like that by dhow, was primarily for the neighbouring states and particularly Syria, but this has decreased as that market has declined.

Table 4.11                      Method of Exporting Iraqi Dates

Years	Modern ships		Dhows		Road		Total
	Volume	%	Volume	%	Volume	%	
1955-59	163	70	21	9	51	21	235
1960-64	178	80	13	5	22	15	223
1965-69	167	73	44	19	18	8	229
1970-73	204	73	46	17	28	10	278

Source : Habeeb, K. op.cit. p.97.

Given the problems associated with export by ship since 1980, the potential for greater use of road transport for date exports is clearly considerable.

The main varieties of Iraqi dates exported are Halawi, Khathrawi, Sayir and Zahdi. Capitalist countries tend to import the higher quality dates plus some processing dates, with, for example, France importing the poorer Zahdi variety because it can be up-graded by glazing and subsequent re-packaging. This adds extra value to the product and explains why France obtains the highest world price for its re-exported dates. However, Zahdi is mainly exported to Asian and African countries and to Italy. It constitutes about 70% of the total dates exports, with Sayir comprising 16%, Halawi 9%, and Khathrawi 1%. (12)

Dates are exported by both the public, via I.D.A. and private sectors. The public sector stage, however, has been increased recently (see Table 4.12). Because this sector tends to cover the exporting of dates to the socialist bloc, the states of which have signed contracts with the government to ensure supply of the quantity required, the state tends to maintain this important market, which buys about 40% of the Iraqi dates exported annually (see Table 4.10). In addition, American, European, and Antipodian markets usually buy the high quality dates. Therefore, these two groups of markets represent important buyers : high quantity for the former and high price for the latter. The state aims to develop these markets, by ensuring an adequate quantity and price.

The quantity and price for the dates exported to the socialist bloc are agreed upon in advance when the agreement is signed. But the quantity supplied to the second group is priced by I.D.A. annually, after studying all the factors including the quantity that it is possible to supply, the cost of dates to the I.D.A., the varieties available and required, the qualities available, and the price of other dates in the international market.

Table 4.12 The export of dates by public and private sectors

Years	Public sector		Private sector		Total		Price(ID per tonne)	
	Volume ('1000 tonnes)	Value (ID million)	Volume ('1000 tonnes)	Value (ID million)	Volume ('1000 tonnes)	Value (ID million)	Public Sector	Private Sector
1964/65	98	3.6	138	2.3	236	5.9	37	17
65/66	82	3.3	133	3.1	215	6.4	40	23
66/67	124	3.8	145	3.1	269	6.9	31	21
67/68	102	3.7	120	2.4	222	6.1	36	20
68/69	109	4.1	92	2.2	201	6.3	38	24
69/70	152	4.2	154	4.1	306	8.3	28	26
70/71	142	5.3	92	2.3	234	7.6	37	25
71/72	143	5.7	148	3.3	291	9.0	40	22
72/73	173	6.7	83	2.3	256	9.0	39	28
73/74	201	7.3	98	2.5	299	9.8	36	25
74/75	167	8.0	79	3.1	246	11.1	48	39
75/76	217	9.2	77	2.7	294	11.9	42	35
76/77	163	8.8	17	1.9	180	10.7	54	111
77/78	216	13.5	14	1.1	230	14.6	63	79

Source : Habeeb, op.cit. p.97.

Commercial departments in the Iraqi Embassies advertise Iraqi dates. In the light of this information the buyer orders the quantity, variety and quality required, and can negotiate the price. In this case the commercial department contacts the I.D.A. after checking other date prices and qualities in the market and supplies the I.D.A. with this information. According to this information the I.D.A. decides the final price for that market.

When the quantity of dates exceeds the exporting capacity of the I.D.A., the state permits the private sector, via authorised merchants, to export dates. The private sector is usually allowed to export dates to South East Asia, Eastern Africa, and to the Arab countries. The price of dates exported by authorised merchants varies according to supply and demand, according to normal commercial trends.

The quantities of Iraqi dates exported to various groups vary from year to year according to the quantity available, quality and variety, price, and the government policy. However, priority is given firstly to supplying the socialist bloc in order to satisfy the agreements signed between these countries and Iraq, followed by America and Western Europe, because of the good prices, and finally to Asian and African countries which mainly receive exports by the private sector. The considerable annual fluctuation, in both quantity and quality of production, are a constant problem when trying to develop and guarantee Iraq's exports of this most famous and important of her agricultural products.

#### 4.8 Conclusion

The cost of date production today is unacceptably high. The reasons for this are the high labour cost and the scarcity of skilled workers, since almost all stages in the production of dates from initial cultivation of palms to the harvesting and packaging is done manually. Mechanization is in its infancy and is not used on any commercial scale, so the price of dates remains high and the internal market suffers a shortage in supply. Indeed many date palms are left unfertilized and unharvested, since there are too few workers to perform these tasks despite the attraction of high wages, and this cuts the profit margin for the grove owner. If mechanization were introduced a grove owner could make a good return on his investment. As a consequence of all these factors the

price of good quality dates in the national market is too high, even higher than that for most imported fruits, because on the home market the retail price follows market forces.

Even taking into account the major variations in consumption habits which occur between north and south, the national distribution of dates is insufficient to meet national requirements, with some local markets, especially in those northern areas which do not themselves produce dates often receiving inadequate supplies, even during the main distribution season. The availability of good quality dates out of season is low, as little effort is made to invest in modern freezing, cooling and packaging techniques which would enable good quality dates to be on sale all the year round. Producers must realize that although 70% of their production is exported, the remaining 30% is a significant amount and the needs of the home market must be studied and catered for.

All these factors have resulted in a loss to the community of one of the most nutritious foods available and one in which the country specializes. Even in a country like Iraq where people realize the advantage of date consumption and with a long-established tradition of eating dates there is much scope for encouraging further date consumption, at least to the level of previous decades and preferably beyond. In order to achieve this aim, the price to the consumer must be realistic. As profit margins are already low, the only way to decrease the price to the consumer, other than by government subsidy, is to decrease production costs by the use of machinery instead of manual workers, wherever possible, since cheap fuel is available which not only cuts costs but speeds up various processes like fertilization, pruning and harvesting thus enabling many more palm groves to be productive. Dates will thus be more readily available and more widely distributed throughout all local markets in Iraq.

The date industry needs to look at the question of retail packaging. The present system of customer selection from large containers has many drawbacks including the prevalence of dust and insects and is particularly unsatisfactory where the fragile varieties of date, such as Rutab, are concerned. Pre-packaging in cellophane or boxes in a variety of quantities would reduce losses from contamination and damage and ease the purchaser's lot.

As for date processing there is scope for expansion available in the existing industry for the development of present products and the introduction of new ones. For example the British and U.S. taste for new varieties of chutney is a totally untapped market which the Iraq date industry could well exploit, particularly since low quality dates are eminently suitable. Although initially the need is for expansion to meet current demand in the longer term there is a need to stimulate new areas of demand, both at home and abroad, and hence a need for good advertising exists. Additionally, it would be beneficial to the economy for the present system, whereby low quality dates are exported to be used commercially, to be replaced by a national processing industry. As mentioned earlier, there is scope for the introduction of new foods based on dates which are known abroad, but which are not common in Iraq.

In addition, to allow wastage of dates in the groves is a negative policy since a large proportion could be used to provide much needed animal fodder. Few animals consume raw dates but when mixed with barley or maize, a very nutritious fodder is obtained.

About 70% of the dates produced in Iraq are exported annually, the value ranging from a quarter to a half of the overall value of the non-oil commodities exported. About one fifth of the dates exported for human consumption have high quality packaging and account for two

fifths of the total date income. Good packaging can prolong the shelf life of dates and therefore plays a major role in determining the price level. This can vary, for instance, in the case of the U.K. from £800 to £1000 per tonne, according to type and quality. Poorer quality dates are used for processing but generally speaking it is good quality dates which dominate the import quotas for Britain and much of Western Europe.

It is vital that the exporting agencies should understand the varied and changing needs of importing countries since dates often have a seasonal demand especially in America and Western Europe. The fact that Western Europe pays far more for its dates than does Eastern Europe, which in turn pays more than Asian and African countries is important and must be borne in mind.

To preserve a good image abroad for the Iraqi date industry, the I.D.A. must not export the previous season's dates, but must dispose of such dates on the home market to help meet the national shortages. The I.D.A. has the necessary flexibility and capability to cope with this problem of distributing the un-exported dates to local markets so that the population can benefit nutritionally even though the financial gain to the government is minimal. Selling poor quality, old dates on the international market does nothing to enhance Iraq's export trade. The aim of the I.D.A. in expanding date exports should be to so improve the quality, packaging and price that the word 'date' becomes synonymous with quality and with Iraq.

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CHAPTER FIVE

LIVESTOCK MARKETING

Animals and their many products account for almost half the revenue raised from the whole agricultural sector in Iraq, for although the volume of such products marketed is considerably less than in the arable sector, volume for volume, animals and their products fetch a much higher price on both the home and overseas market than do the Iraqi crops.

Because of the perishable nature of many of these commodities and the rapid deterioration in their nutritional value it is essential that their specific needs are met when considering all aspects of marketing facilities which include refrigeration, suitability of transport and infrastructure. The issue of good management in all areas of storage, transportation and distribution is therefore a major area of concern and is consequently an important component of this chapter.

Locally at least, livestock marketing has always been important since animal products are an important source of food, and indeed a source of revenue because some livestock by-products are exported. The export of livestock products constitutes the third major export element by value after oil and dates in the Iraqi economy.

The growth in the number of livestock has recently been about 2.2% per annum. Given a population growth of about 3.2%,<sup>(1)</sup> this gives a deficit increasing by 1% per annum and hints at an increased need to import selected animal foodstuffs. Furthermore, the demand for animal products has been increased because of the increase in per capita income, and an improvement in the dietary outlook of the nation, given that animal products such as milk, meat, and eggs are a major source of protein as well as the major vitamins, A, B, and D and the complete range of amino acids (unlike plant protein).

Marketing of animals and their products generally is still underdeveloped. Traditional methods are followed in many areas as will be explained later. Few modern facilities are available. The system is dependent mostly upon middlemen who control entirely the marketing of animals. Marketing practices in this sector have thus, of themselves, contributed to an increase in the price and a frequent lack in the availability of many products to the consumers. An additional problem is that, although some new market-oriented producers of livestock have entered this sector, far more than this have left it, migrating from livestock production to other sectors of the economy, thus simultaneously reducing the level of production and increasing the number of consumers.

Therefore, this situation needs specific study to diagnose the obstacles or the difficulties facing this activity, and to suggest possible means for solving the problems which are rife in this sector.

#### 5.1 The role of the Iraqi livestock sector

The important function of this sector is to make meat, milk and eggs readily available for consumers and to provide raw materials for the many national industries which are at least partly dependent upon such livestock products as skins and wool. Further, the export of skins, gut and some wool constitutes an important source of revenue.

Animal products represent a significant part of the Iraqi national income, 12.5%,<sup>(2)</sup> and indeed contributed 45% of the total value of all the agricultural sector in 1967.<sup>(3)</sup> They contributed slightly less than half (48%) of all agricultural products, amounting to ID 106 million in 1970.<sup>(4)</sup> The total value of the livestock population in 1970 was estimated at ID 273 million.<sup>(5)</sup> This means that the livestock sector potentially occupies the third most significant part in the Iraqi economy after oil and crops.

Raising animals constitutes a source of income for many farmers, in addition to their other agricultural activity. As well as those few sedentarized farmers whose income is solely derived from their livestock, the declining nomadic population has traditionally been entirely dependent upon the raising of livestock for its wealth.

## 5.2 Domesticated animals and the effect of market on their respective distributions

Of the large animals, sheep, goats, cattle, buffalo, and camels are of importance in Iraq, in addition to which poultry, mainly chickens, are important. Livestock can be found in all settlements in Iraq. However, the type of animals and the methods by which they are raised varies considerably from one settlement to another according to the interplay of varying environmental, economic, locational and customary factors. There are also wide variations in the density and kind of livestock raised, largely related to their products. Cattle and buffaloes are mainly concentrated near urban centres where a high demand for milk exists because fresh milk is difficult to transfer long distances. Commercial production of chickens is also concentrated near urban centres. Conversely, sheep and goats predominate in the remoter areas because there is little problem in wool transportation, but this has retarded developments involving the commercialisation of sheep and goat meat in the expanding urban markets. Inevitably, therefore, the ready availability of markets plays a major role in the geographical distribution of animals and the consequent full exploitation of the animals' potential. Transportation is an important factor in livestock marketing. Generally speaking, whenever the products are sensitive to time and temperature the animals can (or should) be found near to main markets. In theory, where there is a high human population density, rearing is more concentrated : there is more fodder,

a better veterinary service, and better husbandry - all in all, because of better incentives and a heightened awareness of commercial practices, these farmers look after their animals better because the demand can be expected to be high and immediate. This encourages full exploitation of the animals' potential. Further, the income from selling additional production justifies extra expenditure on feeding and services for the animals.

Similarly, theory would suggest that, other things being equal, animal rearing areas become less intensive wherever human population density decreases. The extreme example is the nomadic rearers, who depend almost entirely on natural pasture for feeding their animals: their livestock are in the open day and night, with little protection from climatic extremes, little access to veterinary services and no readily available marketing facilities. There are still some nomadic tribes whose different life style presents very different problems. It is difficult for the government both to establish facilities for such people's animals, or to incorporate them within a census. This is the major reason contributing to the unreliability of statistics on numbers of animals in Iraq. Moreover, traditionally, these nomads and their flocks have even moved beyond the boundaries of Iraq into Syria, Saudi Arabia, and Kuwait seeking pastures and markets, thus increasing the problems of analysis. Therefore, the figures available for livestock, especially for sheep, goats and camels which are the main animals bred by nomads, especially in the counties which have borders with these previously mentioned countries can only be estimated.

Sheep are found in all areas of Iraq with a higher density in the counties such as Nineveh and Thi-Qar where large areas are under 'natural pastures'. (see Table 5.1) Goats are mainly found in the mountainous regions. Cattle and buffalo are bred mainly for their milk and milk products as mentioned before, and are therefore concentrated

Table 5.1 Iraq : Numbers of animals, 1978

Governorate	Goats	Sheep	Buffalo	Cows
Nineveh	244,107	2,027,623	6,014	107,506
Salah Al-Deen	127,645	632,169	1,624	62,055
Ta'meem	114,561	473,513	1,850	48,464
Diala	187,830	712,166	5,867	114,937
Baghdad	68,822	204,672	41,773	160,174
Anbar	36,381	489,356	1,152	64,448
Babylon	124,713	505,616	7,001	160,327
Kerbela	10,063	91,718	2,985	26,676
Najaf	5,418	124,874	8,104	62,489
Qadisiya	111,053	570,926	11,455	129,691
Muthanna	32,654	753,806	2,478	53,258
Thi-Qar	54,322	899,982	20,761	178,882
Wasit	348,157	857,647	8,428	169,576
Maysan	46,467	517,107	26,318	146,883
Basrah	14,675	111,707	22,558	80,252
Autonomous Region				
D'hok	158,669	128,609	236	13,674
Arbil	183,195	330,382	537	35,447
Sulaimaniya	189,573	291,436	1,211	82,878
Total	2,058,305	9,723,309	170,352	1,697,617

Source : Statistical Survey (Results of livestock survey, 1.10.1978).p.87

The most recent figures (1981) give totals of : 3.1 million cattle, 11.9 million sheep and 3.8 million goats. (13). This, particularly for cattle, represents an astonishing increase and indicates the government's determination to improve the country's meat and dairy production radically.

in the regions which have a high milk demand. In addition, buffalo are found in the marshland areas where they are one of the few animals which can graze on the natural shrub vegetation.

Finally, camels mostly exist in the desert areas where they can live in difficult conditions often without water for many days feeding on vegetation which other animals can not eat. They are used for human and goods transportation and for their milk, meat and hair. Not only, therefore, are there the usual environmental constraints which help to explain the pattern of animal distribution but in addition, the marketing system, and access to points of consumption, play a critical role.

Marketing of animals, if not their products, differs from the marketing of any other commodity since all live animals require very specific conditions throughout their marketing and these vary considerably from type to type. Marketing facilities have to be suitable to maintain the animals, and their perishable products, i.e. eggs and milk, in first class condition. They are sensitive and easily affected by time, atmosphere, and storage techniques. Unsatisfactory handling can quickly turn an asset into a liability by allowing the condition of the animal or its product to deteriorate to a point where it becomes detrimental to health. The risk of bacteria development and consequent disease is always present. In contrast, with speeding disposal of such perishable products under low temperatures and using clean suitable containers, the nutritional value will be at its highest and the potential for greatest benefits to both producer and consumer is at its maximum.

Generally speaking most animal products have higher value and lower volume than other agricultural products. Some of these products are processed to increase their value and decrease their volume, e.g. dairy products processed into cream and cheese. This can prolong

shelf-life and decrease the cost of marketing, but processing not only costs money but may sometimes decrease the nutritional value of the food.

### 5.3 Animal foodstuffs

Fodder can be divided into two types : that which allows an animal to survive, and that which encourages stock improvement. The former will only preserve the animal's life but provide little in the way of extra benefits. The second, however, will result in an increase in production. So, to obtain a more productive animal, supplementary feeding is essential. This will solve the problem of poor livestock production due to a lack of good fodder. The fodder must, of course, provide the required nutritional diet for the type of meat or products required. This could be met by expensive fodder concentrate, but most private rearers depend upon material readily available such as green roughage and barley in the north, while moist crushed date stones and a coarse reed (*Typha Angustata*) are used in the south, the latter particularly by water buffalo.

There are two kinds of fodder to be found in Iraq : natural and concentrates. Natural fodder includes green, dry and fermented vegetation. Green fodder is natural pasture and cultivated pasture; dry fodder is plants remaining after the harvesting of cereals and similar crops; fermented fodder is one or both of the foodstuffs mentioned above with added dates which is then stored for a period until it has fermented. The source of natural fodder is natural pasture, but these have decreased in recent times since most potentially cultivable land is now used for cultivation. Over grazing is another factor which has had a bad effect on natural pasture. Therefore it is necessary to 'farm' natural pasture to maintain wild plants, by preventing pasturing at certain times

to allow those natural plants to produce seeds to improve the quality of the pasture and by cultivating more suitable seeds for subsequent planting. For instance, by using the rotation method it is possible to allow empty land to lie fallow for a season or even longer, and then be planted with some legume crop such as clover which will not only benefit the pasture by improving the soil fertility, but which can also be grazed.

Concentrated fodder encompasses cereals such as barley, wheat, maize and sorghum which constitute the major source of energy; oil seed skins such as cotton seed, sesame, soya beans and sun flower which are a main source of protein, and animal protein which represents an essential element in concentrated fodder since it contains amino acids necessary for growth. In addition to minerals some vitamins and antibiotics which are necessary to protect animals from disease, are added.

Animal protein can be obtained from pulverised fish, meat and blood. By-products from milling are often used and this reduces the cost of concentrate fodder since the price is low. The overall production of these by-products is about 350 tonnes a day.<sup>(7)</sup> Wheat can produce 10-15% of by-products, and rice about 26%.<sup>(7)</sup>

The essential element in manufactured fodder must be protein. There are two sources of protein : animals and plants. The sources of the former are fish, meat, liver and dried blood, while the second is various vegetable oil seed skins. Iraq usually imports most of the former, though, given international shortages, has to do so at externally high prices, and produces the latter. In both of them there is a problem of availability, however, the Iraqi Fish Company has been producing pulverised fish for this purpose (see the penultimate section of this chapter). In addition, animal protein comes from abattoir by-products. The second source of protein comes as a by-product of oil seed factories.

This production is lower than demand. In addition tarella yeast, which is produced from sugar by-products and dates and contains about 40%<sup>(7)</sup> of protein in its dry form, is used.

#### Fodder marketing

Some rearers store a part of their own crops such as cereals and plant remains, in traditional stores after the harvest. Others buy some cereals and plant remains from nearby farms, which they usually find to be cheaper than buying from further afield. Most fodder marketing is done locally. However, there are some middlemen who buy fodder from the producer, to transfer to the raising areas. Fodder thus sold fetches high prices. These middlemen are particularly active in those remoter areas where it is difficult for rearers to acquire their own fodder supply.

The state Dairy Company follows the barter method whereby payment in kind is made based on previously fixed cash equivalents for all the goods involved for supplying cattle and buffalo rearers with fodder. It supplies rearers with fodder and deducts the cost from the milk revenue paid to them. In spite of this, fodder is insufficient to satisfy their animals' optimum needs though it provides an important part of the overall quantities needed, which means that animals rarely reach their full milk producing potential. Marketing of fodder concentrate in this way encourages the rearers to keep up a continuous supply of milk to the factory. Some private factories are now following the same method for the same reason.

Fodder price is generally determined by supply and demand. However, government involvement lessens the effect of those factors. Manipulation of prices by middlemen becomes less in consequence of this government fixing of the prices of some of the raw materials used

in fodder production. Ultimately, however, fodder price is affected by both the level of domestic production and international prices for imported fodder. International fodder price, especially for protein sources, has increased considerably because of the increase in international demand, and limited production. However, fodder raw materials produced in Iraq show less increase in their prices. This helps to balance the price of fodder, but despite that there is still a significant shortfall in supply. Rearers can be encouraged to use fodder concentrate in four basic ways. Firstly, by decreases in fodder cost : this is achieved by either producing more domestic animal protein such as pulverised fish and abattoir by-products; or by importing fodder concentrate when it is cheap on the international market - this of course would necessitate making available sufficient storage to keep the fodder until needed. Secondly, by supplying fodder by the barter method and deducting fodder prices from milk or meat value. Thirdly, by providing credit whereby fodder costs are set against ultimate sale price. And, finally, by governmental subsidising of the price of fodder concentrates.

#### 5.4 Marketing of live animals

Given that areas of livestock production do not always coincide very closely with areas of consumer demand, various methods must be followed in the marketing of these animals to bridge this spatial gap.

Private sector middlemen with much experience in this field mainly control the market. They are the major influence on prices since they still practice manipulation and speculation in the marketing of animals, as they used to with some vegetable products. Therefore, it is difficult to fix any official price. Producers have not organized themselves and have no association to deal with pricing. In each market

there are middlemen through whom most of the selling and buying is done. Marketing of live animals for meat takes place through the following 5 channels:

Firstly, the most widely used channel for marketing live animals is through a merchant operating both in the animal rearing areas and in Wagfas\*; where he purchases live animals, then transfers them to the abattoir or to the butcher, with, some times, other dealers intervening between merchant and butcher. Merchants can be found in Wagfas purchasing live animals which were brought in by the producer himself.

Secondly, butchers buy live animals directly from rearers and take them to the abattoir for slaughter. This enterprise mainly takes place in the live animals market, the Wagfa. In addition the butcher may buy directly from the villages.

Another method is the marketing of live animals through creditors : this is usually based on an agreement between the rearers and the money-lender, whereby the farmer agrees to supply the latter with animals to meet his debts. The creditor may subsequently sell to a butcher, a merchant, a dealer or direct to the abattoir.

Fourthly, producers bring their animals directly to the abattoir to sell them to Gobanchi, who slaughter them and sell them to the retailer butchers. This is rarely followed.

A fifth possibility is where, in the Wagfa, there are a number of dealers. They operate between the seller and the buyer in the hope of making a commission on the deals. They intervene between creditor, merchant, and butcher, as well as with the rearer who himself brings his animals to the Wagfa. Some times a transaction is made between creditor and merchant after which the animals are transferred to the

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\* Wagfa : live animals market  
Gobanchi : Wholesale professional slaughterers.

Wagfa. Again these animals may be sold to the butchers via a 'commissioner'. This final method is seldom followed since it is too long and too costly.

For public sector projects there are two methods for buying live animals either through private merchants, or through official committees. In both methods animals are supplied by private rearers. Attempts have been made by the government to price each category of animal according to age, weight, species, and sex. However, the control of these enterprises is in the hands of the private dealers operating in the animal market. These animals are bought for breeding or fattening for selling to the consumers after slaughter. The ultimate aim, at least of the government, is to organize animal marketing in order to make meat more readily available at a reasonable price.

When selling through the public sector the animal is taken directly to the abattoir, with no involvement for the middlemen. However, most of public sector projects for fattening animals failed. The reason would seem to be partly that the lack of incentive in the form of profit making affected the commitment of the workers to the project, and also that bureaucracy became too complex. The alteration of any factor in this industry influences the success or failure of marketing schemes, since live animals need specific conditions to survive and mature : not surprisingly it has been, and still is, dominated by people with long experience of, and a vested interest in, its complexities.

A further attempt made to encourage and extend animal rearing was the establishing of livestock projects for fattening and breeding sheep and bullocks in co-operatives. The means was by increasing the number of rearers, some of whom cultivated land only whilst others practised mixed farming. Unfortunately most co-operative projects for bullock or sheep rearing and fattening failed for a variety of reasons,

but not least because some co-operative members seemed not particularly interested in a scheme, the planning and ultimate purpose of which they felt divorced from. Others were only interested in their own animals, being unconcerned with the co-operative project, a classic case of 'everybody's business being nobody's business'. Unfortunately, therefore, most of those projects have been abandoned to prevent losses year after year and thus avoid a growing co-operative budget deficit, rather than being rethought and revitalised. Many of these projects were successfully taken over by private enterprises. However, some good examples of long-term private schemes for fattening bullocks, lambs and goats are to be found in some villages near Mosul, and in Zubair near Basrah.

As a consequence of the increased and still increasing demand for meat, fattening animals has thus become an important industry. The most important element in this industry is fodder which constitutes about 75% of the production cost, so when fodder price is reasonable these projects are successful. The traditional feeding methods used in Iraq are generally inadequate. There is much scope for the use of supplementary foodstuffs enabling the full body-weight potential of the animals to be reached. For example, an average ready-to-market bullock's weight can be increased from 150 kg. to 250 kg. and for lamb from 30 kg. to 50 kg. by supplementary feeding. To put on 1 kg. of meat, each bullock needs 2.5 kg. of concentrated fodder, 5 kg. of green fodder, 1 kg. oil seed skin, and 1 kg. hay, whilst lambs need 2.8 kg., 7 kg., 3.5 kg., and 2 kg. per head respectively of these fodders. <sup>(8)</sup> It takes one week for a lamb to put on 1 kg. of weight, and a day for bullock to gain 0.7 kg. <sup>(8)</sup> However, the capacity of buffalo calves to increase their total weight is about one and a half times that of cattle calves. Therefore to delay the slaughter of buffalo calves while they

are fed with good fodder concentrate will result in a big improvement in meat production. Alas, buffalo calves are almost invariably slaughtered too young, in spite of there being a law on animal slaughtering giving minimum weights for live animals slaughtered in official abattoirs. Legally, a buffalo must weigh 200 kg. before being slaughtered, a sheep 30 kg, a goat 25 kg. and cattle 180 kg.<sup>(9)</sup> Some animals are slaughtered under-weight, the farmer being unable to increase their weight further due to a lack of fodder. This often makes abattoirs over-tolerant. If fodder had been sufficient, there would have been no justification for this practice. But another reason is that the demand for young livestock meat is high. However, an increase in fodder will increase the quantity of meat while maintaining its high quality. This not only increases the amount of saleable meat but also, when applied to other animals, improves the quality and quantity of milk, skins and wool. Insufficient fodder will make the meat quality lower, since the texture will be tougher. Inevitably a lack of sufficient fodder will result in weak animals, with lower production of meat, milk and wool, and which are more prone to disease and early death.

### 5.5 Meat marketing\*

Meat is one of the most important foods for the human body, although not strictly essential since the body's needs can be met entirely from vegetable sources. Meat contains protein, between 17% and 19%,<sup>(10)</sup> which is necessary for body building and is more useful than plant protein, since it contains all the amino acids necessary for the body's functions. Therefore, consumption of meat is higher in the developed countries because most people not only appreciate this fact but can afford to act on it. Its consumption rises with increases in purchasing power as incomes rise. In addition, meat is nowadays more readily available in the markets because of improved marketing techniques.

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\* This includes sheep, goats, cattle, buffalo and camels : poultry is dealt with separately.

Meat constitutes the major source of protein in developed societies. Animal protein reaches about 70% <sup>(10)</sup> of the protein consumed in those countries. In New Zealand, for example, in the 1970's the daily per capita consumption for animal protein reached 74 gm. <sup>(10)</sup> from a total intake of 107 gm. <sup>(10)</sup> from all foodstuffs.

In Iraq an average per capita consumption for animal protein is about 16 gm. a day from a total protein intake of 60 gm. i.e. about 27%. <sup>(10)</sup> The average protein consumption in developed countries is between 80 gm. and 110 gm. per day, while in developing countries the intake is 40-70 gm. a day. <sup>(10)</sup> The average per capita needs for overall protein intake is about 100 gm. a day.

On average per capita consumption of 'red' meat in Iraq is about 16 kg. <sup>(10)</sup> annually i.e. 44 gm. a day. Overall meat consumption (including poultry and fish) is about 19 kg. annually. <sup>(10)</sup> These figures are very low compared with some developed countries such as Australia and New Zealand where per capita consumption of meat exceeds 100 kg. per year. These two countries are amongst the world's leading animal producers.

In Baghdad, however, an average per capita consumption is about 34 kg. <sup>(10)</sup> annually i.e. 93 gm. a day, compared with the rest of Iraq where the intake is about 14 kg. annually i.e. 38 gm. a day. In Baghdad, therefore, per capita meat consumption is almost two and a half times that of the rest of Iraq. This is a reflection of the fact that per capita income in Baghdad is, on average, significantly higher than for the rest of the country, but is inevitably exaggerated since the illegal slaughter for local consumption of livestock in some villages or small towns is not included in the official figures for animals slaughtered. Animals slaughtered elsewhere than in abattoirs

are estimated at about 30% for sheep and goats, and 20% for cattle, buffalo and camels; the second, the larger animals' figure probably indicates the fact that they need the facilities which are available in abattoirs and also that the sheep and goats are the animals of the remoter areas.

Illegal slaughtering often includes pregnant animals and animals too young for slaughter. In addition there is an unfortunate loss of by-products which would be used in fodder concentrate and fertilizer. Some sick animals may also be slaughtered since no veterinary tests are carried out, with obvious risks for the consumers of such meat.

Table 5.2 Annual Average in the 1970's of the Numbers of animals slaughtered in Iraq (including an estimated figure for illegal slaughtering)

Type	Number (Thousands)	Carcass av. net weight (kg.)	Meat produce (tonnes)
Sheep	3,500	17	60,000
Goats	1,000	14	14,000
Cattle	400	150	60,000
Buffalo	30	250	7,500
Camels	25	280	7,000
Total	<u>4,955</u>		<u>148,500</u>

Source : Derived from Rahem, M.F. et al Livestock Marketing, Baghdad p.454, 455.

Butchered meat production varies enormously in different areas of the country reflecting population distribution and purchasing power, even though the overall distribution of animals is fairly widespread. The abattoirs of Baghdad, with 24% of Iraq's population (18) account

for about 45% <sup>(4)</sup> of all meat slaughtered in Iraq whilst at the other end of the scale D'hok, with a human population of 107,404, (0.9%) <sup>(4)</sup> slaughters only 0.5% <sup>(4)</sup> of the national figure.

All meat leaves the abattoir fresh and is sold on demand. There is no tradition of cold storage of locally produced meat although any remaining at the end of a day's trading may be kept cool for the following day's sale.

Whereas the marketing of live animals in Iraq is usually in the hands of 'middlemen', the butcher takes over once the animal has reached the abattoir. Generally he slaughters the animal himself, for which he pays a fee, then transfers the carcass to his shop for retail sale. The customer selects the piece required from the carcass on display, not as in Britain where meat generally is sold in pre-butchered 'joints'. Anyone purchasing a small amount of meat, say 1 kg. may be given poorer quality meat though the price will be the same as for the better cuts. There is thus a tendency for people to buy a quarter of the smaller animals - lamb or goat - at an overall price : such a system clearly benefits those able to buy larger pieces of meat.

Beef, however, is classified by the presence or absence of bone, the latter being more expensive, and is usually sold in 'joints'. Usually each butcher will have his own special customers who can choose the good pieces of meat. Others have to take the 'cheaper cuts' although the price will be the same. The butcher justifies this by saying that otherwise no-one would buy the poorer quality meat. If meat were to be cut and prepared in advance with differing prices, as in Britain, purchasers would be given a clearer choice which would be fairer, but there is nothing to oblige the butcher to do this and as he would then be unable to dispose of his low quality meat at the

same price as high quality, which is in fact illegal, the present system continues to operate. There is another method for meat marketing. This method is by Gobanchi who slaughter animals in large numbers, selling them to the butchers in the abattoir and thus earning some commission. Usually, the Gobanchi supplies his butcher-customers with slaughtered animals on credit. After the butcher has sold his meat in the shops he pays the Gobanchi.

For government establishments such as hospitals, there are contractors who buy meat from the Gobanchi. Similarly, restaurants and hotels generally purchase their needs directly from the Gobanchi.

However, marketing of meat produced by the public sector is on the whole restricted to official government facilities which often includes small local abattoirs. The carcasses are cooled in cooling stores and then are refrigerated prior to distribution by refrigerated trucks to official government outlets and authorised sellers. This sort of meat is supplied mainly to public sector establishments i.e. hospitals, in an attempt to solve the problem of a continuous flow of good quality meat which can be purchased at a reasonable price.

The quantity of meat produced by the Dairy Administration has been estimated at about 700 tonnes annually, from 7,500 bullocks, in addition to which there is the Sawera project which has a capacity to breed 9,000 bullocks and 50,000 lambs annually, producing about 800 tonnes of beef and 750 tonnes of lamb. <sup>(10)</sup> Overall annual production of red meat in the public sector is about 2,250 tonnes. <sup>(10)</sup> This constitutes just 1.5% of overall domestic production of red meat. <sup>(10)</sup>

The consumption of meat has become a major part of Iraqi eating habits, and has, as we have seen, increased considerably with the increase in per capita income. Most low-income families, where once they consumed meat occasionally, are now able to consume it daily.

This has increased the demand for meat, making for an imbalance in meat marketing in Iraq. As a result, therefore, the price of meat has increased considerably. It is higher, for instance, than in Britain which imports some of its meat from the same international sources - Australia and New Zealand. However, imported meat is sold only in the Government shops and is subsidized. Home produced meat actually cannot compete with this intervention price, and is more expensive though obviously fresher.

In spite of the large quantities of imported meat, there is still not enough to fill the gap between domestic production and national demand potential. With the price of meat subject to supply and demand, it is not therefore surprising that the price has increased considerably over the last 10 years, by about 400%. Another factor playing a role in increasing the price of meat is that the buying and selling of animals is under the control of middlemen who take a high commission, as well as controlling the price according to their own interest. In addition, the price of live animals is high in years of both good and bad rainfall. In a year of good rainfall, natural pasture will grow well and fodder will be more readily available. This will encourage breeders not to sell their animals too early since it will cost them less to fatten them. Therefore, the animal supply will be less, with a consequent high price for meat. On the other hand, in years of poor rainfall, breeders tend to sell their animals quickly because a lack of fodder will result in a raising of the cost of their maintenance. This means that more animals are sold in the market which are of low weight and therefore meat supply is again reduced and in consequence, high prices of meat will prevail.

Lack of control over the slaughtering of animals, both inside the slaughter house and outside it, results in poor per capita returns and

the slaughtering of female animals either pregnant or before they have passed their age of maximum fertility, and the slaughtering of animals which have not reached their maximum weight potential. These losses are estimated at about 50,000 tonnes annually. (10)

Because the domestic production of meat does not satisfy domestic demand, which is estimated at about 0.24 million tonnes, assuming a per capita consumption of about 16 kg. annually, the ideal level for per capita consumption of about 27 kg. annually (75 g. a day), giving domestic demand of about 0.40 million tonnes in 1985 cannot be achieved without a significant increase in imports. This needs considerable refrigerated storage facilities not only on the quayside but in transport vehicles and in retail outlets. The refrigeration storage capacity in 1984 was 16,800 tonnes, with a further 14,000 tonnes under construction, giving a total capacity of 30,800 tonnes. (11) These improvements in cold storage and refrigeration facilities in Iraq have made it easier to buy meat from abroad.

Indicative of these trends are the following details:

"A meat supply agreement was signed with Australian interests early in 1979 for the supply of 5,000 tonnes of beef and 7,000 tonnes of lamb." (12)

"A contract to purchase 30,000 tonnes of New Zealand lamb - more than twice the annual amount previously bought - was agreed for 1981." (13)

A.M.A. imported 38, 64, and 77 thousand tonnes of red meat in 1980, 81, 82 respectively. (11) The cost of meat imports was ID 26.7 million and ID 57.2 million in 1980 and 1981 respectively. (11) A contract with Brazil was signed in September 1984 to supply \$140 million worth of beef. (14) It would seem that, in the short term, the best way to meet the problem of high domestic meat prices which had reached

ID 3.50 per kg. in the shops by early 1985, would be, at least in the short term, to increase considerably the amount of meat imported. Government subsidies, low production price and direct marketing enable imported meat to be retailed at ID 1.15 per kg. This rise in imported meat would reduce the number of animals slaughtered, maintain animal numbers and encourage rearers to fatten their animals and do away with the need to slaughter animals before they reach their optimum weight. However, this would need increased marketing facilities, particularly refrigerated capacity, which is at present insufficient both in volume and distribution, and an increase in retail outlets with all the concomitant facilities.

In the long term, however, Iraq must improve every aspect of meat production and marketing so that the national demand can be more fully met by home production. Since the problem with meat production is not so much with the number of animals, but with yield per head, the best way to increase meat production is by increasing animal weight. For instance, the average sheep carcass weight in Iraq is 17 kg; in developed countries it is 25 kg; <sup>(10)</sup> the average cattle carcass weight in Iraq is 150 kg; in developed countries it is 350kg. <sup>(10)</sup> and the average goat carcass weight in Iraq is 14 kg; in developed countries it is 18 kg. Similarly buffalo weight could be increased from 250 kg. to 350 kg. and camels from 300 kg. to 400 kg. To achieve this end there must necessarily be an increase in the quality and quantity of available fodder at a fair price.

Marketing facilities for home produced animals also need up-grading and, in particular, an investigation is needed into the possibilities of providing food and water for unsold animals, which could then be sold at a

good price at a later market. Further development of contract marketing is particularly relevant to producers in the hinterland of urban communities.

### 5.6 Dairy Product Marketing

Milk is one of the most important foods since it is the main supplier of calcium, necessary for bones and teeth, and a main source of protein plus some very important vitamins such as B and D, as well as being easy to consume and digest. This makes milk an important food particularly for children.

Marketing of milk faces three fundamental difficulties : milk is perishable, production is seasonal and milk production and consumption have relatively little geographical coincidence. On top of these, milk marketing in Iraq suffers from a deficit in supply because domestic production is low relative to demand. In 1974, milk production in Iraq was estimated at 332,000 tonnes.<sup>(1)</sup> FAO estimates put sheep and goat milk production at 189,000 tonnes in 1979, with a cheese and butter total of 34,000 tonnes.<sup>(15)</sup> By 1981, more than 19 million head of various livestock produced an estimated total of about 0.5 million tonnes of milk annually. If one regards a daily milk consumption of 300 g. ( $\frac{1}{2}$  pt) as desirable, then 15 million people would consume 1.7 million tonnes annually if this could be achieved. The difference between fresh production and this ideal is about 1.2 million tonnes.

However, in Iraq most milk consumed is imported as dried or condensed since the quality of 'fresh' milk cannot be guaranteed. Import costs reach about ID 1 million annually.<sup>(1)</sup> Production of milk in Iraq is low because the average yield per head is low for domestic animals. For example, an average yield per domestic cow is about 750 kg. annually. However, under optimum conditions with better quality feeding and husbandry this could reach 1000 kg. annually.<sup>(1)</sup> Another example of this are the average yields for buffalo, which range

from 3 kg. per day in Missan to over 15 kg. per day in Baghdad district. <sup>(1)</sup> By comparison a Freisian cow in developed countries produces about 2,800 kg. <sup>(1)</sup> of milk in a year. The low domestic production is a consequence of poor fodder, inadequate environmental conditions particularly climate, and poor husbandry. The low productive capacity of the improved native species is another factor. For cows the age for a first pregnancy is not less than 3 years using traditional husbandry but may be reached in just 2 years in dairy herds under optimum conditions.

#### Methods for the distribution and sale of milk and its by-products

Milk and its by-products are sold through four channels.

##### 1. Direct selling from producer to consumer

Since milk in warm climates is highly perishable only those producers living close to urban areas are able to sell their milk as a fresh commodity. Those farming at some distance from the consumer tend to convert their milk into yogurt which, since the lactic acid acts as a preservative, has a longer 'shelf-life'. Farmers from further afield turn their milk into cheese, while the nomads living in areas remote from urban population convert their milk, usually from sheep, into a traditional 'butter-fat' product (the milk is first churned, the resultant butter is creamed off and is then heated and skimmed : the remaining product can then be kept for many weeks). Nomads are obliged to follow this method since transport facilities are almost non-existent. To enable the nomads to reach the consumer more readily to utilize the vast quantities of milk produced in the spring in remote areas requires not only considerable integration of mobile production into an essentially state network of distribution, but also good roads and cooling tankers, facilities and incentives which only the Government is capable of providing.

## 2. The use by producers of grocers as middlemen

Some producers have neither time nor inclination to sell directly to consumers in the markets. Therefore, they deliver to a grocer who sells it to the consumer. He has some facilities, such as a fridge to keep yogurt and other products in good condition if unsold the same day. The producer on the other hand has to sell his products early the same day as he has no storage facilities. The price of yogurt in consequence is very often much cheaper in the afternoon than in the morning. Yogurt is a highly popular form of milk consumption since its freshness is guaranteed for considerably longer than milk and thus its successful marketing is vital. In the private sector over 80% of milk production is converted to yogurt.

## 3. Use of central depots

There are depots for milk in most established dairy farming areas. The function of these centres is to collect milk from producers and to provide hygiene and nutrition tests such as bacteriology tests and tests for fat content. Some milk is refused on the basis of the hygiene quality tests. Prices are determined on the basis of hygiene quality and fat content (see Table 5.3). The government controls milk prices which are fixed each year. It will remain constant throughout that year even though production is seasonal. The advantage of this is that producers receive a good return in the period of high production when supply is increased, but the corollary is that, as price remains constant when milk supply become less, their income drops. Therefore, some producers tend to sell their milk, and its products such as cream, privately regardless of their agreement with the Dairy Administration.

Table 5.3. Fresh milk prices paid to producers in 1977 (IF/kg.)

Fat %	Grade A	Grade B	Grade C
3.0	70	67	60
3.5	72	69	62
4.0	75	72	65
4.5	77	74	67
5.0	80	77	70
5.5	82	79	72
6.0	85	82	75
6.5	87	84	77
7.0	92	90	83
7.5	94	92	85
8.0	96	94	87
8.5	98	96	89
9.0	100	98	90

Source : Ajill, J.H. et al.(1979) Style of Co-operative Marketing in Iraq and the state of general Co-operative Union, Baghdad,p.207.

#### 4. Collection centres for receiving milk from co-operatives

This method was started in Baghdad in 1969, when the quantity of milk marketed using this method was 360 tonnes. <sup>(16)</sup> This had increased to 12,337 tonnes by 1978.<sup>(16)</sup> This method was expanded to encompass other counties as a result of the success of the Baghdad scheme. Because it made facilities such as large containers available to producers and because of the ease of buying milk compared with individual marketing the cost of marketing milk was reduced. It is thus a clear example of what can be achieved by more efficient marketing and control methods. The method followed is that the producers' co-operative specifies to the Dairy Factory (D.F.) the daily volume of milk it is able to supply. The D.F. then provides the co-operative with the appropriate number of churns which are distributed to the producers and subsequently collected when filled and transported back to the collecting centre where the milk is analysed. It is then transported to the D.F. by cooling tankers, where it is pasteurized, bottled, cooled and from where it is distributed daily. At this stage milk from both cows and buffalo will be mixed together after the fat conversion of the latter. The fat content of the former is 4.5% and the latter from 6% to 10% and this is extracted to make butter and cream. Because of this high fat content and a greater yield per animal the D.F. prefers buffalo milk and over the years has become involved in efforts to improve the supply by persuading producers, by financial loans to move nearer to the factories and by providing them with concentrated fodder, generally on a barter basis.

Financial arrangements are carried out by one representative member and are based on quantity, grade and fat percentage of the milk supplied, the individual farmer receiving a certificate of analysis.

This level of co-operation by neighbouring producers is an improvement on the traditional individual method as it saves both money and manpower.

There are (1984) 41 depots in Iraq for collecting fresh milk from producers both private and co-operative. These depots exist in the areas close to the Dairy Factories located in big cities and can thus provide them with a constant supply of fresh milk. Because of the security this constant supply guarantees the quantity of milk marketed through the Public Sector (which increased from 23,000 tonnes in 1970 to 61,000 tonnes in 1977).<sup>(16)</sup> The benefits include less deterioration in milk quality because of rapid selling, assurance of total milk sales with fixed prices, even in the high productivity season and the availability of larger containers.

The peculiar problems of milk distribution can be seen by detailed reference to Baghdad. In the capital, a clear weekly timetable for distribution services operates. Each part of the city has one day a week for milk deliveries. This is because the capacity for supplying milk is limited both by the volume of production and the transportation system from the factory. Consumers are obliged to purchase their weekly needs in milk and dairy products. There is no problem about dairy products such as butter and cheese, since they last longer than milk, but for milk the system is inadequate, since milk is more perishable. It is unhealthy to keep fresh milk for more than one day out of the fridge or about 3 days in the fridge. Serious problems arise in the summer in particular when the demand for milk drops because of the inability to guarantee its freshness. Therefore, the milk stays in the shops for longer than the period advised. A development of the transport infrastructure could enable summer surpluses to be more widely available.

Milk is not labelled with a recommended expiry date for safe consumption. People, not surprisingly are reluctant to buy "fresh" milk. It would be better at least to put an advised expiry date on the containers to solve this problem in fresh milk consumption and better still to provide for a finer network of frequent distribution. But some people tend to boil the fresh milk to kill the germs and so eliminate doubt about bacteria in the milk and where possible people keep it in the fridge to prolong its safe life. Certainly these methods are the most hygienic for consuming fresh milk. Given these uncertainties most people prefer to consume dry milk or condensed milk, all of which is imported, since there is less risk, despite the fact that such treated forms of milk are less useful for the human body due to the loss of some vitamins during heating. Iraq imports huge quantities of dried milk and milk products such as cheese, to the value of about ID 1.0 million per annum.

#### 5.7 The Marketing of Non-Comestible Livestock By-products

Non-food livestock by-products such as skins (hides), offal, wool, and bones are a major source of national income coming third in Iraq's export commodities after oil and dates. In 1973, for example, the value reached ID4.8 million of which 7.8% was skins; 6.9% wool, 3.2% offal, or a total of 18% <sup>(4)</sup> of all exported commodities excluding oil. In addition raw materials such as wool and leather are valuable on the domestic market for local industries.

Much of the trade in these by-products is in the hands of a small monopoly employing few middlemen and this is particularly so with regard to sheep and goat skins.

### 5.7.1 The marketing of skins

There are two categories of skin a) large, i.e. camel, buffalo, cattle and b) small, i.e. sheep and goats. Average annual production of large skins is over 400,000, <sup>(4)</sup> generally used on the home market, whilst 4,000,000 <sup>(4)</sup> smaller skins are almost exclusively for export.

Marketing is operated through two channels - the public sector represented by the Leather Company and the private sector where numerous tanners operate on a small scale.

The Leather Company, a government body, has a total monopoly of the Baghdad abattoir in respect of cattle and buffalo. Camel skins are still marketed by the private sector. In other cities the Leather Company, through official committees, must compete with the private sector. Since the basic aim is obviously to satisfy the overall need for leather, when the Baghdad abattoir cannot supply sufficient skins, the Leather Company has first call on the stocks in all other abattoirs. No private middlemen intervention is permitted in these transactions.

However, outside the Baghdad abattoir a different system prevails. Skins from regional abattoirs are bought by merchants who take them to tanneries in Mosul and Baghdad and from there to indoor markets where they are sold at weekly markets to cobblers and saddlers. The merchants involved make their own scale of charges but must pay a due to the market-owner of 5-6% <sup>(4)</sup> on his retail price. In Baghdad and Mosul there are over 60 tanneries. <sup>(4)</sup> These vary in size and scope from five large companies following modern techniques, to twelve less modernized tanneries and over 50 small concerns operating on old established tanning patterns. Because of this restricted siting of tanneries, most leather goods are sold in Baghdad and Mosul, with a handful in Najaf.

### 5.7.2 Offal marketing

The intestines of the larger animals are used domestically in sausages while those from small animals are exported after cleaning according to the varied needs of the importing countries.

All trade is through private merchants who prepare them for export. In 1963 2.0 million animals were involved at a value of ID 0.3 m. which by 1973 had risen to 3.3 m.<sup>(4)</sup> with a value of more than ID 1.0 m.<sup>(4)</sup> The export markets include America, Japan, Lebanon and many European countries.

### 5.7.3 Wool marketing

Generally speaking the marketing of wool in Iraq, whether for weaving mills or carpet making is relatively efficient. In the past marketing was entirely in the hands of private enterprise represented by middlemen and wool merchants whose only criterion was quantity, no consideration being made for cleanliness or other aspects of quality. This did not give producers any incentive to improve the quality of their wool, since all qualities of wool sold at roughly the same price using similar methods. Wool has long been used in domestic and traditional weaving but was relatively insignificant as a traded item, the internal demand for wool being relatively low. This allowed merchants to control wool prices according to their own interests. In particular, huge quantities of wool were sold illegally across the unsupervised international borders, since in Iraq's neighbours' economies, there was great demand for wool suitable for making carpets, ultimately to be sold as a high quality item in many other parts of the world. This illegal trade in wool generally involved high quality wool since, being underpriced, it was in high demand, particularly by the renowned Persian carpet industry, with the consequence that the domestic market, such as it was, was left with an inferior raw material.

With the setting-up in the late 1950's of a modern textile industry in Iraq, the demand for wool, particularly of high quality, has been stimulated. In order to make sufficient wool available for the textile factories it has been necessary not only to stimulate production but also to control the process of wool marketing. These factories need a regular supply of good quality wool which, without such innovations, it would not always have been easy to obtain since the private entrepreneurs were unwilling or unable to enter into binding agreements.

In the 1970's, therefore, a co-operative system for marketing wool was started, which runs alongside the private sector. The role of co-operative wool marketing in organizing the supply of, and demand for, wool is to ensure a good price for producers on the one hand and to make wool readily available for the national textile industry on the other. Moreover, through this involvement it can influence the quality of wool, by encouraging producers to clean their wool and classify it in order to guarantee a supply of high quality wool to those factories. The method employed is by a system of bonuses for clean wool and deductions for the unclean wool, according to the standard achieved.

There are three kinds of wool in Iraq based on the breed of sheep: Arabi, from the southern part of the country which is a short, very soft strand; Awasi, from the central part, which is less soft than Arabi but has a longer thread and Karadi from the northern part which has the longest strand but is very rough.

All these wool types fall into three categories for marketing:-

- 1) High quality wool, produced from shearing sheep. This is in high demand by the state mills which now monopolize the purchase of the entire production of the country. Each sheep produces from 1.25 kg. to 2.5 kg. of wool and about 70%<sup>(4)</sup> of the total

sheep population is suitable for shearing each year.

- 2) 'Fallen' wool not attached to the sheared fleece, which is nevertheless collected after shearing and is sold to state mills.
- 3) The poorest quality of wool is produced when sheep skins are prepared for sale. The wool residue is collected and sold, 90% going for export and 10% <sup>(4)</sup> for local industries. The exporting and marketing of this kind of wool is done mostly by the preparers themselves or by specialised wool merchants.

However, although Iraq produces from 12,000 tonnes to 15,000 tonnes of wool annually, because of increasing national demand the exporting of high quality wool has been stopped and some particular varieties are now imported. <sup>(4)</sup>

Following the introduction of co-operative marketing the quantity of wool marketed by the new method increased rapidly after a slow start - 130 tonnes in 1972, <sup>(16)</sup> rising to almost 8,000 tonne by 1976 in which year all wool, by law, began to be marketed through the G.U.C. The price per tonne had risen dramatically from ID 416 in 1969 to ID 1000 in 1974 <sup>(16)</sup> the last year when all qualities of wool fetched the same price and the cross-border trade was at its highest. This unrealistic price was introduced in an attempt to cut down the cross-border trade and encourage merchants to sell to national mills. In 1975 the purchasing system was changed radically. Wool was now classified into the three major categories with Arabi wool fetching ID 800 per tonne and Awasi and Karadi ID 700 per tonne, and in 1976 it was made an offence to export the raw product.

Wool was now available, as never before, in considerable quantities on the home market e.g. 9,580 tonnes were being processed by 1978 compared with 2,134 tonnes in 1974 and the government was able to

encourage producers to take more care in the production of fleeces by improving the bonus for wool delivered in a good, clean condition.

In 1975 the bonus was ID 10 for 80% purity and it rose from ID 15 to ID 20 for 85% purity.

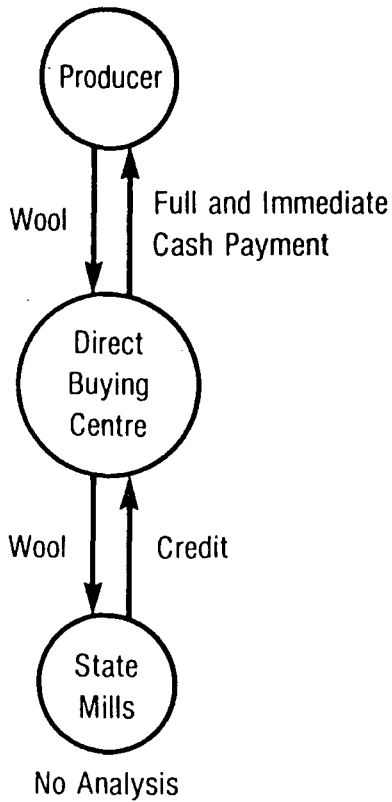
The decision in 1976 to do away completely with speculation by guaranteeing supplies to the state textile factories reduced the involvement of merchants considerably and contributed to the increase in the quantity of wool marketed.

This development in wool marketing through the G.U.C. required some new facilities to be available to streamline the process of marketing of wool. Therefore, four marketing centres were established by 1978 in Baghdad, Nineveh, Ta'meem and Thi-Qar. The measures taken to stop the cross-border trade in wool was not fully effective since the Bedouin seldom recognize national boundaries so in 1978 the government established a Direct Buying Centre in Bsaya on the border at which the full cash price was paid immediately with no delay in connection with such checks as quality analysis. This encouraged the nomadic sheep breeders to sell their wool in this centre since, with a minimum of official involvement and few formalities, higher prices than was formerly possible when using unofficial channels and local merchants could be obtained.

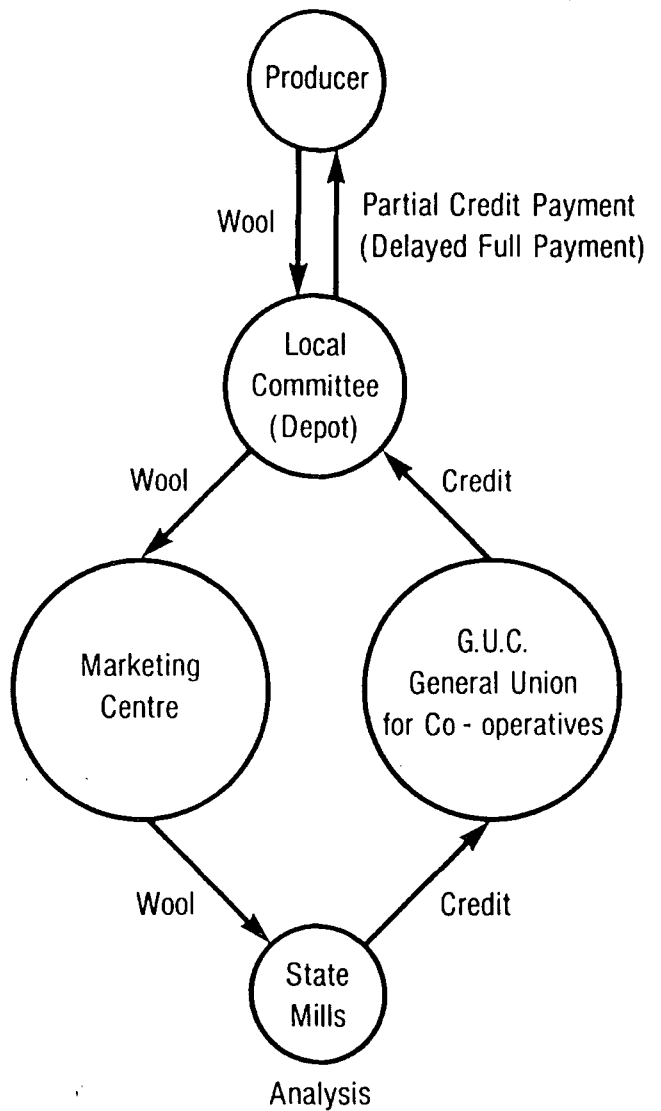
Wool is currently marketed within one of two systems, which can be termed Short Chain and Long Chain. These are represented in Fig. 5.1.

Fig. 5.1 WOOL MARKETING SYSTEM

Short Chain (Direct Payment)



Long Chain (Payment after 15 days)



The advantage of the 'Short chain' is that the producer receives his payment immediately : it is thus particularly appealing to nomadic producers, though both producer and purchaser may receive unrealistic prices since the wool is not analysed prior to price settlement.

The 'Long chain' has the advantage of accurate analysis which results in a more equitable financial settlement but the disadvantage to the producer of the 15 days wait before payment is made. The whole

process is seasonal and takes place between April 1st and October 31st.

The main features of the 'Long chain' are:-

- 1) Wool marketing is restricted to the Co-operative Union which markets wool for the state mills (public sector).
- 2) Co-operative members, by marketing their wool through their institution, aim to prevent intervention by the middlemen who had previously encouraged producers by paying them an immediate, though lower cash price.
- 3) Committees, comprising the Director of Co-operation as chairman, plus a representative of the Co-operative Union, the Head of Co-operative Marketing and a member of the Finance Department have been established.

They are responsible, through the Agricultural Bank for all financial transactions involving the Co-operative Union and for all weighing and analysing, making all transport arrangements, organizing the whole packaging aspect and instituting follow-up procedures to deal with any problems arising, particularly with regard to disputes over sample analysis.

The financial aspect of the whole process involves arrangements between mills and the G.U.C. whereby the latter is supplied with all relevant statistics - wool analysis, purity percentages, sacks required etc. and is credited with an appropriate amount of cash to pay suppliers with an annual financial adjustment at the end of the season. Also, the county committee can designate and establish local depots for the collection of wool received from co-operatives according to the amount of wool available in any given area. From these depots the wool is transferred to the permanent marketing centres. These wool marketing centres must maintain records of the quantities of wool coming in, of returns by individuals, sacks required etc. in addition to their

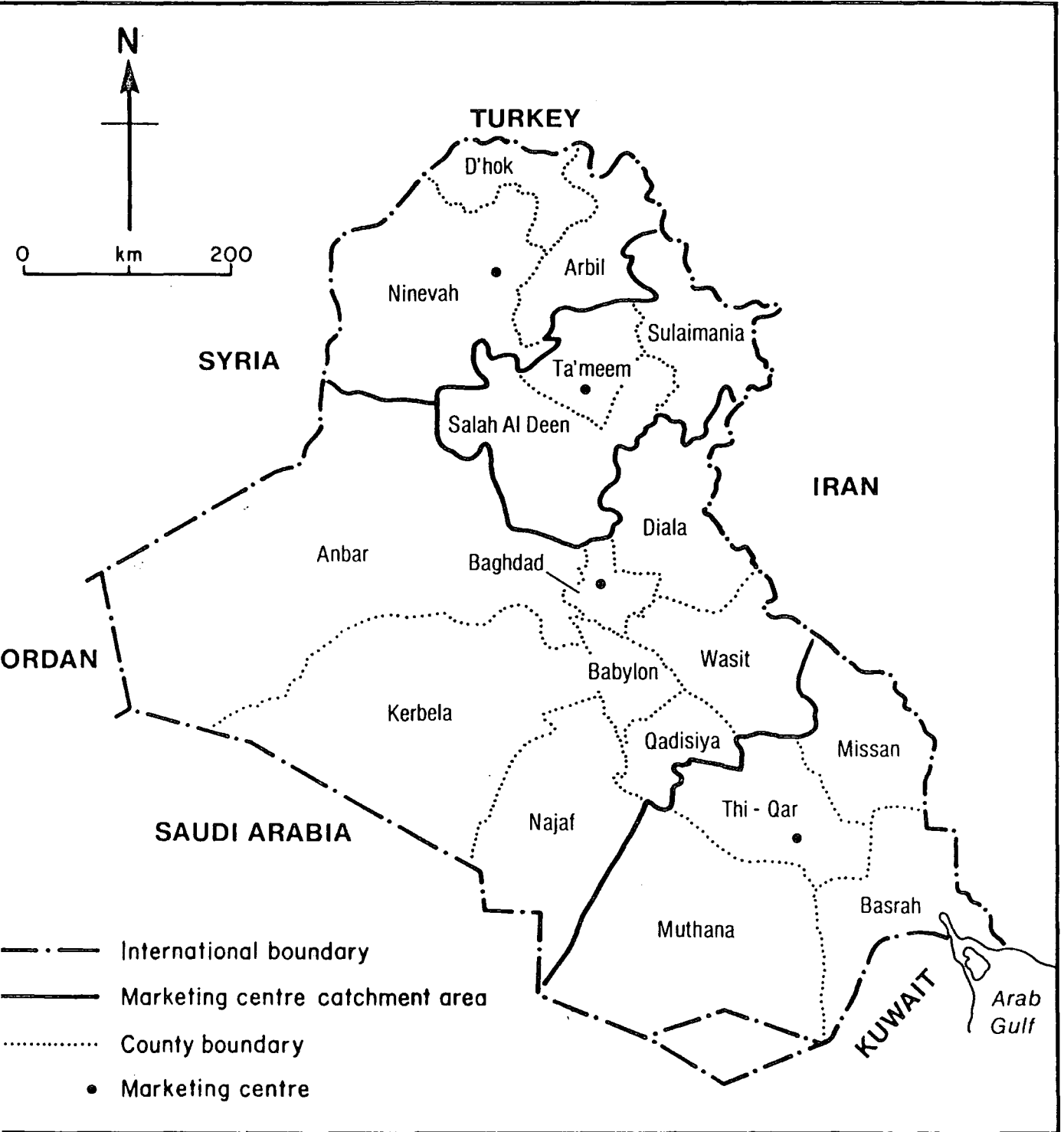
fundamental task of collecting and distributing wool.

4) Local committees also exist in each co-operative under the supervision of a government overseer. Their duties comprise:-

- a) the checking of wool cleanliness to ensure that only wool of an acceptable quality is received.
- b) encouraging marketing members to clean their wool in order to benefit from the bonuses.
- c) preventing the buying of dirty wool as the local committee would be responsible for the value of any unacceptable wool.
- d) making lists of the names of suppliers and quantities supplied.
- e) paying no more than 50% of the price as a credit for producers until the settlement of the final price after analysis.
- f) separating clean wool from unclean in order to market each type separately.
- g) separating wool according to its colour.
- h) separating wool according to variety (Arabi, Awasi, Karadi).
- i) collecting large quantities of wool prior to transfer in bulk, in order to streamline transport, weighing and analysing procedures.

5) The wool is transferred from the counties to the four marketing centres and then to the National weaving and spinning, and wool weaving factories as follows:

5.2 THE FOUR MARKETING AREAS FOR WOOL



All in all the woollen trade has now been designed to a fairly satisfactory level though there is still room for improvement in the area of wool cleanliness where more careful attention could be paid to the practical aspects of fleece condition for instance a clean and hygienic environment in which to conduct the shearing, shearing in dry weather, good storage facilities and even pasture 'weeding' to

eradicate burr bearing plants which entangle the fleece.

Perhaps a slimming down of the stages involved between farmer and mill with a consequent financial benefit might help the economy. An increase in the number of sheep reared might one day enable Iraq once more to supply the neighbouring countries with fine quality wool.

### 5.8 Poultry Marketing

Poultry are kept both in rural and urban areas for their flesh and eggs. Previously there was virtual self-sufficiency in poultry and eggs in spite of the low production of both meat and eggs. Most families kept some poultry, usually on left-over food, for their own needs. Some farmers sold live poultry in the urban market. Chicken meat was considered a luxury meat, and was more expensive than red meats. In the rural areas consumption of chicken was often restricted to the sick, particularly those needing easily digestible foods. In addition, a farmer would kill his fowls if he was aware that some disease was spreading rapidly in neighbouring areas. These birds would then be consumed at home. As a consequence poultry marketing was ill-developed and limited to the selling of a few live poultry in nearby towns and villages. Some farmers would take their poultry and eggs from nearby villages to cities and towns to sell them directly to the urban consumers in their homes. In general, people looked down on those who bred and sold poultry as having a lowly position in society. Poultry production was seen as neither 'honest farming' nor an innovative, industrialised section of modern agriculture. In short, the poultry market was stagnant.

Nevertheless, because of the enormous increase in the demand for eggs and chickens which began in the 1970's and because of the short period required for fattening chickens, the full cycle from hatching to being ready for market being just under 50 days, many poultry rearing

schemes have been built up recently, using a newly introduced high production and rapidly maturing species of chicken.

The other major factor motivating this sort of rearing is that credit is available from the Agricultural Bank with low interest rates of just 1% for collective farms, 2% for co-operative associations, and 3% for private breeders. Consequently, by 1978, according to Rahem, commercial broiler production per year had reached 13.5 million. The breakdown of their type, and location of production is shown in Table 5.4.

Table 5.4 : Commercial Broiler Production, 1978 (after Rahem) in millions

Private Schemes		Public Schemes	
Baghdad area	Rest of Iraq	State Poultry Co.	Others
5.5	3.5	3.7	0.8
9.0		4.5	
Overall Total 13.5 million broilers			

Source : Rahem, M.F. et al (1978) op.cit.

Most broiler production is concentrated around Baghdad where a high demand exists. Often these schemes are built by urban dwellers, as a secondary source of income, to exploit the high demand and quick profit potential of this industry. The market, therefore, plays a major role in encouraging producers in this industry. The price, however, is controlled by the government.

Most domestic broiler production is consumed in 'chicken barbecue' restaurants, since restaurants, unlike private individuals, are prevented by government order from purchasing frozen imported chickens. The owners have therefore agreed upon schemes for a constant regular large supply through private suppliers whose commission is between IF50-IF150 per 1 kg. according to the market condition of supply and demand, being

lower when huge frozen quantities are available. This is the essence of the marketing process for both the producer and the restaurant owner.

Most of the retail national demand for chicken has been satisfied by imported frozen chickens. Consumers prefer frozen imported chickens because of better quality and good freezing and packaging. As late as 1979, however, official Iraqi imports of frozen chickens were 423 tonnes, plus 98 tonnes of frozen turkeys. This figure rose dramatically in 1980 partly due to a number of government overseas agreements coming to fruition at the same time to 71,759 tonnes of frozen chickens with a value of ID 31.14 million and again to 141,125 tonnes with a value of ID 65.62 million in 1981. The war with Iran was partially responsible for the figure dropping to 101,000 tonnes in 1982.<sup>(11)</sup> All these quantities were imported and marketed through the public sector, the major suppliers being Brazil, U.S.A. and some, particularly East, European countries. A contract with Brazil was signed in September 1984 to supply consignments worth \$150 million of frozen chickens.<sup>(14)</sup>

The demand for chicken is now very high because its price is lower than red meat since the government instituted a controlled price structure for chicken in the early 1970's : there is no comparable scheme for red meat. The fixed 1985 price for chicken (domestic and imported) is ID 1.3 per kg. compared with red domestic meat which is ID 3.5 per kg. Even so the total quantity marketed both from domestic production and from imports is less than domestic demand.

There is, therefore, a high potential for further broiler production but this could have the effect of lowering egg production since the production cycle of broilers is only 47 days whereas with eggs it is 22 weeks before there is a financial return. Farmers, therefore, cannot be persuaded to produce eggs even though the state has encouraged private

producers by giving 100% credit for setting-up egg production units.

The income from broiler rearing is higher than egg production particularly since the fodder cost differs considerably for each of them. Each broiler needs 3.5 kg. of fodder over 46 days costing about ID 0.46, while laying hens need more than 60 kg. over about 1½ years, costing about ID 7.8. The profit from 1,000 broilers is about ID 750, assuming 4 batches in the year, while the profit from 1,000 laying hens is about ID 280 per year assuming 280 eggs per hen, each egg giving a profit of about IF1. The profit from broilers, therefore, is about two and a half times that from eggs. In addition to the fodder cost there is the cost and effort involved in maintaining the even temperatures essential for the birds' well-being.

In 1976 when the country was already producing some 190 million eggs per year, the government introduced 10 new projects for egg production. The new schemes added a further 700 million eggs to the annual production. In 1979 a further 4 state enterprises were established at Hila, Kofa, Sowera, and Karkok each one having an annual capacity of 100 million eggs.

Nutrition experts differ on the number of eggs per week a person should consume bearing in mind the suspected correlation between high cholesterol level and heart disease. However, if with a population of 15 million, each person in Iraq were to consume one egg every two days, the number of eggs needed would be 2,737 million eggs in 1985. The gap between supply and potential demand is obvious when it is realized that domestic egg production in 1981 was about 955 million<sup>(17)</sup> giving, in theory, every Iraqi an egg once a week.

The number of eggs marketed in 1980, 81, and 82 were 1,491 million, 1,554 million and 1,793 million, of which 53%, 45% and 41% respectively were home produced, the remainder being imported.<sup>(11)</sup> The steadily

increasing short fall, now over 50%, which these figures reveal shows that there is considerable scope for domestic expansion in this industry.

The demand for eggs varies from season to season, being lowest in the summer since eggs are readily affected by the high temperature. Only in this season do demand and supply roughly coincide. At other times, particularly in winter, there is a huge deficit. Further efforts must thus be made to increase the supply wherever possible. While for imported eggs it would be ideal to increase imports in the winter only when demand increases, it would seem that the conditions laid down by suppliers insist that there be a regular flow throughout the year.

What is needed is to regulate egg production so that there is more in winter than in summer. One possible way to deal with this problem would be for the government to demand that producers adjust the maximum production period to coincide with the maximum winter demand. Starting in February a batch of one day old chickens would begin to lay at 6 months and within 3 months would reach maximum production, which would coincide with the maximum winter demand. The period of high production lasts for 4 months which covers the period of high demand, November - February. After this, production gradually decreases until the bird is 18 months old. After this the process becomes uneconomical, as the cost of raising will be higher than the profit margin from the eggs. Therefore, it is better to sell these hens as meat, though the meat is less tender than for young birds. If this cycle is repeated annually it would ensure a continuous supply throughout the year peaking in the winter when demand is at its highest.

The distribution system for eggs and chickens is inadequate. There is a lack of both vehicles and drivers and a paucity of technical back-up and insufficient cooling and refrigerated storage facilities. This means

that grocers themselves usually have to collect the eggs and chickens from the wholesaler which adds to the cost and thus reduces the profit margin from them since the prices for eggs and chickens are fixed by the government. In consequence some grocers refuse to deal in these two commodities, since the profit margin is so low. There is also, because of the uncertainties of supply, extra trouble involved in selling them, since people crowd the shops when these commodities arrive and grocers do not sell any other of their stock during this period. They also resent the time spent collecting these commodities from stores where the situation can be equally difficult.

Distribution is weekly if the goods are available, so in winter the best the consumer can hope for is to find eggs and chickens on one day a week and only for a very short time. The demand always exceeds supply and each purchaser is limited to perhaps 30 eggs and 2 or 3 chickens each time. Some of these problems might be solved if the State Organization for Agricultural Marketing ( A.M.A.) were to be made responsible for the distribution of these commodities regularly throughout their area. Some parts of the cities do not receive any eggs and chickens at all which means that people have to search in other areas. This obviously increases the number of purchasers in these parts and compounds the problems for the retailer. Understandably, many consumers purchase more than their immediate needs because they are not sure of finding further supplies at a later date. They may even search in more than one shop, whilst in other shops grocers let some of their favoured customers buy more than the numbers allowed, or will keep eggs for them. Thus, such deficiencies in the supply system, by generating uncertainty contribute to localised artificial levels of demand and add to, rather than reducing, the problem of equating supply with actual needs. This chaotic situation needs firm and nationwide re-organization. Not least, a national rationing system would make supplies more widely available.

In some parts of Baghdad, Peoples Bureaux exist which arrange lists of families and their sizes in that area, which are distributed to the grocers and only people on the list can purchase eggs from that grocer. This method has partially solved the problem of panic queuing and buying since each family is assured of its quota of supply and it is not necessary to purchase on the same day of distribution. "In an attempt to improve supplies of meat and eggs to consumers, at least 100 shops or agents in Baghdad have been licensed to sell the goods,"<sup>(20)</sup> (Agriculture and Agrarian Reform Ministry Undersecretary Thamer Said Sulaiman (MEED 12.8.83 page 24). "If the experiment succeeds in Baghdad, it will be extended to other governorates. Licences obtained through the State Organization for Agricultural Marketing (A.M.A.) guarantee weekly supplies of 25 tonnes of meat and eggs." <sup>(20)</sup>

Inadequate marketing of eggs is therefore not only the consequence but also the partial cause of low supply and high demand. The fact that 20% of national production is in family concerns for local/private use mostly in rural areas shows that, despite recent changes in production methods, there is still much scope for the efficient commercialisation of this sector. To improve the system it is obviously necessary to increase supply. In the short term the short-fall could be met by importing more eggs, while in the long-term, there is a need to increase production considerably. In both situations cool storage facilities have to be established allied to good transportation. This would enable the marketing system to re-organize its distribution of good quality eggs both in terms of areas covered and in year-round availability.

To satisfy this urgent need for year-round production every possible method must be investigated. An increase in public sector production is possible by a) making existing projects produce to their maximum capacity; b) introducing large state schemes, especially in the northern part of the

country where the climate is actually more suitable for this industry because of lower cooling costs in the summer since the summer season is shorter than in the south; c) encouraging private producers by raising their profit margins by perhaps subsidising fodder; d) making fodder more readily available and e) the introduction of mixed schemes which depend on state finance allied to private incentives within which the state finances the establishing of suitable schemes and rents them to private individuals who pay the rent from the proceeds of the ultimate marketing of the eggs or chickens. Finally the government could even try to encourage greater home production since most families are capable of raising a few hens in their own garden for their own needs.

If all these schemes were implemented they would make a major contribution to meeting the short fall in the supply of eggs and major improvements in the distribution procedures would be likely. An unnecessary item in Iraq's import bill would thus be curtailed.

### 5.9 Fish Marketing

Freshly-caught fish are one of the most rapidly deteriorating of foodstuffs and therefore their transfer from producer to consumer presents particular problems. The two main requirements are refrigerated storage and modes of transportation but the use of refrigeration in any form inevitably increases the cost of fish marketing. However, refrigeration is essential in order to keep fish in good condition as transfers can take a long time, given that fishing areas have relatively little geographical coincidence with consumption centres.

There are two main sources for fishing, marine and the inland freshwater area comprising marshlands, rivers and lakes plus, recently, to a small extent, fish farms. According to FAO data the total

1980 fish catch (including the inland water catch) was estimated at 53,450 tonnes compared to 55,330 tonnes in 1979 and 27,200 tonnes in 1971. (13) Most 'salt water' fish is caught by vessels of the Iraqi Fish Company (public sector) all of which used Basrah as their home port and all of which have freezing facilities for dealing with the fish as soon as it is caught. In addition, 5 thousand tonnes of salt water fish were caught in an average year by private individuals. (19)

In contrast to salt water fish, the fresh water sector is exclusively private : the amount of freshwater fish caught and sold in local markets was some 14 to 16 thousand tonnes annually over the last decade. (19)

Marketing of fish takes place through two channels, private and public sectors. In the private sector there are two methods for marketing freshwater fish : alive and cooled. Live fish marketing takes place mainly in Baghdad for the fish caught from the nearby freshwater lakes of Habbaniya and Tharthar, and the Tigris river. These fish are transferred alive in open tankers filled with water to Baghdad for live display by individual retailers in the open air on the banks of the Tigris. The price for this sort of fish is rather high as consumers purchase what they select without weighing. Very often the consumer will eat this sort of fish gutted and barbecued on the spot, when it is called Mazgoof. This sort of fish marketing constitutes a very small proportion of the fishing industry but it is characterised by both high quality and high price and is therefore popular with those sectors of the urban area able to afford the best. A further reason for the high price is because of the high cost of transportation since it must be speedy and is heavy because of the need to carry the fish in water tanks. The species of freshwater fish caught include : *barbus grypus*, *barbus xanthopterus*, *barbus esocinus* and *barbus sharpeyi*.

Cooled fish marketing particularly involves fishing in the marshes. There are numbers of middlemen (merchant assistants) who buy the fish from the marsh fishermen and store them on site in traditional huts using some crushed ice. After collecting a commercial quantity, the catch is transferred by boat to the nearest place where merchants' vehicles can arrive to take it to the wholesale market of Basrah, Amara, Naseria and Baghdad. In these markets fish merchants sell their fish through dealers to the retailers. The method followed is that of piling the fish on the floor without particular regard to quality, size or type of fish in about 100 kg. piles, the retailers having to bid for the quantity they require in whole pile units. The period between fishing and selling to retailers takes at least 2 days dependent upon the distance involved. This obviously can affect the fish quality where long distances are involved, the spoil proportion is high. Most spoiling takes place within the period between fishing and wholesale distribution because of insufficient cooling facilities and slow transportation. Thus the price and quality of fish varies considerably from place to place. It is higher in the high and medium income areas than in the poorer areas. In the former retailers usually have freezers and are more thorough in washing and cleaning fish. Moreover, the retailer buys better quality fish which sells well in his area. In the latter areas most fish retailing takes place around the houses using a barrow. Occasionally it is sold in the markets straight from the ground, in which cases it is low both in quality and price.

Usually the price paid to fishermen is low with wholesale prices in the market being about twice the price paid to fishermen, a factor which covers the cost of collection, cooling and transportation. Similarly retailers add about half or more onto their wholesale price because of their overheads etc, thus leaving a variable profit, depending

upon the fish quality and the area they work in but one which, in any event, usually exceeds the profits for the fisherman. Therefore, the price paid by the consumer is about three times the price paid to the fisherman. Despite insufficient marketing facilities, the cost of fish marketing is high, in part justifiably so, to compensate for high wastage rates, but most of this profit goes to the middlemen. No option deal exists for a fisherman to sell his fish elsewhere, therefore, the price he receives is fairly constant and low. This is particularly true in the marshy areas of the southern part of Iraq where fishing is a major source of income. Merchants often give credit to their suppliers in cash or commodities thus binding the fishermen to selling through them. The government, by such schemes as the development of private fishermen's co-operatives, has attempted to overcome this problem.

In an attempt to increase the fishermen's profit and decrease the fish price to consumers while delivering good quality fish co-operative associations have been established in the areas where fishing is practised on a wide scale. Members can sell their fish at a fair price through co-operatives to AMA which in turn sells it to consumers at a constant official price. Through this system fish marketing can be better controlled. This will help to eradicate illegal catching techniques such as the use of poison and explosives with their wholesale killing which are too often employed to catch fish. It also makes available marketing facilities such as freezer transportation and storage which the private sector is unable to establish from its own resources.

On the other hand, good marketing of fish is represented by the frozen fish industry using both the Iraqi Fish Company's catch and imported stocks. This system of marketing depends on freezer storage and transport. The wastage is very little, since freezing keeps fish in good condition for a long time. The price is constant, but high,

with marketing being government controlled. Consumers with private freezing facilities prefer this sort of fish because of the fair price and good quality and the fact that they can keep such fish for a long period.

Unfortunately frozen fish is not always available to consumers because of the shortage and irregularity of the supply since the quantities arriving on the market are subject to the vagaries of the fishing fleet's successes and to the import arrangements. In 1980 the quantity of fish marketed by AMA from the domestic fish catch was 20,700 tonnes, less than half the total catch of that year which was 53,450 tonnes. The remainder was marketed through the private sector. The AMA proportion rose to 28,300 tonnes in 1981 and to 30,300 tonnes in 1982.<sup>(11)</sup>

It would be possible to increase fish marketing through the public sector if certain requirements of marketing are developed. In this case the price would be fair for producers and consumers, and wastage would be less. The need is for an effective system of freezers, storage and transport at all stages and for equitable outlets throughout the country. Non existence of these facilities opens the door for private middlemen to control the fish industry and trade. The consequences at present are low prices to fishermen, high price to the consumers, and low quality fish in general. In the private sector there is high wastage in spoiled fish and with the catching of many small fish. These small fish should either be left to grow or, if caught, used for processing in public sector establishments for use as animal feed, for which there is great demand especially in Iraq which suffers a lack of fodder, particularly in concentrated form. The prices fetched by feed concentrate is higher than that for fresh fish on both the national and international markets. Therefore its value to the Iraqi economy would be considerable.

Overall, the national distribution of fish is inadequate, the fish being available much more in the south than in the north because the

large areas in the south which are covered by water provide an excellent habitat for many species of fish. As a consequence fish prices are much higher in the north. Good transport would make fish available in greater quantities and at better prices throughout Iraq. Other local problems include the fact that, for instance, one of the fresh water fishes, mainly found in the south (*Silurus triostegus*) is not usually consumed in that area, partly for religious reasons and partly because it is seen to be too oily, whilst people in the northern part are happy to consume it. The lack of adequate transport and storage facilities make most of this fish inedible before it reaches the consumers. If freezing were available for this fish near its fishing areas, it could be kept for a longer period, both when being transported and when on display in the shops. Freezing fish would solve the problem of transportation and spoilage, and would have the effect of stabilizing the price of the fish. The public sector is better able to create this system of fish marketing, since the private sector would find it difficult both to organize and to afford the high costs and modern techniques required by such changes.

On average per capita consumption of fish in 1980 was about 4 kg. a year. This figure is not only low compared with many other countries but conceals great national variation. In the south, for a few communities, fish form the main element of protein intake, whereas over large areas in the north of the country fish consumption is a rarity. One of the attempts made by the government to increase fish consumption is by importing fish. The quantity of fish imported in 1980 was 2,500 tonnes, its value being ID 1.1 million; this increased to 4,500 tonnes in 1981 (ID 2.1 million) and 5,500 tonnes <sup>(11)</sup> in 1982. All the quantities of fish imported were frozen and sold at an official price which remained constant. The demand for this sort of fish is high because of good

quality since freezing keeps fish in good condition. However, consumers can only find this imported fish occasionally when a consignment arrives. Moreover, official outlets do not cover all parts of the country.

#### 5.10 Conclusion

Because of the increase in per capita income and improvements in the national diet, particularly during the 1970's, the demand for animal products has greatly increased. Supply, however, has not kept pace with demand since the growth in national production of livestock products has not grown proportionately. This has created an imbalance between supply and demand for many animal products.

As a consequence prices have risen dramatically for the commodities which are still under the control of private middlemen. In relative contrast, those items the prices of which are controlled by the state have had their prices kept at a reasonable level, but there have been frequent large failings (both seasonal and spatial) in their distribution. Much of this can now be seen to be the consequence of either inefficient or simply inadequate marketing procedures.

Marketing of animals and their products is generally inefficient because traditional methods are followed in many areas, few modern facilities are available, there are shortages in cool and refrigerated storage facilities, there is a lack of specific refrigerated transport, and retailing outlets are inadequate both in terms of their number and distribution, and as regards their facilities. On top of all this are the vested interests which remain too directed towards profits from marketing, rather than the evolution of a streamlined system.

Marketing of the larger live animals and their meat is under the control of private middlemen, while poultry are under the control

of the public sector. These two systems have an influence on the prices : high for the former, reasonable for the latter.

Such products as dairy and fish, where part is under private control while the rest is under public control, show a similar price differential.

Dairy products are the only livestock products processes for food. Fresh milk marketing is inadequate, distribution to the consumers being sporadic because of a lack in supply and insufficient specific transportation being available.

Animal by-products are the only livestock commodities exported. Their marketing is in the hands of the private sector and is reasonably successful, as is the marketing of wool, now, except for the poorest quality, under state control.

The marketing of chickens and eggs suffers from an extreme deficit in supply in spite of huge quantities being imported. The supply of eggs is not adjusted to the seasonal demand with its great variation between winter and summer.

Lack of refrigerated storage facilities and suitable transportation system for fish marketing makes the distribution of fish unequal throughout the country, with various prices, and high proportion of spoilage.

In order to develop the marketing of animal products further intensive efforts need to be made. These should include a programme of expansion for the building of further cool and refrigerated storage facilities in production areas, as well as in consumption centres all over the country. These stores must be carefully sited in order to ensure a good distribution of the relevant commodities. The stores must be supplied with generators to ensure a permanent electricity supply, and should be under the management of staff whose skills embrace the

maintenance and repair of such stores, as well as administration.

The transportation system must be geared to the nature of the specific commodity. Air conditioned vehicles are needed for transporting eggs and refrigerated vehicles for transporting meat, chicken and fish, whilst at least two sizes are needed, larger for distribution to the wholesale depots, and smaller for the final retail distribution network.

A considerable increase in retail outlets is essential and must be carefully balanced to the population pattern. These outlets need to have the most up-to-date facilities of cooling and storing to keep pace with rapidly rising demand.

Adjustments need to be made in the production cycle of some commodities, e.g. eggs, so that a balance can be made between domestic production and import quotas, in order to moderate the variation in seasonal demand. Finally, greater control of prices must be exercised both with regard to the actual production costs of all animal products and also with the aim of maintaining a price balance between different commodities with a similar function, along the lines followed with other agricultural products.

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CHAPTER SIX

CONCLUSION

Agricultural marketing in Iraq has witnessed major changes over the last three decades, and particularly during the 1970's, due to structural and distributional changes in both production and consumption as a consequence of the effect of market forces upon production and an increase in demand. Previously, the relation between producer and consumer was simple because most of the production was for the satisfaction of producer's needs and not for commercial purposes and generally speaking the demand was stagnant. Most producers were producing to satisfy their own requirements for food, since the majority of the population was rural (about  $\frac{2}{3}$ ) and practised traditional agricultural activities. This individual family self sufficiency was reflected nationally in low levels of food imports and an export sector dominated by the date. The major motivating factor which affected production was the producers' own needs, coupled with the knowledge that the price he could obtain for his surpluses was likely to be low and therefore the varieties of the products for each farmer and his family were more diverse both in terms of range and of quality of product. This was one of the reasons which limited production of each crop because individual producers did not normally cater for commercial production. In particular, production practices were almost entirely dependent upon intensive human inputs and traditional methods of cultivation.

Generally speaking, therefore, production was not commercial and producers did not specialize in any specific commodity. Mechanization was in its infancy and market forces were less effective. However, the most attractive products were the crops such as cereals which, because of their intrinsic nature, had a longer life and storing capacity.

Consequently, the one third of the population that was urban, and the rural population which lacked specific agricultural requirements received their food supplies via middle men who, though exposed to some pressures to maintain fair prices for both consumer and producer, were nevertheless in the business of marketing primarily for their own profit.

Urban population consumption in the early post-war years differed markedly from today. Consumers bore some of the marketing tasks such as storing cereals in their homes and also were involved in some areas of processing. This degree of direct involvement was facilitated by the relatively large size of the families, particularly where the extended family was the pattern. The families budgeted their annual needs, particularly for wheat, once a year after harvest and stored it in their homes for later consumption. This quantity was milled gradually for home-made bread. Therefore, consumers bore the task of cereals storing and processing. Similarly, fruit and vegetables were mostly local crops. They were produced in their natural season, for producers and local markets' consumption. Usually they were transferred short distances. Consumers could purchase them only in their production season as fresh products. However, consumers did dry or process such fruit and vegetables as were suitable for later home consumption. As an example, tomato juice was a home made industry only, individuals purchasing tomatoes when they were cheap to press by hand and leave to dry naturally. This enabled them to consume the juice during the winter, since tomatoes were a summer crop only. Some other vegetables such as okra and aubergine were preserved by stringing them and leaving them to dry in the sun. Other dried fruits included figs and grapes.

Most families in urban areas had a few chickens or other poultry surviving on 'left-overs', and one or two sheep for fattening for winter consumption. Rural populations usually had a greater number of animals for home consumption and for the local markets. Therefore, marketing activities were simple and limited by seasonal and regional factors.

The more complex marketing activities and patterns which have evolved have emerged partly in response to changes in Iraqi society which has undergone great changes during the last three decades, especially in the 1970's, and partly in response to direct governmental initiatives in order to both stimulate and redirect this middle sector. Population distribution between the rural and urban sector is now virtually the reverse of the situation in the late 1940's and early 1950's, and whilst this is to a significant degree explained by the population increase, it is also true that one third of the total population of Iraq has been converted from producers to consumers of agricultural products in only 30 years. Moreover, most rural populations practise some non-agricultural activities both permanently or temporarily as when there are, for example, local government schemes in their areas for improvement of the infrastructure. Production within the agricultural sector was thus adversely affected by the interrelated circumstances of people choosing to leave the land, at least in the economic sense, and of a shortfall in worker availability for those who did try to maintain their farms. Therefore most contemporary agricultural activity suffers from a scarcity of workers and high labour costs, with, in particular, those activities requiring either high seasonal labour inputs or arduous or anti-social hours - which includes a fair proportion of the agricultural production process - unable to secure the necessary work force without paying wages at a level which, so far, profit margins cannot justify. The consequence is a decline in those agricultural practices such as date production needing much manual effort, since the profit margin does not encourage them to continue and expand in this sort of production.

In an attempt to solve this problem, the government recently

encouraged a reverse migration : from urban to rural. One of the methods is by leasing reclaimed lands, loans and some equipment to educated agriculturalists, not least including some who have worked as civil servants in governmental offices, to help them to produce products which the market needs. This land is freely distributed, but the applicants must make this land their main source of income and the land involved must remain in appropriate agricultural use, or else it will be returned to the government. If the effort is deemed successful, the title deeds of the land will be given to them for permanent ownership. The type of activity which the government encourages is concentrated on products which the market needs such as the establishment of orchards to produce fruit, and livestock schemes to help in meeting the considerable shortage of production in these areas.

The areas of cultivation in which mechanization has been successful, such as the cereals plains in the rainfed areas have been expanded, particularly for wheat, despite the unpredictability of rainfall. But, whilst this has increased absolute production, it has also meant that large fluctuations in the volume of production occur from year to year. This is the main problem facing cereal marketing in Iraq. The areas of natural pasture have declined as a consequence of the exploitation of these lands for cereal growing. Therefore, of recent years livestock production costs have risen because of a greater need for fodder which constitutes about 75% of production costs. This obviously costs too much as the demand for these materials is high and there is a general lack of fodder in the country. The result is shortages in livestock production and high prices for the consumers.

In an attempt to maintain a balance between arable land

and natural pasture, some state-owned rainfed areas have been ear-marked for natural pasture by law. Another attempt to both stabilize and increase production of cereals, and reduce dependence on weather conditions is the Mosul dam which is under construction and which will convert the rainfed area in Al-Jesera, the pioneer area in wheat production, to irrigated land.

Despite increased agricultural production, food production has not kept pace with increasing demand, not least because internal market forces recently have had a major influence upon production activities. Most farmers tend to specialize in the sorts of commodities which are in high demand and for which the materials of production are more available, particularly the use of machines rather than workers. Another important factor has been government intervention, either by subsidising the price or by providing marketing facilities and infrastructure. As a result, most of the irrigated areas are either under vegetables because of the high demand, good return and rapid cycle of capital, or industrial cash crops since the government had already made marketing facilities available and guaranteed disposal of such crops, since they are in high demand from public factories. Previously the land was cultivated under cereals, but now therefore, it is under cash crops.

Consumption has developed remarkably because of :

- (1) The relative increase in per capita income throughout the population, but particularly the urban sector which has improved the purchasing power of the people, leading to an increase in demand not only for more foodstuffs but for greater range and higher quality.
- (2) The Iraqi life-style has changed; increasing numbers of women

now work away from home because of the aforementioned increase in demand for workers. This has increased family income and purchasing power but inevitably has also increased the demand for more readily prepared foods, and at the same time has reduced the time available for the preparation of basic foods at home.

- (3) The Iraqi family pattern has changed; the extended family has given way to the nuclear family, most of the adult members of which are out at work.
- (4) The high rate of domestic population increase.
- (5) Foreign immigration to Iraq, particularly in the 1970's, when the Iraqi work-force was not able to supply the whole demand created by the rapid increase in employment opportunities throughout the country, particularly in the cities.

All these factors have imposed great pressures on the marketing system which, at the same time that it has become more government-controlled, has also had to come to terms with an increasing percentage of consumers who are entirely dependent upon the system to get what they need, whether or not they have the money to pay for such items, and producers who, if they are to continue, must dispose of their products at a satisfactory price. The marketing system is thus no longer merely a loose collection of middle men whose motives were too often short term profits rather than the long-term fostering of the growth of this sector, but is responsible for linking supply with demand as part of a series of government objectives and, as such, is not only a larger concern than ever before, but also a more sophisticated and complicated one. Unfortunately, the current system has not kept pace with the general increase in demand, and the further demand that most products

be available all the year round. Many of the earlier problems have, at least in part, been eliminated, but others remain and new problems, particularly associated with the great increases in demand in recent years, have arisen. The reduction in regional variations in demand has not been matched by an equivalent increase in the number of points of production, nor need it be if a better system of distribution could be achieved. These rapid developments, which have escalated recently, have greatly increased the needs for improved transport facilities, in terms of both networks and specialised vehicles. Recognizing the crucial infrastructural role of an efficient transport system, the government has recently taken an increased interest in developing the transport system. Despite this, transport of agricultural commodities still suffers from several problems. Inadequate rural roads is the most serious problem and in spite of the government's recent interest in developing rural roads there is still need for further investment, not least to provide farms and villages with ready access to main roads. This lack of a good network has led to considerable real increases in transport costs, transportation delays and output losses amongst the more fragile crops. In addition, the limited means of transport available prolongs the marketing period on the one hand and leads to goods being damaged when transport is not available on the other. Most fruit and vegetables are transported by ordinary vehicles which are usually open with no protection from the elements.

Some livestock products are transported by ordinary vehicles and this is a most serious problem since it is not an hygienic method for transporting these highly vulnerable commodities. Specialised vehicles must be introduced to preserve crops and livestock during transportation and thus reduce damage and loss. The standard of roads, particularly in rural areas, needs to be greatly increased in terms of

building new roads and expanding existing ones. Alongside this improvement there must be a significant increase in the number of vehicles, particularly specialized vehicles for refrigerated or air-conditioned transfer of commodities. This can be improved in two ways simultaneously. Firstly, the government should increase the number of publicly-owned vehicles and secondly, the private sector should be encouraged to increase the number of its vehicles by a reduction in the customs tax, thus reducing the price of vehicles; and the state banks should offer loans for the purchase of private commercial vehicles.

Railway services must also be improved. The available capacity falls far short of their potential for involvement in the transport of foodstuffs. Railways throughout the whole country are still single track and this hinders operations and reduces their effectiveness and potential. The use of the Iraqi Railways must be utilised during periods of maximum crop production to ease the problem of congestion on the main roads, particularly the access routes to the big cities, where such congestion has been a most serious problem recently.

Storage facilities for cereals are in a better situation than that of other agricultural products such as fruit and vegetables or livestock. Yet there is still need for a continued building programme for grain silos, particularly in those areas where production is concentrated. This will decrease the pressure on transportation, improve food security for the country for longer periods and decrease output losses. In the short term, as was shown in Chapter 3, it is possible to benefit from private stores for even greater food security, while in the long term it would improve the chances of exporting cereals when the irrigation schemes come

into operation. For other products, particularly livestock, there is still a great need for further storage facilities, in particular a need for cool and refrigerated stores throughout production areas and consumption centres. These stores will balance supply and demand and will solve the problem of shortage in livestock products for both national production and imported commodities and minimize output losses. The siting of such stores must be carefully considered to ensure maximum efficiency with regard to the journey length/damage potential factor.

Most wholesale markets suffer a lack of good marketing facilities such as warehousing, cool stores and machinery for unloading and loading commodities. However, there are some wholesale markets built with modern facilities, but they need careful managing to eradicate the present vehicular and pedestrian congestion. Wholesale markets must be supplied with modern equipment and infrastructure, and perhaps most important of all, their management and administration needs up-grading.

Most of the direct links with consumers are confined to the retailing stage. The efficiency of this stage varies from product to product : bread, for instance, is better organized than other commodities because of government involvement in increasing the number of outlets and establishing specialized bread shops which have a regular distribution in most urban areas. In addition all private bakeries are subject to price and standards controls laid down by the government.

In contrast, for fruit and vegetables the most important problem is unclassified and ungraded stock. This results in consumers insisting on selecting their own, with a consequential increase in

damage. Therefore, some retailers attempt to prevent consumers from selecting their own purchases. This could be made more acceptable if the consumer could be shown by practical experience, that such a practice did not result in his receiving an inferior product. This problem can be solved by a better classification and grading of such commodities. Each grade must have a differential price, so giving consumers the option of choosing the category they wish. This, coupled with better methods of display, would reduce output losses considerably. Most of the shops are not supplied with facilities like refrigerators to keep the unsold quantities until the next market and this can have a particularly wasteful consequence amongst those shops which deal with huge amounts of commodities. Similarly, other facilities such as cooling and ventilation to improve the atmosphere in the shops are often not available. Other soluble problems include inadequate hygiene standards in most of these stores, and gaps in the overall distribution pattern of such stores, which contrast with an excess of such stores in other areas.

Retailing of livestock products has extreme problems in the amount available for consumers in terms of both quality and location of outlets. Also, here in particular the lack of freezers and refrigerators and cleaning equipment is a severe handicap to an efficient pattern. The fact that there are already some governmental outlets which are supplied with modern facilities means that the great need for further outlets and increased supply of all livestock products should be relatively easily obtained.

The whole area of packaging leaves great scope for improvement: not least, the number of containers, materials from which they are made, the size and shape of the containers all require restructuring. All these aspects must be studied carefully to produce suitable containers

in order to keep the products in good conditions throughout the marketing procedure and to reduce damage to the crops. For example, the main reason for Iraqi dates not fetching a good price abroad and being unable to compete with other dates, as was shown in Chapter 4, is not a basically poor quality date, but poor packaging. Good packaging can prolong the shelf life of all crops and therefore can play a major role in determining the price level.

The legislation which has been introduced by the government to control all these aspects of marketing has the dual aim of guaranteeing that a higher proportion of the benefits of agriculture go to the producers and consumers rather than to speculative middlemen, and encouraging national self sufficiency as part of an overall plan for agriculture. However, these policies have not always encouraged home producers to develop their production and marketing procedures in order to compete with better foreign classified quality products in good packaging because of the government's desire to protect national producers by price control mechanisms for both foreign and national products. The positive aspects of this policy would be to protect the national products which the country needs. Otherwise the country could come to depend entirely upon foreign products which are cheaper at the moment, thus running the long-term risk of being dependent upon a commodity over which the Iraqi government has no control. Balancing these two major aspects is one of the government's major headaches.

Planning now exists for central control over most types of crops, involving quantities to be grown and prices to be charged to avoid 'glut' situations which in the past frequently arose. In such circumstances, producers were left entirely to their own devices, suffering considerable potential losses, and being at best discouraged,

and at worst prevented, from investing in improvements for their part of the national agriculture.

To achieve a comprehensive development for agricultural marketing in Iraq, effective planning measures should be taken to solve the existing problems and to exploit the available potential in the country. Such a development needs to take place on two fronts : firstly, there is a need to develop the infrastructure such as transportation, storage facilities, packaging, wholesale markets and retail outlets; secondly, the backward aspects of management such as cleaning, grading, classification and retailing, along with the excesses of a bureacratic structure must be removed.

All in all the potential for self-sufficiency in the supply of food products in Iraq is high : there seems no demographic or climatic reason why Iraq should not return to the level of agricultural independence which, admittedly with a smaller population, but also with far less investment in the agricultural sector, it formerly enjoyed. The role of the government is thus crucial, not only in terms of planning, directing and inspiring these changes and improvements, but also, having decreed that it should exercise control over most of the basic aspects of the marketing process, in financing those improvements deemed to be necessary.

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APPENDIX

Law (No.158) contains the following regulations:-

1. (i) Fixing the varieties of cotton allowed to be cultivated, and the areas of cultivation at the pre-determined times. The system is regulated in each area and is announced by the Cotton Development Administration (C.D.A.) in the Official Press and on radio, T.V. and newspapers at least 2 months before the date of commencing cultivation.  
  
(ii) C.D.A. is the administration belonging to the Ministry of Agriculture and Agrarian Reform which is responsible for the development of cotton and its growth.
2. Cultivation of cotton is illegal except with a licence from the Ministry of Agriculture which fixes the locality and area and the variety.
3. (i) Ministry of Agriculture makes seed readily available to cotton farmers from the varieties allowed, according to recommendation from C.D.A.  
  
(ii) Seed price is fixed by a committee instituted from the Ministry of Agriculture at the beginning of the season. The committee's decision has to have the agreement of the Minister of Agriculture.
4. (i) The farmers must arrange disease and pest control and the time of starting and ending these proceedings according to the announcements from the C.D.A., and the times of digging up and destroying the cotton plants.  
  
(ii) If the farmer does not follow the conditions above mentioned the Ministry of Agriculture can do it and charge the farmer twice as much as the original cost.
5. (i) Establishing (building) Mill (extracting seed from the cotton boll) have to be licensed by the Ministry of Agriculture according to conditions.  
  
(ii) All the mills must obtain a license within 90 days of the Law being issued.
6. Cotton factories (mills) must submit to control and inspection by the C.D.A. The Ministry of Agriculture has to issue guidelines for cotton processing (extracting seed from the cotton boll), grading and humidity limiting, and the disposing of seed. The Mill must keep records of all activities.

7. (i) The Minister of Agriculture can close a cotton mill for no more than one year if the factory breaks the law or does not comply with the guidelines. In the case of repeated offences in breaking the law, the factory can be closed permanently after the 3rd occasion.  
  
(ii) The factory can obtain a new license when and if all legal conditions are met.
8. (i) It is not allowed to let cotton or seed out of the factory except with a certificate from the Ministry of Agriculture giving permission.  
  
(ii) Cotton marketing must be restricted to the Public Sector Textile Factories and is not permitted in the private sector except where a low grade cotton such as may result from flood or fire, is involved.  
  
(iii) It is not allowed to transfer cotton seed which is earmarked for processing, from the cotton factory to any place not specified by the Ministry of Agriculture. Any seed so found will be confiscated by the Minister of Agriculture.
9. It is not allowed to import or export cotton, or to import cotton seed for industrial purposes, or allow its passage through Iraqi lands, other than with Ministry of Agriculture agreement and according to the condition fixed by C.D.A.
10. Importing cotton seed for cultivation is restricted to the Ministry of Agriculture and it is possible to import cotton seed for research purposes with the agreement of the C.D.A.
11. It is not allowed to produce cotton seed for cultivation without the supervision of a C.D.A. official.  
The Minister of Agriculture, according to suggestions from C.D.A., will agree to specify areas being cultivated under registered seed for improving crop standard.
12. The Ministry of Agriculture can give permission for public sector organizations for breeding and experimenting with imported or indigenous seeds, and it is not permitted for unlicensed people to deal with them.
13. (i) Anyone found breaking Laws 1 and 2 will be fined ID15 on each donum cultivated in areas prohibited for cotton, or cultivating illegal species of cotton, or cultivating without a license or in more than the area defined, will in addition to the fine, have his crop confiscated at his own expense by the Ministry of Agriculture.

- (ii) Anyone not following this Law or guidelines and system as decreed in (i) above will be fined no more than ID 150 or imprisoned for no more than 1 year or both, in addition to confiscation of all illegal crops.
14. (i) Systems can be instituted to ease the application of this Law.
- (ii) The Ministry of Agriculture issues announcements as required for the application of this Law.
15. Law No.129 of 1963 for developing cotton was abolished, the guidelines contained in it will continue until replaced by new guidelines.
16. This Law must be announced in the Official Press. All officials must abide by this Law.

