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LIVESTOCK MARKETING IN THE JORDANIAN BADIA

BY

SALEM SAFAH AL-OUN

A THESIS SUBMITTED FOR THE DEGREE OF DOCTOR

OF PHILOSOPHY

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1997

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Declaration

This is to certify that the work submitted in this thesis, "Livestock marketing in the Jordanian Badia", is the result of original investigation. All authorities and sources used in its preparation are fully acknowledge. No part of this work has been accepted for any other degree.

Abstract

The purpose of this study is to investigate and provide a better understanding of the processes of Bedu livestock marketing system in the Badia of Jordan, particularly farmers' market behaviour, linkages to markets and their decision-making process.

A mixture of quantitative and qualitative research methodologies were utilised. A stratified random sample of 193 Bedu farmers, and interviews with traders were applied. The whole region of the Jordan Badia and Research Development Programme was covered. The questionnaires were distributed and every farmer was interviewed by the researcher in the period from July to November 1995.

A broad conceptual framework was employed to investigate quantitatively the interactions and dependencies between household conditions, socio-economic characteristics and livestock sales. These factors, which are usually outside the livestock enterprise, are important in household marketing decision-making in relation to time and place of sale, and reasons for sale. The results of this study indicate:

Regarding farmers' marketing behaviour, marketing decisions are related to a household's demand for cash, and environmental factors such as the high cost of production, disease, unstable government policy, household characteristics, and labour capacity. The most important of these factors is to generate cash to buy feed or to reduce costs and eliminate the risk of disease. Most households with fewer than 100 head of sheep were more restricted in their sales decisions than households with larger flocks.

The majority of producers were found to have access to market information, which was taken into account when deciding when and where to sell their animals. Market information is also maintained and transformed through social channels. The historical and traditional characteristics of Bedu society have shaped the way and type of information exchanged between market participants. Since Bedu society is inter-linked by tribal and family relationships, members of the society maintain channels of communication between families in different areas.

As the majority of livestock transactions are carried out at the location of animals, mobile middlemen have an important role in the marketing system. The marketing structure and marketing systems were further investigated. Location of animals was the most important place of sale, and over 86 per cent of farmers were found to favour this type of sale.

Analysis of the marketing channels verifies that farmers have many alternatives for selling their animals. However, in reality only two marketing channels are dominant in the Badia, middlemen and exporters respectively.

The present market in the Badia seems to suffer, to some extent, from the growing lack of trust which arrived together with the trappings of modernisation. The main factors affecting trust are the trade in unhealthy animals, forged or bounced cheques and the failure of some traders to repay farmers.

Livestock production and marketing in the Badia of Jordan, dominated by an open-range mode of production, faces an uncertain future. Rangelands in Jordan have deteriorated as a result of a combination of harsh environmental conditions and human misuse. The livestock market in the region is under heavy competition with imports of foreign live animals and chilled red meat. In the light of these findings, clear suggestions are offered in the conclusion of this thesis as to how Bedu livestock marketing should develop in the future.

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The research was made possible by the Overseas Development Administration (ODA), the Centre for Overseas Research and Development (CORD) and the Jordan Badia Research and Development Programme (JBRDP) to whom I owe special gratitude.

The possibility of conducting research would not have been possible without the Bedu farmers and traders interviewed in the northern Badia. These farmers and traders, too numerous to thank individually here. Their assistance was valuable to my work and they did that with remarkable patience and humour. Their generosity deserves special mention; I owe them a great deal for all they taught me.

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Introductory Chapter

1.1 Introduction

Marketing in theory is regarded as a tool for economic and social development (Drucker, 1958 and Mitchell, 1985). By improving the skills and capacities of farmers, marketing contributes to an increase in productivity, speeding up economic development and improving the welfare of farmers. Furthermore, it should be emphasised that the role of marketing is to respond to society's needs and that the marketing system is an integral part of the society within which it operates. The absence of markets or the inadequacy of existing markets can be an obstacle to both agricultural and economic development. For agricultural improvement to have positive effects, the development of markets must keep up with the development in the agricultural sector. Markets potentially contribute to development by providing ways of allocating resources to ensure the highest value of production. Moreover, they may stimulate growth by promoting technology, innovation and increased supply and demand. The emphasis of agricultural policy on smallholders depends on the creation of new and suitable markets. Improvement in marketing services, especially for small farmers, should have a positive effect on agricultural development (Abbott, 1987 and Mitchell, 1985).

This study will be an investigation into the Bedu livestock farmers' marketing practices, the market structure and its performance. It is hoped that, by investigating the present marketing conditions, this study will contribute to the advancement of

knowledge both in Jordan, and in Arab countries in general, as these countries share similar geographical features, cultural values and traditions.

1.2 Livestock in Jordan and its present conditions

Before the 1920s, Bedu neither owned nor cultivated land, although most tribes held claim to a certain grazing area. Droughts, limitation of movement and the expansion of state control in the early 1940s were all factors which made many young Bedu give up their nomadic lifestyle and join the military forces in Jordan and Syria (Abu Jaber & Gharaibeh, 1981 and Abu Jaber et. al., 1987). Settlement was also accelerated in the early 1970s when large numbers of Bedu were drawn to the Gulf States for work.

As a result of this early settlement, the Bedu, both nomads and settled who now remain in the Badia, constitute only a small percentage of the Jordanian population. An estimate of their numbers indicates that they make up about 4.7 per cent of the total population of 4.15 million (Ministry of Planning, 1989). In the Badia, there are both nomads and settled Bedu. Settlement was on a tribal basis, with all members settling on land given to the tribe by the government as a way of encouraging their self-settlement. As these settlements are far from urban centres, the Bedu have been able to keep their cultural values and traditions apart from other populations, with their economy still dependent on livestock and livestock products (Abu Jaber & Gharaibeh, 1981).

Livestock production has been the main form of economic activity practised by the Bedu. In the past, when the Bedu were less marginalised than they are today, their

rhythm of life was more influenced by the seasonal movements of their animals, following rain to different areas within the Badia. In other words, their traditional production system could be adjusted to their environment, and seasonal movement would allow grazed pastures to rest and grow again. Raising animals in this way caused no danger of environmental degradation or scarcity of animal feed.

Today their life has radically changed. The creation of states and frontiers early this century limited the Bedu's mobility and pushed them to share the responsibility with others for the degradation of their environment. One of the main constraints facing them today is that of obtaining sufficient feed for their animals. The arrival of new technology, especially the use of trucks, has reshaped their economic system (Chatty, 1986). Few Bedu now rely on livestock as their sole source of income. Instead, livestock farming has become one of a number of options which include salaried employment in the army and the civil service (Galaty, et al., 1991 and Abu Jaber & Gharaibeh, 1981). However, there are still many constraints facing the Bedu under this new economic system. The research presented in this study, together with work to be published by other researchers associated with the Jordan Badia Research and Development Programme (JBRDP)¹ (Map 1), aims at trying to shed some light on these new constraints facing the modern Bedu.

¹ The Jordan Badia Research and Development Programme is a joint three-year development programme (1992-1999) between the Royal Geographical Society (RGS), The Higher Council for Science and Technology (HCST) in Jordan and The Centre for Overseas Research and Development (CORD), University of Durham. The main aim of the programme is research and development in the northern region of the Jordan Badia.

1.3 The population of the study

The population of this study consists of a random stratified sample of Bedu livestock farmers and interviewed traders in the JBRDP area. The sample is made up of different groups of farmers, taking into account their flock size, and covers the whole Programme area. The term 'Bedu' is used instead of Bedouin and refers to mobile, settled and semi-settled pastoralists. The term 'producer' refers to the farmer who is considered in this study as the head of the household and who is responsible for trade and business decisions. The term 'outlet market' is designated to livestock markets usually found in major cities and towns in Jordan. These daily markets open early in the morning and close before midday.

1.4 Statement of the problem

The Badia of Jordan is the main area of livestock production, and plays an important role in the supply of meat to local and regional markets where demand has grown without precedent, partly as a result of urbanisation (JBRDP, 1994). The JBRDP, whose mandate is to promote agricultural development at the regional level, has so far received very little reliable or relevant marketing information. Consequently, present knowledge about livestock marketing in the area is incomplete.

This rapidly developing trend in animal production has led to extremely degraded grazing areas, some of them irreversibly damaged and desertified. The increase in production costs has been counterbalanced by government intervention in the form of feed subsidies for the last two decades. However, this intervention encouraged Bedu

to expand their flocks and so worsened the problem of overgrazing. Randhawa (1990, p. 27) suggests:

The feed subsidy and also maybe improvements in income of herd owners have motivated them to increase their stocks. The prices may also not be attractive to draw more supply to the market. This increasing tendency of stocks has some far reaching implications on the carrying capacity of permanent pastures for which area has remained more or less the same.

In spite of the importance of sheep in the household economy of this region, little emphasis has been given to market research, with most research concentrating on crop production. The few data available on the livestock system are mainly government reports and statistics. According to Randhawa, research into the animal sub-sector has received the lowest priority. He states:

Research funds (allocation during 1980/84) had been disproportionately low for animal production and protection compared to its contribution to agricultural GDP and also considering multiplicity of the problems faced by transhumant sheep and goat production systems and intensive production of poultry and cattle production (Randhawa, 1990, p.30).

In other words, Bedu society should be viewed not only as a society in transition, but as a society in which little is known about the workings of the economy. However, any government policy applied to the Badia area should be based on a comprehensive understanding of the socio-economic changes in Bedu life, and into the likely responses to these changes. As Livingstone (1984, p.121) points out :

Research is required into the fate of those who lose viability as independent pastoralists, whether they remain to provide labour to other pastoralists, or take up herding of entrusted cattle; whether they wait in agriculture, hoping to return to pastoralism; whether they take up other local full-time or supplementary activities; or whether they move into urban areas either on a temporary or permanent basis and in each case what the impact is on household viability and level of income.

Whilst enforced settlement has led the Bedu to adopt the material aspects of townspeople's lives, they have not lost their nomadic roots and beliefs. Even though they have given up camel herding, there is no sign that sheep and goat production will be abandoned. On the contrary, economic and political forces have even pushed Bedu newcomers from the city into livestock production. Recently, livestock production has received increased attention from many agricultural development programmes in Jordan. There is now evidence that animal production is in fact an important part of the household production process and a significant resource base. Improving the productivity and marketing of livestock in these households has the potential for making a significant impact on the welfare of the Bedu economy as well as the overall output of the livestock sub-sector. Livestock play an important role in Bedu society, having social, cultural and economic value. However, livestock production and marketing need to be improved in order to contribute better to both environmental and economic development. Therefore, the marketing system needs to be improved. The existing livestock marketing system in developing areas is characterised by a high degree of inefficiency caused by deep rooted problems. Basically, the present marketing system does not fit into the society of small livestock holders. Small-holders lack information about and access to the different marketing channels. Furthermore, through their activities, traders in the different marketing channels sometimes do not share their information, preferring to utilise it to their own advantage. The result is that the different marketing channels are incompatible with the needs of farmers in areas of production. Agricultural marketing policies and institutions in Jordan have been formulated mainly for the benefit of arable farming and are less relevant to livestock farmers. Besides their incompatibility with the needs

of livestock farmers, these policies also contribute to the inefficiency of livestock marketing in the country.

Within this context, the statement of the problem centres around the following point: the situation of livestock marketing in the Badia and how it can be improved. This research is part of a comprehensive socio-economic research programme investigating the extent to which changes in the agricultural policy of the Jordanian government will affect the people of the Badia region. Carrying out fundamental research to understand the structure and operation of the economy of the Badia enhances the Badia Project's objectives of developing the economy to the benefit of the inhabitants and improvement in the environment. The collection and sharing of data amongst the research teams will be beneficial to all those involved.

1.5 Objectives of the study

The overall objective of this study is to provide a better understanding of the processes of the Bedu livestock marketing system in Jordan, particularly farmers' market decisions and how they are linked to the market environment. This objective complements Oakeley's study (1996a) which investigated the flow of the sheep trade within the Badia, as well as to other regions in Jordan and neighbouring countries. Together, the present study and other studies, e.g. Campbell, 1995, 1996, Roe, 1995, 1996 and 1997; Oakeley, 1996 and 1997; Jones, 1996, Al-Srouf, Al-Tabini, Al-Serehan and Papadopoulos, are aimed at complementing those generated by the applied micro-economic research conducted by the Badia Programme.

The interest for this study arose from the growing perception that little research has previously been done on Bedu domestic livestock marketing in respect to the country's livestock development. There is a substantial need to understand the existing marketing system and its relationship to Bedu household characteristics. In general, the research investigates and describes the marketing activities at the household level and provides a possible understanding of the marketing behaviour that exists among different Bedu households. The Bedu livestock production system has never been the subject of a satisfactory and comprehensive study in this regard. Most of the studies that have been carried out were limited to arable products. The specific objectives of this research are:

1. To explore and analyse the marketing of livestock (sheep and lambs) in order to determine factors that affect producers' marketing decisions;
2. To describe and analyse the livestock market channels and processes in terms of the organisation and role of major market participants;
3. To provide an analysis of farmers' market behaviour and problems;
4. To suggest policy recommendations and an outline of research needs for analysing livestock marketing problems in the Badia of Jordan in the longer term and
5. To contribute to the whole body of research data and materials on livestock marketing and farmers' decision making in similar areas of the country and elsewhere.

1.6 List of hypotheses

It is hypothesised that livestock marketing in the Badia and specifically the JBRDP area is performing well because:

1. Under current livestock marketing circumstances, the sale of livestock from Bedu households is a reflection of demand for live animals from local and regional markets;
2. Neither producers nor traders have excess bargaining strength within the marketing system;
3. Large-scale producers have more alternatives in their marketing decisions than small-scale producers;
4. The majority of marketing decisions are made on production considerations; and
5. The importance which farmers place on marketing varies according to the number of animals they have and various socio-economic factors.

The overall objectives of this study are therefore to investigate the structure of the market and constraints to livestock farmers in the Badia. This will involve a general description of the various systems of livestock marketing as applied in the area and a proposal of means and methods through which the situation can be improved.

1.7 Structure and organisation of the thesis

The thesis is divided into nine chapters. Chapter one presents an overview of the geography of Jordan, and the role of the agriculture sub-sector, in particular the livestock production system in the country. In chapter two emphasis is placed on the role of livestock in the Bedu's welfare. Chapter three presents the methods of data

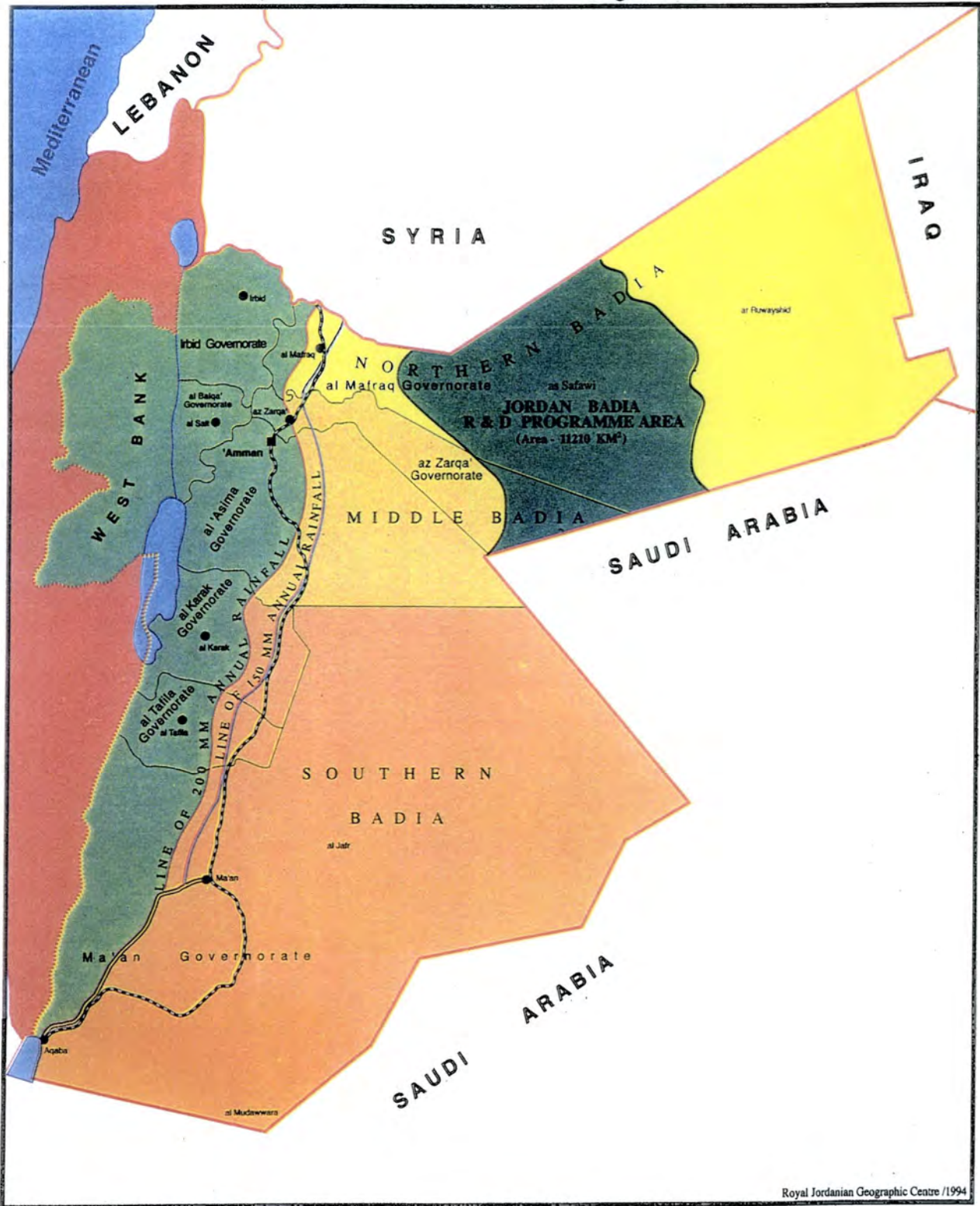
collection and analysis. Chapter four examines the current literature on the market, marketing, transaction costs and decision making. The focus is mainly on research contributions that have been made by researchers in different fields in the study of marketing systems in developing countries. These studies offer a useful conceptual framework for this study as well as suggesting techniques which may be used to examine markets and marketing decisions under traditional livestock systems.

Chapter five presents the demographic and socio-economic characteristics of the households interviewed in the study area. Chapter six discusses and analyses the producers' patterns of livestock sales and their marketing decisions, while chapter seven extends the analysis to the market organisation and market participants. Chapter eight presents a discussion of the whole marketing system by relating the results from Chapters five, six and seven.

The conclusion and recommendations drawn from the foregoing analyses and discussions of the problems, possible solutions and a strategy for implementation are presented in the concluding chapter.

Map 1

THE HASHEMITE KINGDOM OF JORDAN (Location of Jordan Badia R&D Programme)



Royal Jordanian Geographic Centre /1994

Source: The Jordan Badia R & D Programme, 1994

Chapter One

Geography and economy of Jordan

1.1 Introduction

The traditional production system in a developing country cannot be explained without reference to its geographical and economic background. It is necessary to examine these factors in order to try to understand how this type of production interacts with other vital variables in Jordan. It is the intention in this chapter to provide a broad outline of the Jordanian economy, and the agriculture and livestock production sectors. The history of the state of Jordan goes back to 1921 when Great Britain, the League of Nations' mandate power, recognised a local central authority in Transjordan. Thus, in March 1946, Jordan was recognised by the British government as a sovereign state.

Jordan is situated near the south eastern shores of the Mediterranean, between 29° N and 33° N, and 35° E and 40° E. It is bordered to the north by Syria, to the east by Iraq, by Saudi Arabia to the south, and by occupied Palestine to the west. The total area of Jordan is 89,206 km². The country can be divided into three main regions distinguished by topography of land and climate: the highlands, the Jordan valley, and the arid and semi arid land of the Badia. Generally, Jordan has a climate similar to the Mediterranean, although temperatures vary from one region to another in certain seasons. In the eastern and southern parts, the weather is hotter than in the western parts. The rain season usually starts in November and ends in April. Rainfall amounts vary from one year to another, and affect agricultural production on a large scale. In

the highlands, the annual rainfall sometimes reaches 600 mm, while in the Badia, annual rainfall is less than 200 mm. The Jordan valley has long, hot, dry summers with temperatures rising to more than 40° C, while the highlands have a more moderate climate.

The greater part of Jordan consists of arid and semi-arid land known as the Badia. The Badia region lies in the eastern part of Jordan, extending from north to south and covering an area of 72,660 km², falling within an arid climatological zone. It constitutes 81.3 per cent of the total area of Jordan, and is subdivided into the northern Badia, the middle Badia and the southern Badia (JBRDP, 1994) (Map 1).

Before 1948, Jordanians were mainly Bedu, the majority of whom were pastoralists. The development of events in Palestine and the establishment of the state of Israel in 1948, created an unstable situation for Jordan. As a result of the Arab-Israeli war in that year, Jordan was obliged to absorb a large number of Palestinian refugees. In 1967, the whole West Bank was occupied by the Israeli army, and the impact of this on Jordan was calamitous. The population of Jordan increased by one-third because of Palestinian refugees coming from the West Bank. In 1991, 300,000 Palestinians were expelled from Kuwait and the population of the country increased by 10 per cent (Hear, 1995). According to the census in late 1994, the Jordanian population was estimated at 4,095,579, with an annual growth rate of about 3.4 per cent. The majority of the population lives in urban areas, a figure estimated at 77 per cent by the Ministry of Planning for the year 1993 (The Ministry of Planning, 1993).

Jordan's economic system is based on free enterprise and private initiative. The Jordanian government participates with the private sector in implementing large scale industrial projects. During the 1960s, the economy was characterised by the dominance of its agricultural sector, but the condition has changed significantly. Political events in the area have greatly affected the growth of the economy, particularly the events of the Arab-Israeli wars in 1948 and 1967, and the Gulf crisis in 1990-1991. As a result of the arrival of Palestinian refugees, the economy shifted from one dominated by agriculture to one dominated by services, and the labour force increased at a faster rate. In 1994, the service sector accounted for 65 per cent of the GDP and about two-thirds of Jordan's labour force were employed in service related jobs (Table 1.1).

Table 1.1: Jordan's 1993 GDP Distribution

Sector	Percentage
Services	65.0
Agriculture	9.6
Industry and manufacturing	11.2
Construction	6.5
Mining and quarrying	2.2
Electricity and water	2.6
Other	2.9
Total	100

Source: Monthly Statistical Bulletin, The Central Bank of Jordan, Oct. 1994

Since the country has limited natural resources, the economy of Jordan has had to rely on outside aid and remittances from Jordanian workers abroad, especially during the 1970s and early 1980s. During the period 1975-1985, Jordan's per capita income increased from \$1,250 to \$2,500 per annum. The country enjoyed sustained

economic growth and the economy scored the highest growth rates in its history. From the mid to late 1980s, there was a decline in Arab assistance and remittances from Jordanians working in the Gulf States. The latter fell from \$2.0 billion in the period 1980-1986 to \$1.0 billion in 1989. Consequently, the country faced an outstanding external debt resulting in a currency crisis in 1988-1989. Thus, debt rescheduling, economic reforms and adjustment programmes were adopted by the Jordanian government in 1989. Thereafter, the economy showed some recovery, but as a result of the Gulf crisis in 1990-1991, Jordan's economy faced another decline (Clawson, and Howard, 1991).

The mass arrival of Palestinians during and after the crisis, placed increased demands on education, health, and other social services. However, the main effect on Jordan's economy was an increase in the labour force which caused the unemployment rate to rocket to 14.5 per cent for females and 34.2 per cent for males for the year 1991 (The Ministry of Planning, 1993).

In 1994, Jordan and Israel signed a peace agreement and it is supposed that the economic gains from the peace treaty will be access to water rights, trade access, labour opportunities and international investment in the region. For example, some Jordanian labourers have taken up work in Israel (Clawson, and Howard, 1991), and Jordan is expected to increase its water resources by 215 million cubic metres annually therefrom (Elmusa, 1995).

1.2 Agriculture sector

Agriculture and livestock were by far the country's most important sectors, and for many years Jordan was able to export both cereals and livestock. According to Gharaybeh (1970) in 1927, 60,769 sheep and 38,971 goats were exported from Al-Karak district alone. Up to and during the 1940s, agriculture was the principal component of the economy in Jordan. Agriculture's contribution to the GDP has been as much as 22 per cent and it has employed about 33 per cent of the Jordanian labour force (Bani Hani, 1995). Today, the situation is different, and the country relies heavily on the international market to meet its food needs. As far back as the late twenties and early thirties, agriculture and livestock constituted a major part of the economy of the country. Today, agriculture's position in the economy has been relatively weakened in terms of output and employment (Bani Hani, 1995). The water resources of rain, surface and groundwater, play an important role in food production through their influence on crop production.

Agricultural crops are grown in the highlands, however the soil is thin in these areas and so tree farming is practised. The Jordan valley extends along the Jordan river and represents a large part of the irrigated land in the country. Cereals, fruit and vegetables are the main field crops grown. The irrigated agriculture represents 8 per cent of the cultivated land, but it produces more than 40 per cent of the total agricultural production, about 70 per cent of the gross value of agricultural production, and about 85 per cent of agricultural exports (Wilson, 1991). The highland areas represent 96 per cent of cultivated land in Jordan, in addition to the irrigated land in the Jordan valley (The Middle East and North Africa, 1997). The

highlands mainly produce cereals, and the irrigated areas of the Jordan valley produce fruit and vegetables. About half of Jordan's agricultural produce is grown in the Jordan Valley. Wheat, barley, lentils and chickpeas are grown exclusively in the highland areas, which comprise the vast majority of Jordan's arable land (Wilson, 1991). In addition to livestock production, irrigated crops, mainly vegetables, are found in the Badia. Agriculture in this area depends heavily on the weather and so results in widely fluctuating returns (Table 1.2).

Table 1.2: Production of main crops, 1995

Products	(000 tons)
Wheat	58.5
Barely	31.7
Tobacco	4.8
Tomatoes	439.7
Cucumbers	66.4
Olives	63.2
Citrus fruit	105.5
Melons	117.8
Bananas	29.3

Source: The Economist Intelligence Unit, 1996-1997

Agriculture's share of the GDP is less stable than that of the industrial and service sectors. Agricultural development in Jordan is restrained by the poor soils found throughout the country, lack of water resources and the unnatural increase in the population (Wilson, 1991). The contribution of the agricultural sector to the GDP is substantially less than would be found in any other country considered as an

agricultural country. Agricultural production has been unable to meet domestic consumption needs. With rising standards of living and the population increase, the demand for food in Jordan has increased rapidly in the last four decades. In 1991 and 1992, agricultural exports accounted for about 11 per cent of the value of exports of goods, whereas imports of agricultural goods were about four times greater (Ministry of Planning, 1993).

Despite the low share of the agricultural sector in the gross domestic product, it has a relatively important impact on the national economy. Its importance is underlined by the fact that 22 per cent of Jordan's entire population extract their main income from this sector, and it employs 7 per cent of the labour force (Ministry of Planning, 1993).

Notwithstanding the increase in agricultural production, its contribution to the GDP has been declining. For example, in 1970, the agriculture sector contributed about 8.9 per cent to the GDP and fell to 6.6 per cent in 1980 and 8.0 per cent in 1990 (Bani Hani, 1995). According to the Ministry of Planning report for the period 1980-1990, the agriculture sector's contribution fell to 7 per cent (Ministry of Planning, 1993). Since the productivity of agricultural land is low, the annual food production growth rate will remain low when compared with the high annual population and per capita income growth rates. Consequently, food production cannot meet food demand, and the food gap is indicative of this deficiency.

1.3 Livestock Production

Animal production is made up of sheep, goats and cattle which are the main sources of red meat in the country. The stock of sheep and goats was estimated in 1995 at 2 million for sheep, 0.8 million for goats and 0.58 million for cattle (Ministry of Agriculture, 1995) (Figure 1.1). Most of these animals are under extensive system management. In 1990, The Ministry of Agriculture estimated that the livestock sector contributed between 38-45 per cent to the total agricultural production (The Ministry of Agriculture, 1990).

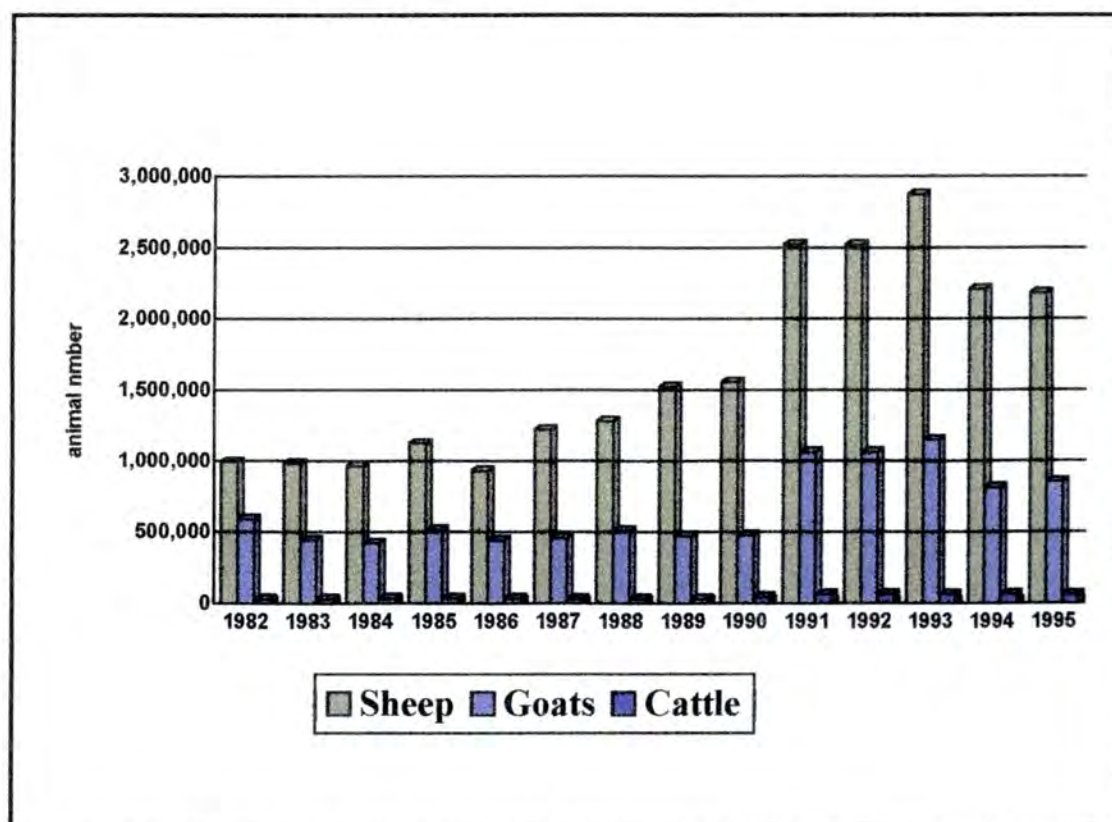
Red meat production was estimated in 1983 at 10.2 thousand tons. During the period 1973-1980, there was no change in red meat production, but from 1981 to 1984 the meat production showed an annual rate of increase of 6 per cent (Shakib and Arabiat, 1986).

Self-sufficiency in meat was around 45 per cent in 1991 and 38 per cent in 1992. Sheep contributed 84.4 per cent with the remainder coming from cattle, goats and camels (Table 1.3). However, a report made in 1996-1997 by the Economist Intelligence Unit estimated that, whilst Jordan only meets 30 per cent of its demand for red meat, it is self-sufficient in poultry and egg production (Economist Intelligence Unit, 1996-1997).

Livestock production is neither responding to the increase in the population at large nor the increase in the daily requirements for animal protein. The level of consumption of protein is set at 20 grams a day per head, a quantity not available to

the average citizen from local supplies (Ministry of Agriculture, 1992). Taking into consideration the increased demand for animal produce, the steady rise in per capita income at 2.8 per cent as a result of development efforts and the high rate of population growth at 3.4 per cent, much pressure has been put on the demand side. Production fluctuates from one year to the next, and shortages of red meat are met by imported live animals, fresh, chilled and frozen meat. The substantial rise in imports of chilled red meat is due to the Ministry of Supply policy which aims to provide consumers with a cheaper source of red meat than that produced locally. A report to the Ministry of Supply in 1992, indicated that the country had to import 62 per cent to meet the country's demand. In 1992, the quantity of meat consumed in Jordan was estimated at 44,176 tons, while local production was about 16,851 tons. The average per capita consumption is estimated at 11 kg per year, but a wide range exists. Local production of sheep contributes about 61 per cent to overall consumption while goats contribute 23 per cent, cattle 14 per cent and camels 2 per cent (Ministry of Agriculture, 1992).

Figure 1.1: Number of livestock in Jordan 1982-1995



Source: The Ministry of Agriculture, 1995

Table 1.3: Agricultural production (in 1,000 ton)

Products	1990	1991	1992	1993	1994	1995	1996
Red Meat	92.8	154.0	154.1	173.5	147.6	132.9	146.4
Poultry Meat	90.9	109.1	127.3	151.6	170.9	194.5	181.8
Milk	170.7	277.5	277.5	295.1	268.1	260.3	292.3
Eggs	101.9	140.0	149.0	165.8	167.5	137.5	139.6

Source: Based on the Central Bank of Jordan, Statistical Bulletin, 1997

Furthermore, there is every reason to expect domestic demand for meat and animal produce to reach higher levels in the future. The high growth of the population and the improved purchasing power of consumers are the main factors which emphasise

the need to improve marketing facilities to supply more food of better quality to keep pace with the increased demand. Despite the significant role of the livestock industry in the national economy, it has received less attention and remains undeveloped, hence the large bill for livestock and livestock products that are imported by the government to meet the country's needs. The country is still far from self sufficient in livestock and livestock production. "A big gap exists between the potentially available resources and the requirements of livestock in general" moreover "agricultural policies should be clear and adopted by the government and should be monitored from time to time to make adjustments if needed" (Abu-Zanat, 1995, p.20). Serious efforts by the government have been made to reorganise and improve this sub-sector, although further efforts are still needed.

Animal production is under tremendous pressure to meet the growing demand for animal protein. The massive demand of the growing urban populations for meat and milk often translates into environmental damage, with large areas of land becoming degraded through overgrazing and deforestation followed by ranching. Traditionally, livestock was dependent on natural range as feed resources. However, livestock production is now facing many constraints such as shortage of feed resources; lack or instability of government policy toward this sector; lack of nutritional guidance; absence of financial support and lack of a satisfactory policy to control animal diseases (Abu-Zanat, 1995).

The number of animals fluctuates from one year to the next due to varying rainfall and climatic conditions. Severe environmental conditions, and rainfall in particular, greatly

affect the amount of feed available. The increased number of animals and the pressure put on rangelands has resulted in the overgrazing controversy. The purchase of feed has become the most important expenditure for livestock producers. Biodiversity is affected by extensive as well as intensive livestock production. At the same time, livestock are squeezed into poor areas where population pressure and poverty coincide, such as in Bedu areas.

In essence, the conflict between livestock and the environment is one between different human needs and expectations. The livestock sector is growing at unprecedented rates. Livestock is not only important as a producer of meat and milk, but also as part of the modern food chain, providing high value protein food. Other non-food functions, albeit of declining importance, still provide the rationale for keeping the majority of livestock. For small-holders it constitutes the main, if not the only, capital reserve of farming households, reducing risk and adding stability to the overall farming system. As such, livestock is a tool to satisfy a large variety of human needs. Nonetheless, livestock production is growing out of balance with the environment and is under so much pressure that it has led to environmental degradation.

Livestock production thus seems unable to cope with the increase in domestic demand for red meat. Pastures have deteriorated in the past two decades and are incapable of carrying the number of animals maintained by the population. The rangelands suffer from the degradation of plant cover, and many plant species are vulnerable to extinction due to overgrazing and the frequent dry years. Several factors have

contributed to this. Extensive arable agriculture, especially cereals and vegetables in many areas in the country, has increased pressure on pastures. The introduction of vehicles moving animals to remote pastures for grazing, and the increased number of animals over the capacity of the range have added to the degradation. Finally, the transfer of land ownership from a tribal basis to individuals, together with the absence of a clear and well defined policy governing grazing practice and land ownership, has contributed to the widespread damage of the environment.

Furthermore, it has been said that the lack of co-ordination among agricultural organisations is doing much harm to the livestock sub-sector. A multiplicity of ministries, organisations and institutions are involved in policy formulation, albeit with some ambiguity as to their individual roles. For example, a negative policy implemented by the government is the importation of live lambs and chilled lamb through the Ministry of Supply (Table 1.4). This meat is sold to retailers at prices lower than prices for domestic production. The import of red meat has thus taken the place of locally produced meat in terms of demand (Randhawa, 1990).

Table 1.4: Jordan's main livestock exports and imports in 1992

Type	Imports	Exports
Live bovines (number)	21,015	10
Live sheep (number)	497,814	549,112
Live goats (number)	17,345	2,980
Meat of sheep & goats, fresh or frozen (kg)	17,669,745	0
Meat of bovines fresh or frozen (kg)	18,850,621	117,372
Total	37,056,540	669,474

Source: Directorate of Statistics, Amman, 1992

Consequently, some conflicts in policies and contradictory signals can be witnessed, with the country bearing financial, economic and social costs without gaining the appropriate benefits from such undertakings (Randhawa, 1990). The animal industry in Jordan is controlled by two ministries. The Ministry of Agriculture and the Ministry of Supply control the main activities over many other Directorates. Other organisations involved in this sub-sector include the Agricultural Credit Corporation, the Jordan Co-operative Organisation, and the National Centre for Agricultural Research and Technology Transfer.

Jordan does not maintain a long term agricultural policy, but operates on crisis management. That it responds to short term problems has been the case in most of the agricultural sector. This sector still suffers from a shortage of labour, a lack of agricultural credit facilities, and the rising costs of services. Another factor considered to have had a negative impact on livestock production was the removal of feed subsidies in 1996. In response to a condition laid down by the World Bank and in order to benefit from a \$100 million Agricultural Adjustment Loan as well as a \$13 million loan from the Technical Assistance Programme, Jordan had to agree to a removal of input subsidies (Oakeley, 1996b).

The government's agricultural policy seems to be based on no previous planning and lacks understanding of the importance of this sector to the household economy. Livestock production has become reliant on supplementary subsidised feed provided by the government. Imported barley by the Ministry of Supply steadily increased from 31.4 thousand tons in 1983/84 to 97.83 thousand tons in 1987/88 and again to 232.9

thousand tons in 1988-89. In 1992, the government imported feed valued at JD 75,728,488 (Table 1.5). The subsidised feed appears to have contributed to reducing the adverse impact of dry years on sheep and goat numbers and to have encouraged increased stock. Therefore, supplementary feed has become a major factor for the producers. The latest research results on costs of animal production in the Badia in 1996, indicate that feed costs account for 74 per cent of total costs for producers in the Badia.

In Jordan, most government offices and departments publish annual reports and statements of their activities, although such publications are often incomplete and poorly organised. These publications, sometimes based on estimates, have become the only primary source materials and basic references for the majority of the literature written on the livestock sub-sector. The last census of animals, conducted by the Department of Statistics in October 1991, is an example of this type of publication and represents the most important source of information on the livestock sub-sector to date. According to this census, the number of livestock had doubled from the previous year. The fluctuations in livestock numbers in Jordan are shown in Figure 1.1. The number of sheep increased from 1,556,000 in 1990 to 2,524,000 in 1991. The same rise has appeared in the number of goats and cattle. The Ministry of Agriculture and the Ministry of Supply gave no explanation for this fluctuation, which points to the need for a regular enumeration of the livestock population. According to Blench (1995), the extraordinary rise in livestock figures in 1991-1992 can only be attributed to changes in the methods of data collection.

Table 1.5: Jordan main livestock feed imports, 1992

Type	Quantity in kg	Value in JD
Barley	293,481,299	22,487,515
Maize	576,619,451	53,138,775
Bran	2,041,370	102,198
Straw	3,113,620	226,956

Source: Directorate of Statistics, Amman, 1992

In spite of the importance of livestock in Jordan, particularly sheep, little emphasis has been given to market policy. There is neither market information on prices and supplies, nor grades or standards. Moreover, there is little government intervention and little market infrastructure. Official government data on livestock flows, market supply and prices are absent. Data on market entries are also lacking since records are not kept at all in markets. Information on stock slaughter is usually understated in official records because of the large amount of household slaughtering. Price information in official government documents is absent since there is no collection of livestock or meat prices. Markets are not equipped with livestock scales, so the livestock service can give little indication of per kilogram prices. Movement across borders is recorded by both customs and livestock services, but information from the former is often vastly understated because of export or import tax evasion.

1.4 Conclusion

Jordan is confronted with the necessity for change and faces a challenging future. The government has been under pressure from the International Monetary Fund (IMF) to deal with its debts, and has pursued a policy to increase the price of basic foodstuffs,

while subsidies on food production and consumption have been reduced. In recent years, the Jordanian government has implemented a trade liberalisation programme such that direct control over parts of agricultural production and subsidies has been reduced. Tariff exemptions and quantitative restrictions have also been reduced. This policy has been motivated by the fact that Jordan plans to join the GATT trade agreement. While the agricultural sector is heavily dependent on government support and protection, there is no serious policy to explain or predict the impact of such a liberalisation policy. Poverty and unemployment are considered to be a real burden on the national economy. As a result, any policy concerning agriculture requires action on more than one front.

Chapter Two

The Bedu and the role of livestock in their economy

2.1 Introduction

The nomads of the Middle East are called Bedu, meaning inhabitants of the desert. For centuries, these nomadic people of Arab descent dominated the vast Middle East desert. Despite this great length of time, the pattern of their lives has changed relatively little. Nomadism is a way of life based on tribal organisation (Jabbur and Conrad, 1995). The social structure of tribes and their members and their social relations are largely determined by kinship, with family loyalty holding the strongest bond. Within the family there is a rigid hierarchy made up of the male members of the family in descending order of age. The oldest male decides what is in the best interests of the family and dictates the role each individual is to play in the group's general goal. For the individual, this determines whom he marries, where he lives, whether he pursues an education, and his occupation (Meir, 1997).

The Bedu are practically self-sufficient, although they have never been completely so. Most of their food needs are provided by their animals, but some things they must buy from towns. The sale of their animals and animal products does not provide them with a sufficient income to meet all their requirements (Kay, 1978).

In the past, the Bedu's household needs were minimal and they were able to meet their demand from the herds. Their cash requirements were met by transporting goods across the desert and renting or selling camels to town dwellers. Camels were

thus the mainstay of Bedu life, providing milk, meat and transport. (Abu Jaber et al. 1987; Ingham, 1986; Lancaster, 1981 and Kay, 1978).

Bedu were completely reliant on wild natural grass for animal feed, such that the total number of animals kept at any one time depended upon the seasonal situation. Animals were kept mainly for their milk and it was rare for animals to be raised for meat. Over time, the Bedu have survived the hostile environment by migrating vast distances to find pastures and water sources for their herds of camels, sheep and goats in the Badia which is now known as the Badia in Jordan, Syria, Iraq and Saudi Arabia (Leybourne, 1993).

Bedu societies have come under increasing pressure to change or adapt their way of life. This has been done by economic development, government persuasion and political force. Due to the political developments early this century, government control and authority have gradually extended over most areas of the Middle East. The Bedu's position remained active and strong in the desert until the 1920s. During the Ottoman hegemony in the Middle East, which lasted for nearly four centuries, the Bedu stayed a powerful force in the desert and the Turks were thus unable to gain control. Only when the British and French mandates gained command over the area did the Bedu run into conflict with the new authorities. Both mandates maintained a strong authority by drawing political borders across the desert, and by building roads to facilitate military control of the area. These moves had a dramatic effect on the Bedu (Chatty, 1990 and Kay, 1978).

The geographical division of Arabia into tiny states resulted in the Bedu being separated from their land and other Bedu populations. The restrictions on movement as a result of political boundaries have since played a key role in the decline of pastoral nomadism in the region, as well as having a large effect on migrant patterns. Governments of the different countries have become much more careful in controlling the movement of people over their borders, to the extent that defensive walls have been built, made of sand and rubble barriers equipped with sophisticated detection systems and minefields which extend for thousands of kilometres. These measures have clearly undermined the Bedu advantage in the desert, not only controlling their movement within and across borders, but also having the effect of sealing off major towns, water sources and good pasturage.

Economic growth in the Middle East was brought about by the discovery of oil. In the late 1960s and early 1970s the new economic changes and the resultant rapid urbanisation had an effect on the Bedu way of life. When the oil economy of the Gulf states began to expand, a large number of Bedu drifted to these countries looking for work. As the demand for both labour and meat increased, the Bedu found themselves able to act as intermediaries between different types of economy. Many Bedu drifted from small scale pastoral economies and took up wage employment in towns, whilst other sedentary Bedu continued trading (Galaty, 1990). Social and economic changes have resulted from the use of technology adopted by some nomadic societies. Improvements in infrastructure also accelerated the interaction between townsmen and nomads. Another shift in Bedu economy took place when sheep became the main herding animal of the common Bedu tribes. The camel's role in transport has

diminished rapidly as cars and trucks have taken over. The replacement of camel herds by sheep resulted in both the use of trucks and the growing demand for red meat in the region (Chatty, 1990 and Chatty, 1986).

Military forces in the region have become the main employer and income generator of the Bedu, as larger numbers of young Bedu have joined up. This has led many Bedu to work in the Gulf countries and give up herding animals altogether.

Modern communications, transportation, and armaments remove the protection of distance and traditional mobility, and substantially reduce the military efficacy of individual character and small group spirit, as does the ability of state authorities to extract substantial societal resources and allocate them to the support large well equipped, professionalized military forces. In consequence, nomadic and pastoral peoples who traditionally were politically autonomous and militarily independent, who themselves were fearsome forces in their social surroundings, are now encapsulated in modernizing states and find themselves dwarfed demographically, electorally nugatory, and rendered militarily insignificant (Salzman and Galaty, 1990, p. 11).

For several years, governments in the Middle East have introduced policies to integrate the Bedu within their national economy. Within concepts such as modernisation, settlement and a 'better' life, Bedu have been targeted by government administrators. This has been implemented through settlement programmes, wage policies and the labour force. These development programmes have however, in one way or another, contributed to the overgrazing of the semi-arid steppe. Other pressures put on nomadic societies come from extensive agricultural investment, land tenure, and the expansion of government control. Galaty and Aronson (1981, p. 17) stress:

In global development for nations and for people, livestock-dependent peoples *everywhere* are losing ground. For some decades, development planners, academics, and pastoralists have, with diverse motives and aims, tried to bolster, modernize, or fundamentally transform the

pastoral way of life. Individual pastoralists have sought to cope with pressures they feel by such adaptive mechanisms as labour migration, the increase of herd sizes, the diversification of craft production, or the pursuit of education.

The Bedu share some of the difficulties that face pastoral communities all over the world. They have been pressured into having a non-pastoral economy by joining the labour force through the above mentioned settlement programmes, wage policies, and joining the military. Due to social and economic changes in their life, they have become the poorest communities in their representative countries (Salzman and Galaty, 1990 and Kay, 1978).

Similarly, Bedu in Jordan share the effects of changes brought into their society from outside, such as limited movement of their families and animals and the consequent overuse of land. Moreover, at the present time, Bedu have fallen behind the rest of the population and the gap between them has expanded. Urban and peasant populations are better trained and educated while the majority of Bedu are still illiterate and lack primary labour expertise. Galaty and Aronson (1981, p.17) state:

The crisis of pastoralism is worldwide. It derives from the simultaneous increase of pressures to absorb pastoralists into the nonpastoral economy (through settlement programs, wage policies favouring migrant labour, forced commercialization, a relative drop of the value of pastoral products, and the like) and of measures that directly deprive pastoralists of their former share of economic and political life (by the expansion of agriculture, military patrols, destocking programs, and the destruction of traditional systems of the land tenure). The result of these powerful forces is that pastoralism is increasingly being relegated to people too old to change, too poor in alternative skills to leave, or too far away from centres of power for anyone to care yet.

2.2 Bedu in Jordan

Just how many nomadic or semi-nomadic Bedu are left in Jordan is an open question. A study done in the late 1980s suggests that perhaps 5 percent of the Badia population remains wholly nomadic (Ministry of Planning, 1989). However, this figure is grossly misleading. A Bedu can no longer be defined as having a nomadic lifestyle. The demarcation line between sedentary and nomadic populations is fluid, for the Bedu can be nomadic, semi-nomadic, or settled. Rather than the way he lives, it is the strength of the Bedu mentality that is important for the classification of a Bedu. Under this criterion, the Bedu constitute a significant part of the population. In Jordan, the number of nomadic people has been in decline with the majority becoming settled physically rather than mentally. Their economy is no longer based on the husbandry of animals alone. With insufficient qualifications to enter the workforce, many Bedu have become manual workers and so receive low wages. The consequent unfair competition between these Bedu and urban populations, as well as settled rural populations, has resulted in difficulties for the former. As Kay (1978, p. 133) demonstrates:

A serious handicap, which helps to widen the gap between the nomad and the townsman, is the high illiteracy rate of the [bedouin]. Schooling is difficult to provide for nomadic desert dwellers and, despite the fact that most governments have made considerable efforts in this direction, a large number of nomad children still grow up unable to read or write.

Due to extensive arable farming and mobility constraints, Bedu are being pushed to live on land with poor conditions and scarce water sources. With population pressures and extensive farming, many rangelands have become overused. Limited pastures and the growing numbers of sheep have added to the overgrazing and

deterioration of the Bedu areas. Livingstone comments on nomads in different parts of the world:

Pastoralists are almost by definition marginal in most countries, especially where the state has risen and is based primarily in settled agricultural populations. Civil servants and policy-makers are likely to come from the settled, if not the urban population, and are very likely to see pastoralists through the historically conditioned stereotypes of the non-pastoralists (Livingstone, 1984, p.115).

Further issues are those such as the lack of working skills among many young Bedu who leave their families to become hired labourers in urban areas. For many, this means leaving behind their wives and children in the search for work elsewhere (Marx, 1990).

In the past, nomads specialised solely in herding animals. Their reason for keeping livestock was mainly to provide themselves with milk and milk products, meat and wool. Today, their cash needs have risen sharply with the introduction of technology and increased interaction with the town populations. The Jordanian Bedu economy has also changed in response to economic growth and the population increase at the regional level. The Bedu have increased their numbers of animals in answer to the growing demand for meat. Thus, the Bedu economy is not isolated; on the contrary, nomads have always maintained trade with townsmen.

For decades, nomadism has been in transition in the Middle East. Due to political and economic changes, in practical terms nomadic life in Jordan has almost disappeared. As Nesheiwat (1991, p.8) states:

Nomadism is an important historical phenomenon in Jordan, as in other Arab countries, due to its special socio-economic relations and socio-tribal organization with a limited political structure. Nomadism still exists, not only among transhumant and semi-transhumant populations, but also among the urban population, and has great importance in Jordanian social life.

Whilst government officials and development planners have argued that Bedu communities would have a 'better' life and a 'better' future, most Bedu have had an uneasy life resulting from government programmes. Many programmes failed or harmed pastoralists because they were based on urban judgement and the values of government officials. Researchers and development planners should listen to and learn from pastoralists' knowledge and experience, as Goldschmidt (1981, p.117) emphasises:

Leaving aside those ill-intentioned cases where prejudice against pastoralists inspired calculated harmful action, I note several basic flaws in planning for economic development. First, planners do not learn from their own mistakes. To see governments plans to make elaborate installations of water holes or to launch stock-reduction programs after these have been repeatedly branded as failures makes one wonder why writing was ever invented. Significantly, those engaged in planning have made no review of their own programs, such as this attempt from the outside. Second, there is a consistent disregard of pastoral peoples' own knowledge. The fact that they have made adaptations to a difficult environment that they know intimately does not faze the experts who believe they are armed with superior knowledge. The pastoralists' use of the landscape, especially their exploitation of a range of resources to counter the quixotic character of the climate is especially relevant here.

Briggs (1985, pp. 170-171) reinforces the argument that the experience and knowledge of the farmer is of some value and needs to be recognised:

The view that local knowledge is primitive, partial, biased or un-modern, and so of little if any value, is being increasingly challenged. For example, intercropping, long discouraged by extension officers as wasteful and inefficient, has been shown to be the most economically and ecologically efficient method of cultivation under certain environmental conditions, both reducing risk and aiding the maintenance of soil fertility.

Social values need to be understood before implementing any development projects. The Bedu have not only tribalism, but also a form of political and economic organisation, with social activities within and outside tribal affairs. Leybourne (1993, p. 34) comments:

In the Middle East, nomadism as a mode of living has always been associated with tribalism as a socio-political order, as no individual family or small group could be nomadic when this mode of living was hazardous, without adhering to a socio-political order like tribalism that would conduct and safeguard the mode of living. The social structure and organization of the tribal nomadic societies are based on a [hierarchical] system of family groups, and all social relations are governed by kinship relations based on blood relationships and common ancestral origin in a [patriarchial] system.

The Bedu of Jordan have not escaped the impact of modernisation and its effects any more than have the Bedu of Syria and Saudi Arabia. However, in Jordan, the tribal system is still strong, despite the fact that the nomads who used to wander with tents have almost disappeared. Their values and traditions have had an impact on Jordanian life as Abu Jaber and Gharaibeh (1981, p. 295) confirm:

Although the Bedouins constitute only a small percentage of the total population of Jordan (about 7 %), they have continued to play a major role in its affairs. Not the least of their diverse roles is that they have given Jordan a certain attractive image, in addition to the acculturation process, whereby many Bedouin mores, traditions and values have filtered throughout the Jordanian society.

In Jordan, the Bedu were nomadic until the beginning of the twentieth century, although most tribes held claim to particular grazing areas. From the early 1940s, factors such as the expansion of state control, led many young Bedu to join the armies in Syria and Jordan.

In Jordan, the army played a decisive role in reshaping the life of the Bedouins. Army recruitment of Bedouin youth started as early as the inception of the state in 1921. Since military or paramilitary traditions and mores were part of Bedouin tradition, the army became a major employer of the Bedouins, augmenting their meagre resources and teaching them new skills. More importantly, through the army's acting as a medium or as the transitory stage between nomadism and settlement, the Bedouins were slowly integrated into Jordan's society (Abu Jaber & Gharaibeh, 1981, p. 294)

In addition, the Jordanian government introduced programmes to settle Bedu on an agricultural basis and provide them with social services. Such projects were only introduced in the southern areas of Jordan. Some settlement projects ran into difficulties when Bedu were neither attracted to the cultivation of land nor to giving up grazing animals. Settled Bedu today keep their tents side by side with their new houses (Abu Jaber et. al., 1987). Both nomads and Bedu live in the eastern part of Jordan, the Badia. Settlement of the Bedu was tribal, self-generated, on land given to the tribe by the government as a means of encouragement. Being far from urban centres, Bedu have been able to keep their social values and norms different from other populations. However, in the late 1970s and early 1980s, large numbers of Bedu in Jordan were attracted to the Gulf States as workers. Improvement of transportation and communications increased the Bedu interaction with townsmen and reduced their isolation. Government projects such as road building also attracted many Bedu. At the same time, most Bedu found themselves able to shift from herding camels to livestock production and act as intermediary traders between different countries. Many families maintained sheep farming along with cultivation of the land. Other families were able to do both activities and had members who preferred to join the public services.

Today, Bedu dominate livestock farming, mainly in sheep and goat herding. In recent years, they have increased their flocks as a response to the high demand for red meat in the region. According to the Department of Statistics' figures for 1991, there were 2,671,317 sheep, 452,953 goats, and 10,867 camels in Jordan (Directorate of Statistics, 1991). Development of the infrastructure and the use of modern transportation has enabled Bedu to search for good pastures and better markets. As a result of geographical and political forces, the Bedu in Jordan are able to play an important role in the red meat market, especially in the trade between different countries.

The sheep grazing system falls into two dominant categories, the semi-settled and the nomadic. According to Nesheiwat (1991) the nomadic grazing system only exists in the semi arid land, the Badia. Most sheep and goat farmers are Bedu who are scattered throughout the arid areas of Jordan. Owners of flocks, according to Nesheiwat, move for most of the year and this type is a primitive type of breeding found only in the Badia (Nesheiwat, 1991).

The settled Jordanian Bedu at present outnumber the nomadic Bedu (Ministry of Planning, 1989). Accordingly, the Bedu who have persisted with pastoralism appear to be more affluent than before. With new found wealth in the region, they have been able, albeit with government subsidies, to balance comfortably a semi-nomadic lifestyle with a dwelling near the town. In addition, the increased numbers of settled Bedu have created a larger market which has been to the advantage of the nomadic Bedu. Bedu society in the villages is quite different from the nomadic way of life.

Less than 5 kilometres from the border with Syria, a different form of society has developed. The settlements have evolved into efficiently organised societies based on the active participation of the inhabitants. This has been made possible under the influence of army enrolment. The settlements are dependent on government aid, but have made steps towards self-sufficiency. Vegetable farming is important and animal husbandry also continues to contribute to the Bedu economy. The life of the animal owner has had to adapt to the new conditions; some flocks graze in the eastern Badia, but the majority are grazed locally around the villages. These Bedu have become more sedentary and, at most, semi-nomadic. Movement with flocks has become an element to distinguish nomads from sedentary people. Livingstone (1984, pp. 3-4) writes on this subject:

Given the regularity of most nomadic movement, this could give, in principle, an unambiguous means of classification, on the basis of distance. In fact movement is more complicated, sometimes involving all the household, sometimes part of the household, and sometimes mostly the herd with a limited number of herders. The owner of a herd may even 'entrust' his animals to nomadic herders while carrying on his own sedentary activities, so that his herd is fully transhumant while he is completely sedentarized. The extent to which a group pursues a pastoral 'life-style' will vary correspondingly.

Today, it is not easy to draw a line between settled Bedu and nomadic people, and it is even more complicated to try to distinguish settled from mobile Bedu in Jordan. In his analysis, Nesheiwat (1991) makes physical conditions the only elements to distinguish settled Bedu from nomads. The Bedu today do not represent great numbers and most of them no longer wander from place to place, but rather have mixed with settled populations and adapted to changes. However, the Bedu's life has taken on a new nature and has developed in varying degrees, although three forms of

Bedu society can be distinguished. According to Jabbur and Conrad (1995, 30-31) these forms are the following:

The first is a pure and firmly established type based exclusively on mobility, and those who practise it wander through the Badia looking for grazing and water for their animals. The second type, related to the first, represents a form midway between pure nomadic and the semi-settled type. The semi-nomads cultivate crops in the Badia, primarily barley and wheat, and then graze their flocks of sheep and goats deep in the desert before returning to the village. Even though these Bedu think of themselves as pure Bedu, with animal husbandry as their most important economic activity, they all cultivate crops to some extent. In the eastern Badia in Jordan, there is apparently great variation in both subsistence and settlement patterns. This way of life is very similar to that of the nomadic Bedu, with pastoralism centred on sheep and goats, and some cultivation of barley. However, they are more settled, with increasing concentration on growing crops such as barley, together with tomatoes and watermelons. In addition, most families keep a few sheep or goats. These people form a sedentary Bedu society which is neither totally tribal nor peasant. The third type is a settled type, and is not based on raising livestock. These Bedu have settled in urban areas.

The three types share similarities in social values and customs, and they only differ in physical terms such as movement and size of flock. Tribal membership is still important for all three types as it gives them certain rights over the strategic resources found in their territory, such as land and employment opportunities.

Area and population

As mentioned in Chapter one, the majority of Jordan is arid and semi-arid land, 81.3 per cent of which is defined as rangelands, receiving an annual rainfall of less than 200 mm. This area is known as the Badia of Jordan. The north east Badia is located in the Mafraq governorate and extends north and eastwards to the Iraqi border and comprises 25,930 km². The middle Badia extends into central and southern Jordan and comprises 9,634 km². The southern Badia is located in the Ma'an governorate and extends from the west to the Saudi border and comprises 37,096 km² (Map 1) (JBRDP, 1994 and Abu Jaber et al., 1987).

In Jordan, Bedu society is built on a tribal unity basis. The society consists of many tribes or *ashira*, which are the basic social organisations. These are subdivided into *qabila*, which are then further divided into *fakhds*. All of these units are inter-related through various degrees of ancestry. Jordanian tribes are distributed throughout different parts of the Badia. In the area of this study, which is in the north-east Badia, the main tribes are *Beni Khaled*, *Al-Sirhan*, *Al-Isa*, *Ahl Al-Jabal*, and *Al-Sardieh*. The middle Badia is inhabited by the *Beni Sakhr* tribe, and the south and south east by the *Al-Saidiyin*, *Beni Atiyeh*, *Al-Hajaya* and *Al-Huwaitat* tribes (Abu Jaber et al., 1987, p. 6).

Forty years ago, the Bedu represented the majority of Jordan's population and they were found throughout the Badia. In 1947, the total Jordanian population was estimated at 350,000, most of whom were Bedu. Most estimates of Bedu population today agree that numbers are low. The total estimated population of Jordan for 1994

was 4.24 million, with a population growth of 3.3 per cent, largely a result of Palestinian refugees moving to Jordan. An estimate for the Bedu population of the country is harder to determine, since this requires a clear definition of who the Bedu actually are. Nevertheless, the Bedu population is clearly in decline. A study conducted by the Ministry of Planning in 1989 reported that, as a result of their settlement, the Bedu who now remain in the Badia constitute only a small percentage of the Jordanian population. An estimate of their numbers indicates that there are 146,105, roughly 4.7 per cent of Jordan's total population, with only 5 per cent of Bedu still living as nomads (Ministry of Planning, 1989).

2.3 Bedu economy

Traditionally, the economy of the Badia was a near subsistence economy. A high proportion of what the Bedu consumed was home produced, and except for a relatively small number of essentials, what they did not produce they managed to do without. For considerable periods, the Bedu could therefore survive without the towns. Some of their household needs were met by a small amount of trade between Bedu, but in most of their living demands, each Bedu, and to some extent each household, was self-sufficient. Today, the Bedu emphasise this self-sufficiency, and like to stress their independence (Abu Jaber et al., 1987).

Livestock husbandry gave an assurance of survival, which insufficient sources of income, such as a government salary, did not. Bedu have always maintained their subsistence and livelihood from different sources. The economy of the Bedu has always relied on animal production from camels, sheep and goats. Livestock

production fulfils needs and demands and is considered a vital asset and security, as well as having socio-cultural functions. In the past, Bedu families were relatively independent of the markets. Their livelihood was maintained mainly by their own livestock production and occasionally by exchange. Feed, the main input for livestock production, was vegetation from common rangelands and crop residues from high-potential agricultural areas. The principal requirements of the families were satisfied through the output from livestock production. Each household represented at that time, in principle, an autonomous cycle of production and consumption. Bedu cash income was limited to revenues from sales of milk and livestock, the latter being by far the more important. The income from milk sales was generated to support domestic household needs and surplus of milk was sold in nearby towns. This income was used for small household expenses. Other important uses of livestock sale revenue were for purchases of clothing or jewellery, religious holidays and ceremonies.

Livestock production also has cultural value in Bedu society as well as being a source of wealth, subsistence and an occupation. Camels and sheep are regarded as a form of wealth, nobility and prestige. In other words, in Bedu society a large flock signifies high social status. Bedu associate and identify themselves closely with their animals (Abu-Rabia, 1994). Bedu culture and values are strongly reflected in their production system. Animal slaughter is an example of when Bedu rely on their self-production to meet social customs confined to community occasions such as acts of hospitality, marriage and death.

After settlement took place, cash needs became a regular part of life in the Badia. Their demand for cash increased to meet house construction or house maintenance, schooling expenses, food supply etc. It is simple for any Bedu to market his animals directly, so everyone sells as many as desired. These are usually lambs, which are transported safely by trucks and sold directly to middlemen or in Mafraq, the outlet market. It seems highly probable that in the past, few animals were sold for cash. On the whole, most Bedu marketed directly, and most of what was marketed was bartered with visiting traders.

Some families, especially nomadic ones, have livestock raising as their main employment and livelihood. Several have never learned any other occupation or trade, and caring for livestock best suits their way of life. Some are limited because of age or infirmity, and find it easier to raise livestock than engage in other types of work. Another factor of success in livestock raising is the number of family members and available manpower enabling the family to invest labour in raising livestock, in addition to other gainful employment. The greater the number of household members, the greater the opportunities to benefit from them in a variety of ways. Rearing livestock is characterised as capital intensive, requiring a certain amount of labour from family members. This labour requirement for livestock production depends on the size of the herd. Demand for labour increases during the lambing season and so generally requires the participation of all family members.

The importance of livestock production in the Badia is underlined by the poor job opportunities. According to Abu Jaber et al. (1987), the rate of employment in the

Badia was 60 per cent for males and 15 per cent for females respectively. Taking into consideration, the Bedu low household income, US\$ 288, the continuity of livestock production is vital to the Bedu (Abu Jaber et al., 1987).

2.3.1 Means of income

The family income is derived from animal breeding, representing 60 per cent of the total income, with other agriculture representing 10 percent, and other family activities and employment, 30 per cent of total income (Nesheiwat, 1991). Households in the Badia range from those which have neither animals nor land, to those with two hundred to five hundred *dunum*¹. Personal earned incomes range from casual unskilled Badia labourers, shepherds, for example, earning JD² 80 or less a month, to established skilled migrant labourers in the Gulf state earning perhaps JD 600 a month. Household income comes from farming plus contributions from earning members. Bedu are found to be vague and inconsistent about income, partly because no one is willing to disclose details of resources to anyone else, and partly because most of them do not think in terms of a periodic income. Whilst they budget to meet particular expenses from particular resources, there is no occasion in the Badia when a head of a household adds up all that comes in, and sets it off against all that goes out. Moreover, both farming and non-farming incomes are liable to fluctuate wildly from year to year, so that no one has an average annual income (Al-Adwan, 1990).

¹ 1 dunum equals 0.1 hectare

² 1 JD equals \$1.45

2.3.2 Animal production

Animal production provides a considerable cash income, besides providing milk, meat and wool for the household. Oakeley, (1997) gives an estimation of sheep production in the Badia. He indicates that sales of lambs represented 50 per cent and sales of milk represented 23 per cent of income. The total output per head was estimated to be around JD 70, an extremely optimistic estimate. However, the same study indicates that costs are high, since sheep live on supplementary feed most of the year, putting the figure for costs at about JD 50. It should be mentioned that these calculations were made before the removal of the feed subsidy by the government in late 1996.

2.3.3 Arable Agriculture

Some of the Bedu are involved in arable agriculture, and derive some additional income therefrom, despite the low rainfall and the poor quality of soil in the Badia. A very limited irrigated farming system has been introduced in some parts of the Badia. This type of farming has created labour opportunities, especially for females. Apart from this type of farming, agricultural income constitutes a relatively insignificant part of household income.

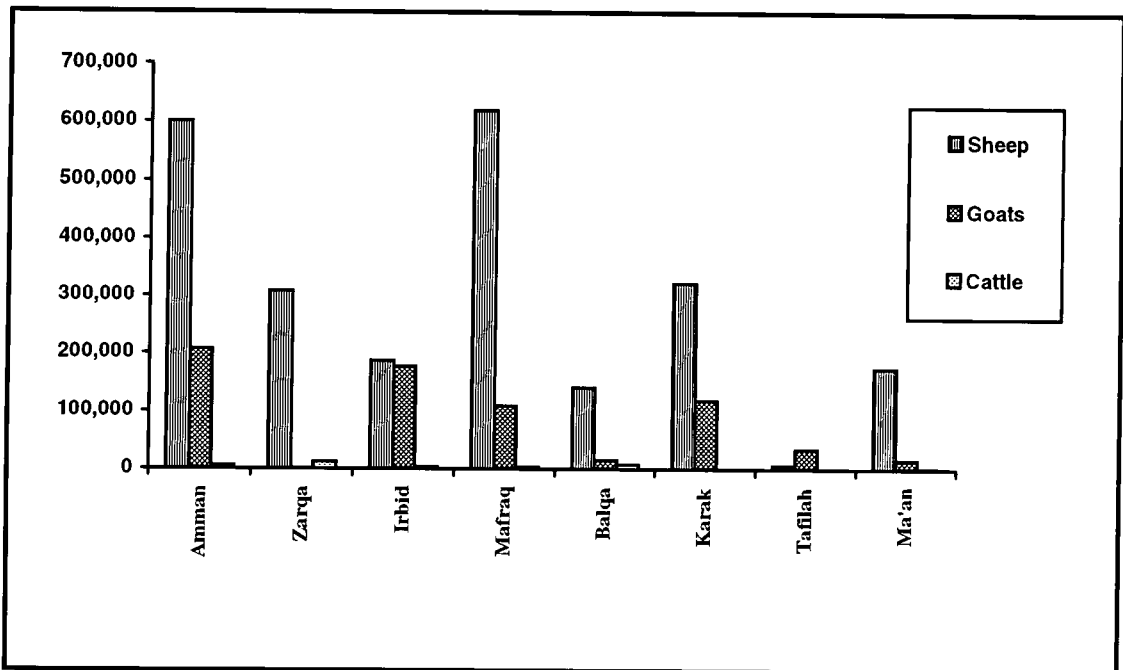
2.4 Bedu economy in the national setting

The interdependence between the Bedu and the urban population presumably represents a balance of power between these two branches of the economy. The urban people use up enormous quantities of meat, milk and milk products from the Bedu. In Jordan, the Bedu own about 74 per cent of sheep and 70 per cent of the country's animal products. The remaining 30 per cent are largely owned by farmers,

merchants, and civil servants. (JBRDP, 1994). One third of the sheep and goat production in Jordan is based in the north-east Badia alone (Mafraq governorate) (Figure 2.2). For example, in 1995 the Mafraq governorate's contribution to national output was about 27 per cent for lambs and 13 per cent for kids. During the period 1994-95, the Mafraq governorate produced about 444,000 head of lambs and kids, valued at over JD18 million (Oakeley, 1996a).

In the past, rearing animals was mainly for basic household consumption, whereas now it has become a source of income and employment, being both more accessible and more reliable for Bedu than other means of income. This latter point is emphasised by the 1988-89 economic collapse in Jordan which resulted in the average income per head falling from the 1985 sum of \$1,570 to \$980 in 1989 (The Economist Intelligence Unit, 1993/94). Furthermore, the 1992 figures show that for a typical family of 6.8 persons, the abject poverty line was JD 61 and the absolute poverty line was JD 97 for a family not paying rent, and JD 119 for a family paying rent. As a result, the percentage of families below the abject poverty line increased from 1.5% in 1987 to 6.6% in 1992, while the percentage of families below the poverty line increased from 18.7% in 1987 to 21.3% in 1992. (Ministry of Planning, 1993-1997).

Figure 2.2: Number of livestock in governorate, 1995



Source: The Ministry of Agriculture, 1995

2.5 Conclusion

Livestock raising is considered a profitable activity in the view of the Bedu, because in addition to providing them with food, wool and goat-hair, it enables them to fulfil obligations of social and religious ceremonies, and strengthens their feelings of identity. The livestock economy will advance and be a success among the Bedu when they become both flock owners and operators, not relying on hired shepherds. Raising a flock demands professional knowledge and devotion, and long working hours throughout the year. They consider livestock farming as their major occupation. Since this activity is not too demanding on Bedu time, and since they are generally interested in herding strategies and guidelines, this leaves them with plenty of time to participate in social and tribal affairs. Production in the Badia involves the combination of several inputs. These inputs are the animal species, pasture, labour and

management. Keeping a small flock serves as an economic reserve, capable of being realised at any moment. If a Bedu loses his job in town, he can always move with his flock, utilise grazing scattered over the Badia and adapt his life to the needs of the flock and also quickly increase its size and make it his livelihood to provide for his basic existence.

Chapter Three

Methodology

3.1 Introduction

The Bedu livestock system comprises interacting environmental, biological, cultural and economic factors. An analysis of constraints that does not include a consideration of these interrelationships is unlikely to lead to a useful understanding of the Bedu livestock marketing system. Attention therefore must firstly centre upon the household characteristics, and the household member who is usually the head of household as being the key decision-maker with regard to production and marketing practices. Secondly, attention must also focus on the livestock trader, who plays the principal marketing role at the first stage. Additionally, if the existing system is to be fully understood, consideration has to be given to national policies and regional socio-economic circumstances.

As mentioned in the introductory chapter, the overall objectives of this study are: 1) to explore and analyse the marketing of livestock (sheep and lambs) in order to determine the factors that affect producers' marketing decisions; 2) to describe and analyse the livestock market channels and processes in terms of the organisation and role of major market participants; 3) to provide an analysis of farmers' market behaviour and problems; 4) to suggest policy recommendations and an outline of research needs for analysing livestock marketing problems in the Badia of Jordan in the longer term and 5) to contribute to the whole body of research data and materials

on livestock marketing and farmers' decision making in similar areas of the country and elsewhere.

In this chapter emphasis is placed on the choice of the study area, questionnaire construction, sampling, interviewing producers and traders, other methods employed in accumulating data and data analysis. This chapter will provide a description of the methods used for primary data collection in the field and the data analysis instruments.

3.2 Choice of the study area

The Badia region is well known within Jordan, both in terms of land area and availability of resources, and its potential for development. A traditional livestock production system has been the principal economic activity of the Badia population for centuries. Due to the state extension authority in the Badia region, the improvements in infrastructure and the introduction of modern technology, the Bedu's lifestyle has been reshaped in many ways.

The Jordan Badia receives low priority in national and international policy initiatives, despite its economic and structural vulnerability. Livestock production accounts for approximately 38-45 per cent of the gross value of agriculture production, despite 74 per cent of livestock being found in the Jordan Badia. Furthermore, over 80 per cent of Jordanian land can be utilised for grazing, indicating that livestock is an important part of agricultural production. The study area, the Badia region of eastern Jordan, covered by the joint research and development project, extends for some 11, 210 km² and constitutes over 15 per cent of the total Badia area of Jordan. The Badia

Programme area represents an important part of livestock production in Jordan, and accommodates about 107,000 sheep and goats (Ministry of Agriculture, 1992). The total population of the Programme area is estimated to be 15,318, divided among 34 villages with 152 additional *beit sha'ar* (tents) (JBRDP, 1994). Despite the fact that many households have incomes drawn from mixed sources and that the majority of people in the area are now sedentary, pastoralism continues to play a highly significant role in the economy. Whilst the population of the Badia cannot simply be described as pastoralists, most of the people in the area depend, at least in part, on livestock for their livelihood. In twenty two per cent of households, livestock forms the main source of income, while thirty five per cent of the people list livestock production as their major activity (JBRDP, 1994).

3.3 Data requirements

Background information on the household and livestock organisation, farmers' sales, the market and market participants is necessary in order to fulfil the aims of this study. This includes general information on the organisation of production, markets and marketing systems. Information on production is required since this relates to marketing practices and decision making processes. Farmers' sales information relates to the sale of animals, reasons for sale, access to market information as well as information on the nature and price of sales.

Information from traders relates to the identification of the major participants in the marketing chain, identification of major outlet markets, price information, sources of supply, transport costs, sales destinations, the importance of regional markets, cross-

The interview may be used in conjunction with other methods in the research undertaking. In this connection, Kelinger suggests that it might be used to follow up unexpected results, for example, or to validate other methods, or to go deeper into the motivations of respondents and their reasons for responding as they do.

3.5 The questionnaire

The questionnaire is an important instrument through which data are accumulated, particularly for socio-economic research. A questionnaire is a package that presents the questions and ultimately contains a record of responses for each individual respondent. A questionnaire is used to collect data in areas beyond the physical reach of the observer, and is also used as a data gathering technique in structured interviews. By definition, a questionnaire is a list of questions through which information is acquired from a selected group. Evans (1978, p.56) defines the questionnaire as:

..questionnaire is a series of questions dealing with some psychological, social, educational, etc., topic or topics, sent or given to a group of individuals, with the objective of obtaining data with regard to some problems; sometimes employed for diagnostic purposes, or for assessing personality traits.

Kinsey (1988), Howard and Sharp (1983) and Cohen and Manion (1980) divide questionnaire administration into three types:

1. Mailed or postal questionnaires
2. Personal interviews
3. Group administered questionnaires

In this study personal interviews were employed. According to Baker (1991) personal interviews enable the researcher to obtain more specific answers and repeat a

question if the respondent misunderstands. Moreover, personal interviews allow the researcher to have a better response rate compared to mailed questionnaires. The researcher can also observe non-verbal behaviour of respondents which might be of use to the research questions. Finally, the researcher can start the interview with a question that suits the environment of the discussion.

However, the questionnaire survey is open to criticism, the main critique being that it is inefficient in generating qualitative data.

Initially, a case study was considered, as this would have provided valuable insights into their decision-making. However, conducting such a case study needs both time and close supervision, which in turn requires that the study be limited to a particular settled or nomadic group. This could have affected opportunities for observing the market and so reduced the chances of relating marketing decisions to variables such as flock size and distance from the markets. Concerning the quality and validity of a sample Sudman (1976, p. 26) states:

Unless one is dealing with a small special population in a single location, a limited sample does not usually represent the total universe. If one observes the same results in several locations with widely differing populations, however, one has a great deal more confidence in their generality than if the sample is only of a single location. The greatest relative increase in quality is achieved by increasing the number of locations from one to two, and comparing the results from the different sites.

As producers are widely scattered over the Programme area, a personal interview questionnaire was therefore proposed. This allowed more time to travel along the marketing chain and to meet more participants in the markets. When determining

sample size, Krejcie and Morgan (1970, p.610) state that "as the population increases the sample size increases at a diminishing rate and remains constant at slightly more than 380 cases" (see Appendix 4). On the basis of their argument, in this study the sample size should be over 200, as the total number of households in the study zone is over 800, distributed among 34 villages in a total area of 11,210 km² (Ministry of Agriculture, 1991/1992). However, according to Baker (1991), constraints such as time and money, may require the researchers to compromise between optimum and acceptable levels of confidence in the sample size. The suitable sample does not depend on the size of the population nor does it have to include a minimum percentage of the population. There are several factors which need to be considered when determining the size of the sample. Some of these factors are that the sample size should not exceed the work capacity of the researcher, and that if great differences exist between the elements of the population, the sample size should be large.

However, as an interview with traders was to be carried out along with the questionnaires, time did not allow for interviewing more than 200 farmers. In order to gain more confidence in the survey results, it was decided that the sample should be selected from different classes of farmers and this in turn would take into consideration distance from markets, size of flocks and location. Based on flock size and number of sheep per household, a stratified random sampling procedure was seen as the best method for achieving a representative sample.

3.6 Selection of the sample

According to the Ministry of Agriculture, Mafraq Branch, the number of livestock holders between 1-100 represent 50.0 per cent, 101-200 represent 20.5 per cent and 201-300 represent 9.5 per cent. Since a stratifying sample based on flock size would give better results, it was better to have this than a random sample.

The questionnaires for producers were aimed at evaluating their sale decisions and describing livestock marketing. Furthermore, the questionnaires were directed towards collecting detailed information on producers' behaviour and examining household production as well as livestock marketing patterns. The present study required information from producers on price, reasons for sale, their relationships with traders and access to market information.

Although environmental conditions, experience and tradition have developed an overall uniform Bedu husbandry system for the management of sheep and goats, individual producers have nevertheless made particular modifications to this system according to their aspirations. The number of sheep and goats in flocks reflects not only the farmer's preference for either species, but also the suitability of these species to socio-economic conditions in the different parts of the Badia.

For the purposes of this study, the decision maker in the household for management of flocks was classified according to the Directorate of Statistics, 1991/1992 Census' definition of the owner of livestock:

The owner: is a person who owns the livestock, plans the investments, decides the everyday matters regarding the ownership of such stock. He bears full economic responsibility if he alone owns this livestock. If he shares this stock with others he shares the responsibility with them. In this census the owner of livestock is regarded as such if he owns one or more heads of animals such as sheep, goats, cows and camels (Directorate of Statistics, 1991/1992, p.2).

The owner of a flock is also seen as the head of the household who is responsible for household affairs. The household is defined in this study as including all members who are the direct kin, [wife (s), son (s), daughter (s), brother (s), sister (s) father and mother] of the head, and family members who work away from the household, but nevertheless invest in the household. Household decisions focus on where to water animals, where to migrate, and which animals to sell for cash. Attention therefore must centre upon the production socio-economic condition of the household, this being the key decision-making unit with regard to Bedu production and marketing practices. Additionally, if the existing system is to be fully understood, consideration has to be given to national policies and regional socio-economic circumstances.

There was a choice of three sources of information concerning livestock owners in the Programme area from which to select the sample: The demographic and socio-economic survey for JBRDP, 1992-1993, Campbell and Roe, 1994-1995, and the Department census of 1991/1992.

The JBRDP's survey covered the whole Programme area and the main aim was to collect information on the total population count together with demographic, socio-economic, household and housing data. Early in 1994, I examined the survey data and tried to extract the number of livestock owners. It was later realised that these

data gave no information on the actual number of animals in any household. Moreover, the questions referring to livestock production were included with the section concerning the income of households, a sensitive subject, and so led to unreliable results.

The other choice was information collected by Campbell and Roe on a group of 105 livestock owners. The selection of livestock owners in this survey was biased towards households whose main source of income was livestock production. Their results indicated that 61 per cent of farmers interviewed moved with animals and the mean distribution was over 300 head. It was clear that this study was more oriented toward large flock holders. It was therefore decided that in order to have a sample taken from the whole area, it was necessary to rely on the Department of Statistics Census.

The target population for this study was chosen from the livestock census conducted in 1991/1992 by the Department of Statistics. This census, covering all governorates of Jordan, was conducted during a one day period. Its main aim was to provide detailed data considered necessary as a basis for plans which may serve the development of this sector (The Department of Statistics, 1991/1992). The census collected information on the sex and age of animals and farmers' reasons for keeping them, as well as providing the names and addresses of animal holders (Appendix 1).

This study used the livestock census in order to categorise producers according to size of flock. According to the figure obtained from the Mafraq Branch/Ministry of Agriculture, livestock holders form different categories of flock size. It was found that the majority owned less than 100 head of animals. In order to have a

3.7 The content of the questionnaire

The questionnaire was aimed at investigating farmers' sales and access to market information. This entailed collecting information on prices, main reasons for selling, and farmers' relationships with traders.

The questionnaire was composed of six main sections: A, B, C, D, E, and F (see Appendix 3):

- Section A had 8 questions. For each interview, village, date, farmer's name, respondent's name, main and minor occupations, land owned and flock location were recorded. The purpose of this section was to provide the researcher and the reader of this study with a concrete background of the study subjects.
- Section B contained questions about livestock-background information. Farmers were asked about the size of flock, whether they were the sole owners of the animals, and about the breed of animals they raised. Information obtained from these questions related to the selling process in terms of the decision maker.
- Section C contained questions designed to provide information relating to the production of livestock, such as number of ewes lambed, number of lambs born, age of weaning, and factors affecting decisions to wean.
- Section D contained questions about access to market information. Farmers were asked whether they collected price information before they made the sale, and if so, how they obtained such information. Farmers were asked on what basis they

usually sell, and the source of price information if acquired. Subjects were also asked for their opinions about prices in the current year compared to the previous year, and what factors could account for any perceived differences. Sale on credit and favourite places of sale were also the concern of this section. Farmers were asked about sales not taking place after a visit from traders. For those who claimed they had been visited, they were asked to state the number of these traders and the prices that were offered. Section D also asked about the sale activities of the household conducted during the current year. Farmers were asked to identify the buyer of their animals by location. Other questions asked about the location of transactions. The exact nature of the financial arrangement was determined by motivation for the sale. Information on the date of sale, price received, type of animal sold, number and age of animal sold was also recorded. Farmers were requested to state their reasons for sale.

- Section E was included to provide information on the main occupation of household members over the age of fifteen. Information on relationship to the head of the household, occupation, place of work, frequency of payment was also collected. This section was included to provide some insight into the income of the household, introduced in the last section of the questionnaire.
- Section F dealt with the income of the household. It was realised in the earlier stages of this research that information on income was not easy to obtain via direct questions. Therefore in sections E and F indicators of income were asked for rather than definite figures.

I also noted down any other details made by the respondents during the interview. Most details were concerning farmers' attitudes towards traders and government officials, as well as general complaints.

3.8 Interviews with traders

The interview is another method by which information can be collected. Interviews have been used in a number of recent market studies to examine the social relations of exchanges in markets between traders and producers (Magrath, 1992). There are three types of interview that can be used as research tools. Interviews can be structured or unstructured, recorded or unrecorded, conducted with subjects individually or in small groups. In this study it was decided to adopt an unstructured interview to collect information from subject traders since they are fewer in number than farmers. This type of interview also allows for group discussion and encourages participants to discuss important marketing issues.

In an unstructured interview, there is no formal questionnaire. Instead, a series of topics is introduced from a checklist, and discussed in any order that seems natural. Instead of extracting identical items of data from everyone, the interviewer encourages respondents to talk on topics about which they have some say. Moreover, an unstructured approach may seem friendlier and less intimidating (Cohen and Manion, 1980).

One reason for using the unstructured interview in the present study was because interviewing subjects can be highly sensitive. Information needed to be collected from

debts. I was therefore able to note down all the sale details either in the house or at the market.

As there was no published information on livestock marketing available, preliminary information on the physical market infrastructure, the identification of the main market participants, and the nature of the market process had to be gathered. Another problem was that of selecting traders for interview. In most cases, selection of research sites, subjects and dominant issues for the study were made with the intention of giving the broadest sampling possible that would yield results relevant to planners. The intention was to include different types of participants at the farm-gate level.

The unstructured interview was the main tool in obtaining information from traders. Initial work with traders began where time and place allowed. Traders were interviewed in groups ranging from three to seven traders at a time, either in market sites or at the home of one of the traders.

3.9. The pilot study

Having prepared the draft of the questionnaire, it was decided to test it in small-scale pilot studies so that maximum accuracy could be ensured. The first draft of the questionnaire was designed and piloted on twenty-five farmers and five traders outside the study area. Livestock marketing data were collected from both producers and traders concerning various aspects of livestock marketing behaviour.

The fieldwork for the pilot study took place in the summer of 1994 from 8th May to 24th September. The main aims were to carry out a pilot study and design the first draft of a questionnaire, and to travel through the study area visiting markets in urban and rural areas. The first two months were spent meeting farmers, traders, customs departments and animal feed distribution centres. In the second two months the first draft of the questionnaire was designed and piloted. The data from the questionnaires were also coded and computerised using the Statistical Package for Social Science for Windows (SPSS). The overall impression received from conducting this pilot study was that farmers were more open and willing to share information than traders.

After the piloting of the questionnaire, some unclear questions were dropped and others were rephrased and redesigned. Two sections concerning milk production and the cost of production were cut for the following reasons: 1) to shorten the questionnaire and 2) two other researchers had begun investigating the above two subjects in greater depth.

One of the principal concerns was to produce a short and simple questionnaire. Modifications were made where necessary so that the stated objective of providing valuable information in an area which has only recently become the subject of social research studies, could be attained.

Before commencing the field work, I met with experts in the Geography Department of Durham University, and on their advice some modifications were made concerning the design of the questionnaires. I also benefited from my experience as a local citizen

of the study site to assess the factors which were of concern to the research. Being a member of a family involved in livestock farming, I was able to draw up an appropriate set of criteria for evaluating the material in the various sources. As a member of staff in the JBRDP, I was provided with transport. Visits to the Ministry of Agriculture and its branches in the study site were made to identify households and their size of flocks.

3.10 Treatment of the data and selecting tests of measurements

After the field data had been collected, the next step was to code them and assign numbers to allow them to be processed and analysed statistically. Each variable, sample area and household was given a code number. Using SPSS and STATA, the questionnaires were fed into the computer. The choice of analytical methods and statistical tests were appropriately varied, reflecting the diverse nature of the research questions. Every attempt was made to document the interview questionnaires as accurately and carefully as possible. It should be mentioned here that seven questionnaires were dropped from the analysis for various reasons. For example, two families left the area because of a blood-feud, one farmer could not give any information because his father was taking care of his animals while he worked as a bus driver, and another household gave up farming after the husband died.

The analysis was centred on three groups of variables related to the marketing decisions of the producers: household characteristics, sale of livestock and market conditions. Three of the research questions needed statistical techniques to be used for examination and interpretation. The first was the determinants of motivation for

the sale of animals; the second, the determinants and access to market information and the third, the attitude of respondents toward the present marketing system.

In order to reach a satisfactory result, two points had to be considered: the different levels of measurements and what was intended to be obtained from the data.

Clarifying the importance of the first point, Norusis (1987, p. 81) argues that:

..the way in which you analyse your data depends on how you measured it. Certain analyses make sense with certain types of data. Even something as simple as interpreting cumulative percentages requires you to know what scale your data are measured on.

Consequently, since some of the data collected in this research were nominal and ordinal in nature, the suitable statistical tests were non-parametric data from nominal and ordinal data variables. Siegel (1956, p.33) emphasised that:

..if data are inherently in ranks, or even if they can only be categorised as plus or minus (more or less, better or worse), they can be treated by non-parametric methods, whereas they can not be treated by parametric methods unless precarious and perhaps unrealistic assumptions are made about the underlying distributions.

Parametric statistics were therefore ruled out, and non-parametric methods were adopted in this research. Non-parametric statistics do not require as powerful a level of measurement as that needed to serve the purpose of a parametric analysis. As highlighted above, the selection of proper tools among the many non-parametric tests is determined by the aims and intentions of what should be worked out from the data. After careful consideration of the various non-parametric tests, the tests deemed

suitable and reliable to address the inquiries and questions of this research were cross tabulation and frequency.

The Pearson correlation coefficient test was also used to identify the degree of association between sale variables. Price received, market information, sale on credit, age, type and number of animals sold, date of sale, buyer, and place of sale were considered the subjects of this test. Frequency tables and cross-tabulations were used for variables such as flock locations, income, place of sale and reasons for sale.

Frequency tables were also used to illustrate the respondents by area in relation to their various demographic and socio-economic attributes. Cross-tabulation was included here because it is one of the simplest and the most frequently used ways of identifying the presence or absence of a relationship between two variables (Ebdon 1977). Cross-tabulations are concerned with data that have various combinations of characteristics and usually consist of counts of people and places (Upton, 1978). Such data emerge naturally from summarising surveys and analysing the results of questionnaires. The results of a sample population in such circumstances are cross-classified according to sets of categorical variables such as age and sex.

Analysis of price in relation to sale variables proved difficult because of the variation in price data and the types of variables used with price such as time of sale, date of sale, reasons for sale etc. Moreover, the aim was to determine which of the sale variables had the greatest impact on price. Following advice given by Dr Cox, a statistics expert in the Geography Department at Durham University, the price

variable was adjusted according to reasons for sale and type of payment. His advice was to use analysis of variance and box plot graphs. Hedderson, (1987, p.119) emphasised that:

Analysis of variance is especially appropriate when the dependent variable is an interval measure and the predicting variables are nominal. It is also useful when the predicting variables are interval but nonlinear in their effect

Analyses of variance were employed to investigate for the major variables affecting the variation in prices received by households. Price was tested against age, information, payment, place, reasons for sale and type of animals sold. The analysis of variance better explained the variation in prices, which was largely due to the effects of interaction between different variables.

3.11 Data limitations

Subjects were often sensitive to certain areas of investigation. Because of economic and cultural reasons, Bedu hesitate to share information with others concerning affairs such as the size of their family, their income, and the number of animals they keep. Lack of accurate records leads to heavy reliance on what people choose to say, and so under-reporting or over-reporting by farmers on sensitive topics is likely to occur. Since the study area is close to the borders with Syria, Iraq, and Saudi Arabia, many people in this area were said to be involved in illegal business. Whilst producers as well traders clearly did not like to discuss matters related to such issues, they were more willing to comment where no indication as to their own involvement in any informal regional trade could be detected or proven.

Furthermore, the study area has been heavily researched in the recent past. To give an example, the survey conducted by the JBRDP in 1992/1993 covered almost every household in the area, and so in one way or another, has made its impact felt on any research taking place thereafter.

Traders sometimes did not like to discuss either the place of purchase of animals or the amount paid or received from trade. Clearly, traders would want to keep to themselves any information that would lead to any calculation of their profit margins. The unstructured interview method was therefore adopted with traders and different issues of marketing were raised for them to comment on. Attempts were made not to direct any personal questions to traders. Taking into account the fact that this research was the first of its kind to be carried out in Jordan, it was hard to avoid a number of shortcomings. The literature on livestock marketing is very limited and the statistical data available are often of doubtful quality or are more likely to be merely estimates. Although the collection and compilation of data have improved dramatically in recent years, statistical data are still stigmatised in terms of variability, political orientation and inconsistency even among government sources.

A study of the Bedu household economy and livestock marketing using collected data on household resource ability and management faces several difficulties. The quality of the data is a crucial problem. Under- and over-reporting springs from the fact that some people may appear to exaggerate events for one reason or another in the hope that they will make some gain. An example of this was respondents over-reporting the problem of shortage of feed and low prices of animals, believing that I was a

government employee who would then transfer their claims to the authorities in the hope of obtaining more facilities and help. On the other hand, other respondents showed reservations in terms of the number of animals they had or the size of the family, assuming that if I were a government employee, I would cause them payment or return with further questioning.

Furthermore, bias is likely to occur where false information is provided by farmers, either by not understanding the questions posed or by not being honest when answering the questions.

3.12 Conclusion

With the extreme shortage of secondary data available, a decision was taken to carry out the fieldwork in 1995 using questionnaires and unstructured interviews. Two hundred livestock farmers were the subject for the questionnaires and nineteen traders were interviewed. Preparation and visits to the study area took place in the summer of 1994. During the same year, a pilot study was conducted. The decision to use these two techniques was justified by the difficulty in gathering data from a complex market environment. Other information on which this study is based has several sources: 1) the 1991-1992 census; 2) the JBRDP survey 1992-1993; 3) Campbell and Roe, 1995 and 4) published and unpublished material of researchers working for the JBRDP. The data set was rich because of its large base and detail, especially the farmers' survey and traders' interviews.

Chapter Four

Review of theoretical concepts and literature

4.1 Introduction

This chapter relates conventional and social marketing concepts and the role of agricultural marketing in developing countries. Discussion of the role of agricultural marketing in the development process and the types of approaches used to examine this role will be presented. This chapter also selects the relevant approach for investigating the livestock marketing issues in the Badia of Jordan.

In the literature, there is some debate over the meaning of the market and marketing, in that they mean different things to different people. A market can be a geographical area where people meet for the sale and purchase of goods. The term market can also refer to a geographical area where supply and demand regulate a single price. Acharya and Agarwal (1992) state the following conditions are required for a market: existence of goods, business relationships, buyers and sellers, and the demarcation of a selling area. Kohls and Uhl (1985, p. 9) define a market as "an area for organizing and facilitating business activities". They indicate that although we might think of a market as a geographical area, when it comes to analysis, the market may be defined with respect to a place, product, time and level.

Researchers' definitions of the market vary and the choice of definition may depend on the area to be researched. For example, Kohls and Uhl (1985, p.167) explain the different meanings of the word market as follows:

In economic analysis, the term *market* has a special significance—that of an arena wherein all buyers and sellers are highly sensitive to each others' transactions. What one does affects the other. In this market, all buyers and sellers must be able to communicate with one another, must be capable of exchanging products with each other, and must be exposed to similar price signals.

Other authors stress the difference between the two terms market and marketing.

Hart (1992, p. 162) states:

The 'market' is a term describing aspects of the demand situation for a commodity. It commonly equates with the level of aggregate demand, but can have wider connotations, being used to describe arrangements which exist to allow transactions to take place between buyers and sellers.

Various aspects of the market can be considered, for example, the emphasis on geographical markets in order to assess the efficiency of their structure and links.

Kohls and Uhl, (1985, p.168) maintain:

Geographic markets may be local, regional, national or international in scope. Bulky products such as hay have a small geographic market area because high transportation costs prevent distant buyers and sellers from trading with each other. Milk and livestock can be transported more economically so they tend to have regional or national markets.

The growing role of marketing came as a result of the growth in economic complexity surrounding transactions within society. For example, in industrialised societies, transactions are no longer governed by social and kinship obligations, but are based on economic calculations of individuals, whereas in some traditional societies, transactions may still remain attached to these obligations (Alexander, 1992).

Since the livestock markets in the Badia have their special environmental circumstances, in many cases none of the above definitions can be applied. Neither livestock markets nor transactions in the Badia are limited to one particular place or time, nor are they determined by the presence of many people, nor do they require the presence of animals in the site in some cases, although there are outlet markets which are limited to a specific place and time.

The most important concern for this study is that the definition of a market should include the producers and traders. It should also take into consideration the form of communication between them. Reusse (1993, p. 363) defines terminal livestock markets as follows:

Livestock markets, i.e. habitual meeting places of potential sellers and buyers of livestock, have established themselves at all places of relative significance. Their location appears to be determined by the presence of major stock route junctions or terminals, major watering points, or major centres of consumption.

The definition of livestock markets applied in this study includes any person or group of people establishing exchange relations in any place and at any time. This definition does not ignore the fact that some livestock markets may be attached to a specific geographical area, or that many markets may or may not exist in a particular place or city. It is commonly assumed that every seller will try to sell at the highest possible price, and that every buyer will try to obtain a product at the lowest possible price.

For this study, livestock markets will be defined as meetings between one or more potential sellers and buyers of livestock, who place themselves at most sites where animals are found.

There are many expressions for the term market system. For example, it may refer to all those characteristics of the market focused on the nature of competition and price. Other authors focus on the actors' behaviour in the market. Acharya and Agarwal (1992, p.16) define market structure as: "...those characteristics of the market which affect the traders' behaviour and their performance". Characteristics of certain markets become very important elements in shaping traders' behaviour and buying strategies. In the present study, each livestock outlet market has its own unique conditions that in one way or another result in different attitudes and behaviours in trading. For example, during the pilot study for this research it was found that traders (speculators) in the Mafraq outlet market have developed a strategy of approaching sellers, mainly farmers, by taking advantage of the bargaining procedure. As most of these speculators are well known to each other, only one will deal with the seller while the rest form a pressure group to persuade the seller to agree on a price. In contrast, this type of phenomenon does not seem to take place in the Amman outlet market because of the existence of the *Dallal* (dealers), and in Ruwayshid most speculators are known to producers.

Marketing, in general, refers to the activities that take place in the market which involve the transfer of goods from producers to consumers. It is the collective term used to describe transactions between market participants who are attempting to

maximise a profit or maximise utility at a low price. Marketing then involves many processes including business functions, production and production decisions in their broadest sense.

Even though there is no single accepted definition of food marketing, Kohls and Uhl (1985, p.8) introduce the most encompassing definition when they refer to the term food marketing as "*..the performance of all business activities involved in the flow of food products and services from the point of initial agricultural production until they are in the hands of consumers*". Hart (1992, p.162) summarises:

The term 'marketing' describes the sequence of processes which link producers and consumers. It involves the performance of all business activities involved in the flow of food products and services from the point of initial agricultural production until they are in the hands of consumers.

This definition leaves room for groups with varied interests to view marketing differently. How farmers view their businesses depends very much on their personal aspirations and opinions, and whether they are production-orientated or marketing-orientated. Barker (1989, p. 20) creates a distinction between the two and states that a production-orientated farmer: "*..is the one who regards the major part of his business as being concerned with the goods which he wishes to produce*", while the marketing-oriented farmer is the one who: "*..will endeavour to produce goods which can profitably be sold, giving due consideration to the likelihood of profit before production is undertaken*". Farmers, in general, do not see marketing as a separate issue, but rather as a part of their farming system. Whilst Barker is referring to

farmers in a commercial production system, his distinction can be applied, to some extent, to production in transition such as in the Badia.

Marketing, according to Kohls, and Uhl, (1985) involves the functions of buying, transportation, stockholding and storage, processing and packaging, formulation of convenient assortments geared to consumer food requirements and the sale of products to consumers. Therefore, marketing can comprehensively be seen as a process involving management principles and techniques that facilitates the planning and execution of conception, pricing, promotion, distribution and flow of ideas, goods and services satisfying both individual and organisational objectives.

4.2 Role of agricultural markets in development

Food supply is one of the main roles of agricultural production. However, agriculture is only able to contribute to national development when food and other agricultural products are marketed effectively. The role of marketing in national development is therefore as important as agricultural production. The importance of marketing for rural development in general is widely recognised, as is the significance of markets for regulating and promoting economic progress (Abbott, 1987). Despite this, there has been a strong tendency for agricultural planners to emphasise farm production expansion without taking adequate consideration of market incentives and constraints, either from rural or urban demand sources (Bauer and Yamey, 1993).

The agricultural marketing system is essential in enabling agricultural products to move from areas of production to areas of consumption. It provides an arena in

which producers can exchange their crops for cash. These funds can then be spent on necessary goods and services for the household. The more efficient the marketing system is in keeping the cost of moving products to a minimum, the better it can stimulate both consumption and production. Where the marketing system fails to meet these goals, intervention is required to ease constraints and make the market more efficient.

The marketing system can be described as a complicated mixture of institutions and physical facilities enabling people to exchange goods and services (Mitchell, 1985). The market system can thus be seen as a social network of elements involved in the transaction and transformation of goods and services in spatial and temporal dimensions.

A) Agriculture in development

Agriculture is at the heart of economic development and has been recognised as a top priority in the economic development debate (Drucker, 1958 and Mitchell, 1985). It is regarded as fundamental for developing countries which rely heavily on this sector. In Jordan, for example, agriculture needs to be viewed to the extent that it is an equal partner with other sectors of the economy in fulfilling a wide range of development goals. The existence of a viable and well ordered agriculture sector is necessary for further economic and social development. Agricultural marketing makes several contributions toward economic development, the most important factors being marketing, fiscal and employment contributions (Johnston & Mellor, 1961 and Mitchell, 1985). Furthermore, agriculture plays a vital role in the livelihood of the farming society, touching on every aspect of life including livestock production. In

Jordan, livestock production plays an important role in the household economy, since a high percentage of Bedu are poorly qualified for other jobs and are otherwise unemployable.

The principal players in the Jordanian livestock marketing system are livestock producers, consumers, livestock traders, livestock markets and government organisations. The goods are live animals and their products. Transformation includes the collecting and assembling of livestock for sale or for direct slaughter, and sorting, loading, transporting and distributing livestock. Transaction refers to the economic interaction during the movement of livestock from producers to consumers, which results in the transfer or exchange of property rights over stock.

Furthermore, the role of markets is that of an important social occasion where producers acquire up-to-date price information and renew social relationships. Beyond that, markets provide exposure to all facets of modern life, where changes in politics, cultural attitudes and particular consumer habits may be encountered. Moreover, relationships between traders and producers take the form of friendship, especially when the sale of animals is connected to family and tribal links. Credit sales are usually motivated by this type of relationship, and take the form of producers selling animals to traders with or without a down payment.

B) Agricultural marketing in development

There is a wide range of views on the role of agricultural marketing institutions in economic development and the appropriate function of the public sector in bringing about desired changes. In the past, there has been a strong tendency for agricultural

planners to emphasise farm production expansion without sufficient consideration of market incentives and constraints, and whether these come from rural or urban demand sources (Abbott, 1993). Despite its fundamental role in the process of economic development, agricultural marketing has been ignored by traditional economic models used in the formulation of development plans, which consider it simply as a part of the production process (Kinsey 1988; Riley & Weber 1979 and Harrison 1974). Harrison, (1974, p. 2) clearly states that:

..economic planners have focused heavily on investments in projects designed to increase industrial and agricultural production capabilities. Most aspects of marketing, other than investments in basic transportation infrastructure, have usually been relegated to a secondary and adoptive role in the development process.

However, the dynamic role of agricultural marketing in the process of economic development has been recognised by governments. One of the early arguments was that if marketing were used effectively, it would accelerate economic development rather than be dependent thereon. Marketing provides a major channel for the movement of capital, integrates the rural sector into the economy, brings about change in the quality of life, encourages a modern way of living and promotes the existence of efficient economic and social institutions (Kinsey, 1982).

The relationship between economic development and marketing is a major element in the growth of the agricultural sector and in co-ordinating this with growth in other sectors. Hence, food production, processing and distribution activities are seen as a closely interrelated set of activities that operate in a system context. In the development process, agricultural producers rely more and more on the environment

outside the family unit to provide food, consumer goods, and farm inputs. In addition, the growth in urban and other non-farm rural populations requires more marketing services to co-ordinate production and consumption activities. As a result, the lack of market access or the high cost of marketing services can cancel out efficiency in production, since producers will not obtain acceptable cash returns which provide incentives to produce. The back flow of food, goods, and services to producers may also serve as an incentive to produce more.

The income that is generated from the sale of animals in Bedu society is a function of the market system. The more efficient the market, the higher the level of farm production, and the greater the impact the market system has on the Bedu production system. For example, the Bedu have increased their flock size due to the increasing demand for red meat in the local and regional markets (Randhawa, 1990). In other words, due to the high market orientation of the Bedu system, the market system has been a major factor in altering their production strategies. Furthermore, with the limited employment opportunities in the area, markets in the Badia have absorbed many of those Bedu returning from the Gulf states into farming and trading. Marketing can thus stimulate economic development by producing business people.

However, the role of agricultural marketing in agricultural development has not been given enough recognition in the agricultural policy in some developing countries. As Johnson (1973, p. 1) states:

But it is not agriculture as a sector of economy where resources are allocated and goods are produced that is in disarray. It is instead the policy setting in which agriculture finds itself that is in disarray. Farmers everywhere are capable of producing the right things in the right place in the right amounts and at low cost in terms of resources if they receive the proper economic signals.

Abbott (1987) maintains that emphasis in developing countries has been placed on making the production side of agriculture more capital intensive, and the major functions which marketing is supposed to play have been pushed to one side. The primary role of marketing in production is to provide a link between producers and consumers. Whilst marketing constructively guides farmers towards new production opportunities, these farmers must be convinced that a remunerative market exists for their products before they can be induced to produce commercially (Abbott, 1987 and Abbott, 1981). Furthermore, accessibility to marketing facilities encourages farmers to expand their efforts and improve their management techniques.

Inadequate marketing facilities, like the absence of storage, low technology, poor transportation and processing result in poor quality produce. An inefficient marketing system is a discouraging factor to commercial farmers in developing areas, and forces them to sell or simply get rid of their products at times when prices are poor or below the costs incurred in the production process (Abbott, 1987). Markets can influence farmers' behaviour and make them switch their resources between products in response to signals, thereby generating excess and creating an unstable situation in those markets. Uncertainty regarding sales in outlet markets and poor returns closes farmers' access to reliable production credit, a vehicle through which poor farmers can have better arrangements for credit, input supplies, transport, storage and processing.

Marketing, in theory, can add value to and generate employment in the general economy, by channelling resources from the agricultural sector (Abbott, 1987). It

ensures the fullest utilisation of assets and productivity capacity in the economy (Drucker, 1958). Marketing theoretically sets and directs the necessity for maximum productive effectiveness and efficiency. It integrates rural areas into the market economy through a network of communication and exchange, and becomes an important sub-sector providing for the distribution of food and consumer goods and the creation of opportunities.

In conclusion, it can be seen that marketing, agriculture and development are closely inter-linked into everyday life and so cannot be isolated or seen as externally enforcing their rules and rhythms on the rest of society.

However, some debates suggest that problems concerning resources or the population in developing countries can be solved in a manner similar to those having success in the West, implying that the ideal mechanism for solving such problems lies in applying ideas and technology from developed countries (Kinsey, 1988).

Other debates highlight the inadequacies of earlier approaches, pointing out the positive and negative consequences of implementing industrialised countries' models (Ekins and Max-Neef and Sachs, 1992 and Ekins, 1986). Some scholars are also concerned with the social and political relationships between players in marketing exchanges. They view the social system as comprising interacting sets of major economic and socio-political forces which affect collective behaviour and performance (Shaffer, 1980). Furthermore, economic development action should not be seen solely in terms of devising strategic plans, but in terms of achieving

psychological, social and cultural changes. Economic development can best assess people's needs and wants, and suggest how to segment distribution. The development processes of a country evolve against the background of its particular combination of economic, political, societal, geographical and climatic conditions. Thus, involving local people in projects and development conducted in rural areas is important.

An alternative approach to rural development is to make greater and more effective use of rural people's knowledge and experience, to identify their priorities and motivations, and to incorporate local inhabitants in the planning as well the implementational stages of development projects (Briggs, 1985, p. 170).

Marketing and economic development processes stretch beyond traditional economic concerns and are rooted in the larger social system. Social and structural relationships are therefore significant to marketing studies. Marketing activities can cover wide areas and have spatial features. Moreover, agricultural marketing research is not limited to one discipline, but includes geography, sociology, anthropology, and economics, in addressing the problems faced by the various participants in the market (Joy and Ross, 1987).

Each society consists of many social groups and each group shares similar life-styles, values, attitude, and beliefs. Moreover, the members of each group are expected to react in the same way to any environmental phenomena (Williams, 1985). For instance, culture is important in explaining behavioural variations within one society or organisation. Each society has its own culture expressed by certain values and norms, which remain stable in the transfer from generation to generation. These

values and norms undoubtedly play a significant role in determining members' practices and approaches.

Regarding how societal cultures are created and why they differ from each other, Williams (1989) contends that they result most immediately from the external environment, structures, systems and work groups. Common beliefs, attitudes and values have their origins in all these sources. These external environmental variations result in different experiences and demands which are reflected in society. Cultural differences between societies lead to differences in production and exchange in every society.

...not everything that looks like an economic activity is necessarily a part of economics. Indeed, economics offers only one of the many ways of apprehending goods-orientated activities and putting them in a larger context. Obviously, in every society things are produced, distributed and consumed; but only in modern societies are prices and products, conditions of ownership and work, predominantly shaped by the laws of economic efficiency. Elsewhere different rules are valid, other models prevail (Sachs 1992, p. 6).

It is clear that each society has its own cultural values and religious ethics which have a profound influence on the organisation structure, particularly the decision making process.

Conventional economics takes an extraordinarily limited and simplified view of human motivation, as reflected in its concept of Financial Man, a quintessentially competitive human archetype, who orders his entire world to conform to the conditions of maximum monetary gain. Now probably no economist would try to equate Financial man with real people. It is too obvious that the motivations of real people spring from far more complex sources than mere financial advantage: family, friends, neighbourhood, country, the capacities for love, loyalty and worship, to name only a few. (Ekins, 1986, p. 62)

In each society, roles are organised systems of behavioural expectations, and their outcome is determined by social norms or the rules of society (Williams, 1985).

In societies that are not built on the compulsion to amass material wealth, economic activity is also not geared to slick, zippy output. Rather, economic activities like choosing an occupation, cultivating the land or exchanging goods are understood as ways to enact that particular social drama in which the members of the community happen to see themselves as the actors. That drama's story largely defines what belongs to whom, who produces what and how, and when what is exchanged with whom. The 'economy' is closely bound up with life and has not been isolated as an autonomous sphere which might stamp its rules and rhythms on the rest of society (Sachs, 1992, p. 7).

Schultz (1974) argues that cultural values, perspectives and institutional arrangements are as important as economic gains in altering farmers' decisions. Therefore the influence of such values and institutional arrangements on individual decision making requires the attention of development planners.

In addition to the very rigid structure and strong social sanctions governing the production, distribution and consumption of goods among primitives are several other cultural factors which influence the perpetuation of tradition and reinforce "tried and true" economic behavior. Among these are (1) a high degree of cultural homogeneity and shared notions of acceptable vs. non acceptable behavior, (2) the fact that the sanctions governing all types of conduct are sacred, (3) the absence of any economic motives which fail to conform to all other aspects of social life (e.g. egalitarianism, pacifism, etc.), (4) the underdeveloped and use specific nature of their markets where the advantage of competition would be minimal, (5) the lack of local demand for surplus production since virtually everyone produces the same range of articles, and (6) an oftentimes fatalistic world view and the tendency to view the inanimate world personally (Schultz, 1974, p. 62)

Williams (1985) argues that understanding cultural differences is a very important part of the marketing concept. The shift in marketing studies from narrow approaches to wider approaches has been increasingly emphasised in recent years and is stressed by

many scholars (Scott, 1995; Alcantara, 1992; Magrath, 1992; Ilbery, 1986; Plattner, 1985; Williams, 1985 and Shaffer 1980).

4.3 Analysis of markets

Just as there are many different definitions of markets, so are there a number of approaches to the analysis of agricultural marketing situations. All are attempts to break down complex marketing systems into parts which can be understood more readily. Kohls and Uhl (1985) provide the basis for a range of conceptions when they classify marketing activities into functional, institutional, and behavioural approaches.

The functional approach breaks down the activities which occur in marketing processes into exchange, physical and facilities functions. The exchange function can be described as buying and selling, whereas the physical function is storage, transportation and processing. The facilities function is the standardisation, financing, risk bearing and market intelligence affecting the market. These give the basis for examination of the performance of an industry or institutions.

The institutional approach considers the nature and character of the middlemen and agencies and the arrangement and organisation of the marketing machinery. The actors in the market can be categorised into merchants, agents, processors and manufacturers and facilitative organisations. Merchants hold title to, and therefore own, the products they handle, whilst agents, who represent their clients, do not. Speculators take title to products with the major purpose of profiting from price movements. Processors and manufacturers exist to undertake some action on

products to change their form. Facilitative organisations do not, as a general rule, participate directly in the marketing process, but provide some facility to enable the process to be carried out. An example of such an organisation in agriculture would be the British Meat and Livestock Commission.

The behavioural systems approach examines and predicts the changes which take place in the organisation and functional combinations of marketing processes. Marketing organisations can be viewed as a system of behaviour, composed of people who are making decisions in an attempt to solve particular problems.

Various systems can be identified within an organisation and so contribute to a better understanding of how the organisation operates. The first is the input-output system which shows how inputs are utilised to produce the output of the organisation. The second is the power system which describes the prestige and standing of the organisation and its members. This system explains the drive of many organisations to expand. The third system which might be considered is the behavioural system, which shows how the organisation adapts to internal and external changes in the character of its market.

According to Riley and Weber (1979), approaches to the study of marketing issues in developing countries may be classified into three broad categories: economic assessments, descriptive studies, and feasibility studies.

4.3.1. Economic analysis

A) The neo-classical approach

Central to the neo-classical theory is the concept of a single product firm operating in a perfectly competitive industry, with a large number of competitor firms all producing the same product under the same cost conditions, and all facing the same market demand. The model of perfect competition makes the following assumptions about the world in which business is conducted and market agents operate under: perfect information, homogeneous commodities, no barriers to entry, and profit maximisation. The standard neo-classical transaction involves the exchange of a homogeneous product. In neo-classical theory it is assumed that there are no quality variations among outputs of one industry and consequently no costs involved in measuring the value of the product. Economic agents have complete information about all aspects of business, including market opportunities, available technology, and cost production under alternative production arrangements. According to neo-classical theory, transactions are treated as though they occur in a frictionless economic environment, where the firm is treated as a 'black box' of input and output (Hobbs et al., 1997).

The Structure-Conduct-Performance model used in marketing studies is based on neo-classical theory. Most rural food marketing studies conducted on traditional marketing follow the same pattern of structure-conduct-performance (S-C-P) applied to price analysis to determine market competition and evaluate market efficiency. According to this concept, the organisational structure determines and influences behaviour and this in turn influences the organisational performance. The S-C-P model hypothesises a predictable relationship between the structure (organisational

characteristics) of the industry, the conduct (behaviour) of firms within the industry, and the performance of the organisation. The organisation structure components are number and size, distribution of firms, entry conditions, and product difference. Organisation conduct includes pricing policies, decisions on product characteristics, the exchange process, actions made by participants and their effect on the behaviour of organisation competitors. The performance is the consequence of both the organisation structure and conduct (Magrath, 1992).

The neo-classical theory came under criticism from different scholars, (for example, Harriss, 1996; Harriss, 1993 and Shaffer, 1980) and therefore, neo-institutional economics has emerged as a response to these criticisms introducing a modification to the neo-classical economic model.

B) Transaction cost economies

Even though there is no single definition, Eggertsson, (1994, p.14) defines transaction costs in general terms as: "...the costs that arise when individuals exchange ownership rights to economic assets and enforce their exclusive rights". According to the new Institutionalists, institutions or organisations arise and act as a response to problems of the organisation of information, transactions and property rights. Their behaviour and actions are governed by the risk and uncertainty in the environment surrounding them. There are different costs associated with any specific transaction and these costs depend on the nature of the transaction. Transaction costs include the search for information, bargaining, contracts, monitoring the contract, and the enforcement and protection of property rights. In order to trade with a partner one must first establish a contact, find a suitable partner and know what to buy or sell. Once a contact has

been established, the traders have to confirm the trading in a semi-formal contract. Contract costs involve protecting and capturing rights to goods being exchanged and policing them. When the contract is clear, one has to ensure the contract is observed, and if any problems arise, for example, if production is found in remote areas away from main markets, distance may become an obstacle to traders for information gathering, communications, and the monitoring of transaction activity. Transaction costs can also be influenced by the prevailing market structure, especially the number of alternative buyers and sellers. If there are a few, this may result in higher search costs, lower screening costs, and considerably higher bargaining and enforcement costs. Where there are relatively few alternative trading partners, one might expect less complete disclosure of interests to trade and less disclosure of product information; better opportunities for strategic bargaining; and more transaction enforcement problems since threats to terminate trade and deal with competitors would be less credible. For institutions, the main goal is to reduce the transaction costs of increasingly complex forms of trade. This can be reached through improving the institutions that are involved, by making information available, protecting property rights and providing effective mechanisms for enforcing agreement.

Economic agents or traders face costs in the search for information about products, prices, inputs, and buyers or sellers. In cases where an economy is in transition, lack of information on prices, products, buyers and sellers becomes one of the main obstacles to trading. The rapid changes and structured dislocation which surround economies in transition, can lead to complexity and uncertainty (Hobbs et al. 1997).

According to Poulton et al. (1997) and Jaffee (1993) there are three levels of transaction costs associated with each specific transaction: asset specificity, risk and uncertainty, and frequency. Asset specificity refers to production and exchange as being durable and specialised, whereas risk and uncertainty refers to the uncertainty surrounding transaction. There are many transaction costs that are associated with transaction in developing countries and which can be classified as information costs, monitoring and enforcement costs. In modern countries, transaction costs are reduced due to the numerous sources of information in the yellow pages, industry associations, local chambers of commerce and so on. In contrast, in traditional societies such as pastoralists, participants in the market face considerable information costs in simply locating and assessing suitable suppliers, discovering reliable price information, and finding products of quality. Moreover, most mobile traders face high transaction costs since they have to move around and search for transaction opportunities themselves.

The second important transaction cost is in monitoring the behaviour of suppliers or buyers. This is underlined by the fact that most transactions are carried out on a verbal contract basis, and so are free of the usual laws and regulations which can, for example, cause problems in securing repayments. According to Harriss, (1996, p. 28) applying transaction cost economies in agricultural markets is not possible:

Testing these alternative propositions in the environment of agricultural markets which are plausibly TC constant yet within which coexist many combinations of capital and labour and many variations in the internal organisation of labour (all of which are far removed from the stylised firm of TCE) has not proved possible. [and] As with SCP in its agricultural incarnation, there are problems with both the theoretical consistency of TCE and with the derivation of an empirical methodology.

C) Agricultural market performance

Performance refers to economic consequences such as efficiency in the use of resources in marketing activities, effectiveness in market co-ordination, fulfilment of consumer quality preferences, competitive flexibility and willingness of market participants to innovate and progress. The concept of marketing efficiency is the most frequently used measure of market performance. Efficiency is the desired goal when market performance is being assessed or measured. Kohls and Uhl (1985) explain that efficient marketing is the maximisation of the input-output ratio. The input cost of marketing is simply the sum of all the prices of resources used in the marketing process or given as the minimisation of the input-output ratio involved in the process of getting products into the hands of the consumers. Marketing efficiency is divided into two major components, namely technical (operational) efficiency and pricing (economical) efficiency (Kohls and Uhl, 1985).

Technical efficiency refers to the efficiency with which resources are used in marketing, in terms of the input-output ratio. Operational efficiency is defined as the provision of goods or services at least cost and at the level of the output, or combination of inputs, which ensures that the value of marginal products equals marginal factor costs. According to Kohls and Uhl (1985) technical efficiency becomes a certainty when goods and services are attained at the minimum average cost. This signifies that it focuses on the reduction of costs of inputs in doing the job.

Pricing efficiency refers to the capacity of a system to effect changes and a reallocation of resources so as to maintain a balance between what is being produced

and demanded. A market is price efficient if there is a smooth flow of information within the marketing channels.

Furthermore, there are other important components in attaining marketing efficiency such as price discovery, which implies that the structure of the marketing system is designed in such a way that the price can clear the market demand and supply promptly.

A market is inefficient when the flow of goods and services takes place under conditions where there is varying quality, a lack of information flow between the parties involved and high transaction costs. It also involves the provision of economic incentives for one party to mislead the other party participating in the whole marketing process. Marketing efficiency implies the performance of the basic marketing function at the lowest possible costs. One prerequisite for efficiency in marketing is a favourable environment with a proper infrastructure, accessibility to markets, access to appropriate information and well functioning institutions.

Economic assessments aim at providing inputs to policy and programme development. Most studies on rural marketing by economists have applied price analysis to determine market competition and evaluate market efficiency. The outcomes of these studies on the traditional marketing system usually show the marketing system as performing fairly well and active government intervention as unfavourable (Maizels, 1984). Harriss (1993, p. 36) comments:

The [polar] assumption that commodity markets are either perfectly (or effectively) competitive or monopolistic (an assumption reflected in any content analysis of vocabulary) allied to the equilibrium assumption that the markets can be judged to be in a state of relative competitiveness for all plannable time, is clearly false.

The classical structure-conduct-performance model has also come in for some criticism, as Harriss (1979) demonstrates:

In dealing with easily available, even if qualitatively poor, data on agricultural commodity prices the analysis of market performance has been diverted away from the consideration of interrelationships between the control of commodities and money; between exchange and production essential for the identification of the role of the marketing system in economic development. In this sense not only is the methodology itself usually statistically and interpretatively spurious but also the fetishism of competition in agricultural commodity markets (as revealed by price and commodity analysis here) has led agricultural marketing economists to overnarrow at least a decade of a substantial part of our research (cited in Riley and Weber 1979, p. 12).

Harriss (1996, p.23) elaborates more on this issue:

But markets cannot exist in a deinstitutionalised form: no economic phenomena do. It is only possible to construct supply and demand schedules on the assumption that buyers and sellers react as though any price could be the equilibrium price. Prices are thus formed in logical time as if expectations had vanished and memories were eliminated. These are necessary conditions for perfect conditions. But perfect competition not only does not exist, it would not be viable for long if it did exist, because entry, exit, investment and disinvestment depend in the actual world upon the belief or the fact that information regarding opportunities is restricted.

Applying the Structure-Conduct-Performance model in traditional livestock production requires information on prices which is difficult to obtain. In traditional livestock production for example, where the production is largely dominated by pastoralists, the evaluation of livestock prices is a difficult task due to the complexity of the livestock business. Prices for livestock are reached through bargaining between



seller(s) and buyer(s). Animals can be sold either as a group or individually, or sometimes in mixed groups. In most cases, prices are determined on the same basis. Animals are generally sold per head, and it is rare to find sellers who prefer sale by weight. Buyers value the animal for the immediate return of meat production, and manually check the quantity and quality of meat that each animal will yield, for example by checking the animal's teeth for signs of age. Traders also value the condition and health of the animal.

One of the problems in studying livestock prices is the difficulty involved in collecting information on prices from traders who are cautious about discussing the matter. Another problem is finding an appropriate standard on which to base prices. There is no literature, such as annual reports, to be found concerning prices. Bekure and Tilahun (1983, p. 327) demonstrate the lack of livestock price literature:

Researchers must therefore, establish the sensitivity of interventions by establishing within what range of input and output prices they are stable. Time series data on prices pastoralists are paid for their livestock and livestock products as well as prices they pay for inputs are essential for such analysis. Unfortunately, in most African countries while time series data on input are available, they are almost non-existent for livestock prices.

A number of factors may affect livestock prices. For example, livestock prices can be expected to vary from area to area or market to market according to transport costs. However, variations in prices between markets are difficult to evaluate because of the lack of information on prices and animal weight, and condition in different markets. Since prices are usually given per head and not in units of weight, it is difficult to make comparisons. These prices do not take into account the different size and

quality of animals sold in each market. Movement of animals and cross-border trade between countries can affect prices, especially if large numbers enter the market at one time. It is impossible to estimate the volume and value of cross-border trade. For example, Oakeley (1996a) found prices in a market close to the production area in Jordan to be higher than prices in a more distant market for the same animal. The only explanation for this could be that animals were smuggled directly across the border to Saudi Arabia.

Prices may further be an inaccurate guide since they may result from a hidden transaction. Farmers and traders develop a social relationship and sale on credit is practised. For example, wealthy farmers sell their animals to traders on credit, since in both the short and long term this is usually higher than the average price for cash.

Another problem involving prices is that farmers usually mix weak animals with good animals, and this in turn reduces the price most of the time. It is then difficult to estimate the price per head. Traders are sometimes able to pick animals from a flock and this requires that a higher price be paid. At other times traders will not buy all animals, but save some, and so demand a different price arrangement. The age of animals is another important selling factor.

Social factors in the traditional livestock production system can have a greater influence on producers than price response. For example, farmers might prefer to hold back female animals during times of peak prices, if they are not in urgent need for cash and their environmental conditions so allow. Social values based on the

ownership of livestock are also still important, and many farmers might choose to increase their stock rather than sell. However, if the price is high, fewer animals are likely to be sold.

Therefore, applying the S-C-P approach to such type of livestock production would be unsuitable. Riley and Weber (1979) criticise the S-C-P approach. They note that the aggregation bias with respect to participants' behaviour and the data problem, often make the results inappropriate for policy recommendations for political decision makers. These studies seem to overlook the dynamic process involved in co-ordinating production, processing and distribution which take place even in subsistence economies. The fundamental weakness then of this classical S-C-P model, is its overemphasis on structural variables as determinants of market performance, and the consequent exclusion of conduct variables.

One of the problems faced in attempts to apply the neo-classical model to the study of markets is that it does not specify the causal links between performance criteria (competition and efficiency) and the factors that are supposed to affect them. These factors involved (such as the number of operators in the market, the transmission, or the degree of product specification) are simply treated as 'conditions' (Magrath, 1992, p. 8).

4.3.2 Descriptive studies

Descriptive studies of rural markets and traditional marketing systems have been carried out by anthropologists who have dealt with marketing institutions. Economic geographers analyse the market in terms of their interest in the location of economic activities, and undertake a large number of descriptive studies of marketplaces, periodic markets and itinerant traders in rural areas of developing countries. They

also focus on the marketplace and how markets are linked in terms of spatial organisation.

In contrast to the belief found among most Western marketing people, geographers and anthropologists do not regard the market place as an outmoded, unchanging institution, but rather find it extremely adaptable to change, where the environment changes (Smith, 1978) .

Contributions made by anthropologists and geographers to the analysis of food systems in development are invaluable. Riley and Staatz (1993, p. 58) indicate the importance of empirical studies on the food system:

Many policy makers still need a basic description of how food systems operate in their countries. Descriptive studies can do much to demystify marketing. Such studies should include discussions of who the major market participants are, what these participants do, and how they make market decisions.

Whilst studies by geographers, sociologists, and anthropologists provide valuable descriptions, Carol Smith (1976) argues that there have been relatively few attempts by anthropologists to correlate spatial life and continues:

..without the regional system context that geographical models can provide, anthropological marketing studies will not tell us a great deal more than we already know about economic determinants of peasants behaviour(cited in Riley and Weber, 1979).

According to Porter (1995), only from the beginning of the 1970s did geographers tend to emphasise analytical approaches by exploring the structure and function of market systems.

4.3.3 Feasibility studies

Feasibility studies relating to market development have been carried out for the purpose of providing information required by government agencies. Their analysis is focused on the economic feasibility of a proposed project involving large capital investments. These studies also tend to concentrate on the physical infrastructure, market centres being a case in point.

The analyses are typically focused on the economic feasibility of a proposed project involving a large capital investment. Due to severe time constraints heavy reliance is usually placed upon the use of available secondary data, engineering estimation procedures and the qualitative information that can be obtained through interviews with informed local business leaders and professionals (Riley and Weber 1979, p. 8-9) .

4.4 The need for a wider approach

Since agricultural marketing cuts across various disciplines such as geography, economics and anthropology, it should not be singularly focused on the activities occurring after products pass through the farm gate. Instead, it should be regarded as either a means of co-ordinating production, distribution, and consumption, or as part of the activities involved in the process of production and distribution, such as the food system.

To reach an understanding of marketing systems requires both normative and descriptive analyses. Normative studies are usually aimed at determining what people ought to do given specific goals, whilst behavioural studies typically try to understand what people do and why. The distinction between prescriptive studies and behavioural studies is not always clear-cut and the same analysis may incorporate both

aspects. Confusion may be avoided if this distinction is recognised (Riley and Weber, 1979).

The study of marketing in any society should not, therefore, limit itself to the movement of goods and money alone, but should aim at examining socio-economic complexities in order to understand how marketing acts not only as a system of exchange, but also as a factor of change as a result of political, economic and social integration. Agricultural marketing is not just an economic activity, since the form and efficiency of marketing transitions also depend on socio-economic factors. Marketing activity is a process of interaction which still has implications in the existing institutional structures of production.

An understanding of herd demographic structures is prerequisite to an understanding of why a herder sells or does not sell animals; [and]. Transhumant herding in semi-arid regions is a classically labour-intensive activity, and one hypothesis is that a major constraint on herd size is the amount of labour a herder can mobilize in maintaining the animals. As the herd expands beyond the herding unit's managerial capacity, it reaches the point of diminishing returns, reflected in a marked increase in a disease, predation, theft, runaways, and an increase in the costs of watering (Horowitz, 1981, p. 81-82).

According to Galaty et al. (1981), development planners have been forced to pay attention to local conditions and apply a development policy that fits with local conditions. Some livestock developers have reached the conclusion that the practices of pastoralists suit their environment conditions by maintaining suitable types of animal breeds, management techniques, husbandry and land use management (Horowitz, 1981).

The analysis of marketing systems and their role in the economic growth of developing countries requires a modified framework, guided in general by the organisation of those diagnostic investigations. In most food systems there are multiple performance goals, many of which can be specified only in the context of a particular country and culture.

..there are a great many intermediate situations, in which rural people have greater or lesser opportunities to participate in wider exchange environments under conditions enabling them to obtain a fair return for their goods or their labour. It is important to note that these conditions vary markedly not only among countries, but-more interestingly, perhaps, for policy prescription-within countries and even within provinces or states (Alcantara, 1992, pp. 6-7).

Whilst this makes analysis more difficult, the ultimate objective should not necessarily be the perfect representation of the farmer's decision making process from a behavioural standpoint, since this would be without prescriptive content, but to understand the context in which farmers make decisions.

The organisation of domestic labour is of particular importance because productive decisions in most instances are made in the household. This is true in the market and non-market context alike and is not diagnostic of a particular economic level. Division of labour by sex and age is often critical to effective livestock management given that most households must orchestrate a variety of tasks carried out at different places and different times. A division of labour underlies the way in which households utilize available resources (Horowitz, 1981, p. 94).

4.4.1 The emphasis on behavioural aspects

The stress placed on the need to study farmers' marketing behaviour has received recognition. Hart (1992, p. 201) explains: "Most behavioural studies have dealt with production decisions, but there is a need to focus on farmers' attitudes towards marketing". He argues that a farmer's decision making can be influenced by factors

other than financial returns. Marketing procedures differ in the combination of costs and benefits they deliver, while financial returns may be overtaken by less tangible considerations. Likewise, marketing is a very complex process and producers differ in their understanding of and adaptation to new procedures and opportunities. Ilbery (1986) applies a behavioural approach to farmers' marketing attitudes. He suggests that social factors such as a farmer's values and norms influence the decision making process, resulting in different behavioural responses from time to time and area to area.

Such an approach stresses the satisfying nature of economic behaviour, with attention focused upon the way in which the perceptions, motives, attitudes and values of individuals influence decision-making at the farm level (Ilbery, 1986, p. 468).

Hart (1992) and Plattner (1985) add that individual people vary in their ability and understanding in adapting to change and the way they deal with real economic risk. They state that decisions made by individuals should not be seen as a maximisation procedure. Individual economic behaviour is the outcome of 'multi-causal' and 'goal-driven decision procedures' under uncertainty and constraints (Plattner , 1985).

Understanding farmers' decision making has led some scholars to consider farmers as managers in an organisation. Barker (1989, p. 12) emphasises the role of marketing management in agriculture, and states that farmers act as marketing managers in maintaining their farming system. He defines marketing at the farm level as: “any deliberate activity undertaken by the farmer with the purpose of aiming his output towards pre-selected market areas so as to maximise, or at least optimise, profits”.

The constraints facing the decision makers and the satisfaction of their outcomes are stressed by Shaffer (1980, p. 312):

My basic assumption is that individuals search narrowly selected portions of the environment and identify patterns of behaviour consistent with their perceptions of that opportunity set which will satisfy them.

In most organisations or households, the behaviour of one member(s) is directed toward objectives that are determined by its members, who must identify the groups that are influenced by its actions and their expectations of organisations. Although the groups involved may vary from one decision to another, several significant groups may be identified as typically being concerned with management decisions.

Participants seek their goals primarily in environments of collective action and decision making. The primary types of organizations in the political economy are firms, households, unions, and governments, although many other types of associations are also important. These organizations shape the opportunity set of their members and the interaction of organizations shapes the opportunity set of the organizations (Shaffer, 1980, p. 313).

It is argued that decision making is the key issue in the success of any organisation in achieving its objectives. Mintzberg (1995) notices that decision making has been identified as providing the central dynamic of the institutional model of organisation and is often seen as a central activity of managerial work. As it presupposes that a decision follows a number of distinct stages, the influence of cultural values is expected to prevail over the entire process of decision-making. Harrison argues that values may be thought of as the guidance system a person uses when confronted with choices among alternatives. A value can also be viewed as an explicit or implicit

conception of what an individual or groups, selecting from among available alternatives, regards as desirable ends and means to those ends (Harrison, 1981).

It is also argued that the influence of cultural values and religious ethics upon the decision making process will in turn influence the formulation and design of the information system into providing the right information. It is thus necessary to review in brief some of the literature about decision making.

Decision making has been defined in different ways. Jones (1977) explains the decision making process as being concerned with a whole range of activities, including starting from building an issue through to the formulation of alternatives from which the decision is taken. It is clear that decision making is taken as being a dynamic process and is a fundamental part of any management process. Decision makers are expected to make their decisions from alternative choices, and any criterion used by decision makers in choosing the alternative is expected to be influenced by the information available in order to reduce uncertainty.

4.4.2 Farmers' decision making

The descriptive view, developed by behavioural scientists, is about the way most individuals behave in actually making decisions, and what influences them in this. Although many factors have been suggested as influencing the decision making process, values and ethics pervade the entire process of choice, as they are an integral part of the decision maker's life. However, it is important to bear in mind the limited ability of humans to look at all alternatives, and so the implications of such models become limited. 'Satisfying' under this condition becomes an alternative model of the

criteria of decision making, and stems from making a descriptive model, which says that decision makers are not in a position to select the best course from those available to them.

The question of how and why people arrive at certain decisions has led to several different explanations. One of these is that no decision can be taken in the absence of an objective. Objectives are seen and understood as the conclusion to which any activity is directed, and to which organising, staffing, directing, and controlling are intended.

Individual farmers have a wide range of objectives and a variety of methods to achieve and obtain such objectives. However, individuals make their decisions according to their constraints as well as to their objectives. Farmers' decision making processes are usually made in the light of both certain and uncertain conditions. Barker (1989) considers constraints as barriers to obtaining farmers' objectives and therefore distinguishes between two type of constraints. Equality constraints are considered to be definite in form and type, such as market price and unavoidable production costs; inequality constraints are not definite and farmers have no choice over them.

In agriculture, uncertainty in the decision making environment is widespread. Barker (1989), identifies four causal factors of the phenomenon: 1) the unstable physical environment; 2) unpredictable weather conditions and diseases; 3) price uncertainty; and 4) unfavourable agricultural prices.

Cossins, (1983) discusses pastoralists' decision making and strategies, and adopts a similar argument to Barker. According to Cossins, decision making in most pastoral households is deliberate and based on environmental and household conditions. These decisions range from sales decisions to the maximisation of the flock size, which is an obvious strategy adopted by most pastoralists as a response to current economic, political and social development. Generally, pastoralists have to cope with a wide range of constraints, from natural and sometimes predictable, such as the rainy and dry seasons in the year cycle, and unpredictable such as epidemics, and long-term changes including regulation of mobility, government policy and extensive farming which reduces rangelands. Because marketing decisions are a result of the interaction between natural and human factors, their analysis becomes complicated.

Adopting a comprehensive framework is required in order to desegregate the various factors which may influence the marketing behaviour of pastoralists. This study examines farmers' marketing decisions under external factors such as extreme weather conditions, livestock disease, government intervention, demand and price, and internal factors within the household. This study will focus on social relations by which marketing systems are organised. In this sense, the study shares its focus with anthropologists and sociologists.

However, in some households in the Badia, livestock production is a secondary household activity to other sources of income, and animals serve a different purpose (Abu Jaber, et al., 1987). Circumstances can cause some households to make different marketing decisions to farmers who specialise in livestock production. In

other words, factors external to livestock herding are constantly incorporated into the livestock management decision process and can have a significant impact on marketing decisions of all enterprises. From this standpoint, a household can choose to sell or dispose of an animal or not. Cossins (1983) reminds us that decisions of pastoralists varies according to circumstances. He thinks it is more useful to describe pastoralists' decisions as either strategic or tactical, and being consistent with their objectives. Strategic decisions are those taken in response to a set of circumstances in the long term, while tactical decisions are taken in response to short-term conditions and are more concerned with the use of available resources. (Galaty and Aronson, (1981, p. 24) elaborate:

In most places in the Middle East and Africa today, livestock raising is still primarily oriented to subsistence. Strategies of nomadism, herd management, animal husbandry, and marketing are all designed by pastoralists primarily to serve their domestic economy. As with family production operations everywhere, therefore, altered configurations of family labour and collective resources can have immediate effects upon the whole operation.

In terms of costs, there are costs associated with herding, feeding, watering, health maintenance, crop damage and the risk of loss, theft, and sickness. Opportunities to sell are sometimes limited to certain times or certain locations. A seller has to consider the costs and benefits of not taking advantage of an opportunity to sell when, for example, a buyer passes through the area. In addition, the financial gains foregone by not selling in a given period and investing the funds elsewhere (as in another animal, other assets or the bank) are also costs of delaying a sale.

Farmers may have social and cultural reasons in their evaluation to sell animals. They may not like the colour or behaviour of some animals (Sands, 1984). Sometimes keeping animals may cause farmers to have social conflict, as when a farmer's animals damage the crops of a neighbour. The decision to sell should also be framed as an evaluation of the relationship between household demand for cash and the use of a household's livestock to meet these demands.

In his elaboration of "pastoral monetary theory", (Schneider: 14) describes livestock as representing a "strong, hard currency", which can act at the same time as a "medium of exchange, store of value, unit of account or standard of value, and standard of deferred payment and they are highly liquid, all characteristics which need not coincide" (Salzman and Galaty, 1990, p. 28).

Since the focus of this study is on livestock marketing and farmers' decision making in relation to the marketing issue in terms of family cash needs and income strategies in different groups of households, the whole farm perspective is considered here. A household has some attributes of an organisation as well as of a typical family unit. In addition, agricultural producers usually sell their products at the farm gate and rarely have direct trade with consumers. The role of traders therefore becomes important in moving resources from the producer to the consumer with the aim of making profits. The Bedu farming household is taken as the major decision-making unit in this traditional system.

Taking the household as a whole is an important element in the analysis. Household patterns of production and consumption are inescapable. The production of goods from livestock in households thus has production and consumption aspects. The unit of production, the "household", can vary in size. It is based on a man and his

wife/wives and children, and the number of dwellings in which they may live¹. The household head manages farming and nearly always has other interlocking economic activities.

Family members have well defined rights and obligations towards the household economy, and outside these limits, cash transactions between family members are common. Therefore, pastoral farming research is limited to those items which are under the household's managerial control i.e. family and livestock. Additionally, there are various external relationships with natural, economic and social environments.

An analysis of the farm level is required to identify several key factors that contribute to the fuller commercialisation of livestock production. In areas where farmers' marketing options are restricted by their low capital basis and inadequate marketing infrastructure, prices at the farm level are likely to be influenced by the nature of sale arrangements between farmers and the wealthier and more mobile traders. An understanding of the nature of price formation at such initial levels is likely to provide additional insights into the operation and hence the marketing performance. In view of such considerations, the use of prices as sole assessors of market performance is unlikely to be sufficient. Large scale marketing, more competition among traders, good prices to producers, low transportation costs and good market information all contribute to more efficient markets.

¹ In the Badia of Jordan it is often the case that a large family shares all means of a household's economic assets and income, even though they may live in different households.

What is of interest in this study is the extent to which certain household characteristics and current circumstances (factors outside the livestock enterprise) help explain a household's decision to sell or not to sell at any given time in the year.

Pastoral production is normally and correctly part of wider production systems; changes in any element have ramifications in all others (Galaty and Aronson, 1981, p. 21).

Food and income derived from animal sales and products are among the most important reasons for households to raise sheep and goats (Abdullahi and Jahnke, 1990). In other words, in a household's sales decision process, other factors are incorporated representing a household's immediate needs, either social or economic, or for the animal.

Although specialised ranches in Australia, New Zealand, and Argentina represent the extreme where local strategies of production are dictated by the demands of distant markets, a similar trend is discernible in part in Africa and everywhere in the Middle East (Bates and Conant, 1981, p. 93).

The decision to sell will also be framed as an evaluation of the relationship between a household's financial needs and the use of a household's livestock holdings to meet these needs. Livestock marketing studies have found that even though most farmers have a reasonably good understanding of the most profitable time to market their animals, they are often forced to sell in response to changing circumstances within the household (Abdullahi, 1990; Sands, 1984 and Herman, 1983).

For the benefit of the study, the marketing system will be examined in terms of the trading enterprise, the marketing channel and the system level. Analysis of the

marketing channel will focus on the participants (traders) and market locations within Jordan and neighbouring countries. Examination of price, reaction to uncertainty, traders and exporters, negotiations and agreements, reciprocity, mode of exchange, impersonal and personal, equilibrating relationships, elements of exchanges, transaction and market infrastructure will be covered in the analysis.

In areas where circumstances and conditions confine the market opportunities of market participants and prices become imperfect as indicators of marketing conditions, other considerations such as participants' prosperity become equally important. Consequently, a joining of price and social indicators is liable to provide a more adequate assessment of market conditions than price alone. Local conditions and information resources therefore require an adoption of the approach. The study examines farmers' sale of livestock, particularly lambs and sheep. The analysis of farmers' decision making processes is stressed. The market, market participants and their constraints are also analysed.

Due to the complexity of the livestock enterprise in the Badia of Jordan, different aspects of production and marketing should be included to provide a better understanding of the marketing reality. It was therefore impossible to limit the analysis to one particular approach. On the contrary, there is a strong debate taking place within academia arguing that social research should be integrated and should be in harmony with the real world. This does not mean a complete divorce of research theory from the framework of marketing research, but rather to use what is suitable to

the present research area. Therefore, a wider approach is being adopted to cope with the livestock marketing situation.

4.4.3 Environment-Behaviour-Performance approach

Many scholars have recommended comprehensive approaches to study and formulate recommendations about marketing in development. Shaffer (1980) has suggested a broad approach and argues that wherever environmental conditions are suitable, price is the usual indicator for marketing efficiency. However, the researcher may need to look for other tools if environmental factors cause the price to be inappropriate. The Environment-Behaviour-Performance concept provides the framework for such a multi-faceted approach in assessing market performance. This is made more relevant in view of the fact that, in certain instances, even very rigorous price analyses often come up with results that are not easily explained by the principles of 'normal' price behaviour.

In an environment where constraints limit the market opportunities of different market participants in different ways, prices become inadequate as sole indicators of marketing efficiency. If performance is interpreted generally as the ability of the marketing system to perform what society expects of it, then other considerations such as participant welfare become equally important. Thus a combination of price and social welfare indicators is likely to provide a more satisfactory assessment of market performance than the sole use of prices (Fialor 1994, p. 134).

The performance of agricultural marketing requires comprehensive understanding; therefore marketing activities and behaviour need to be studied within the wider social arena. For example, in a developing country where market behaviour and prices produced during the marketing process could be due to factors such as the need for money for social reasons, it is necessary to assess the market in terms of local social,

cultural, and economic factors, and explain the effects of any unusual economic behaviour on the marketing process (Fialor, 1994).

The Environment Behaviour Performance Model (E-B-P) explains why it is important to examine participant behaviour in organisations under varying socio-economic conditions. This approach, presented by Shaffer (1980) is based on a modified S-C-P framework, and underlines the role of market processes as economic co-ordination activities in a food distribution system. Market co-ordination is where actors in the market interact to exchange market information, set up conditions of exchange, and transfer economic products. In order to benefit from the opportunities in the environment, the participants assume standard operating procedures (SOP) or rules of the thumb for their (marketing) operations. If the SOP fulfil their aims, they are retained. If not, participants search for and adopt new behaviour patterns, within the constraints of the external environment, in order to achieve their goals. Participants are either individuals or groups, for example, farmers or market wholesalers, households, firms or officials in government responsible for devising policies that shape the opportunity sets of other participants.

This approach also claims that government intervention can improve the performance of agricultural marketing systems. Riley and Weber (1979, p.13) observe:

The most important marketing problems related to achieving the desired structural transformation are in the design and promotion of new technologies and new institutional arrangements which may be unprofitable or unavailable to individual market participants, but if adopted by all participants, could yield substantial system improvements.

In order clearly to view the performance of such a marketing system, the E-B-P approach tries to bring together basic environmental characteristics into the analysis. There is widespread uncertainty in agricultural decision making (Barker, 1989). In general terms, the E-B-P model stipulates that any political economy presents individuals with a set of opportunities which vary from individual to individual and group to group, but may overlap. Moreover, individual reactions to such opportunities presented by the environment, result in different costs and benefits, together constituting a certain level of performance. The intermediate level of performance creates a different set of opportunities and the sequence recommences. The total flow of consequences which follows from such an organisation represents the performance of the system (Fialor, 1994). In other words, the environmental opportunities (E) give rise to certain behavioural responses (B), the sum of which constitutes the performance (P) of the system. Here, performance becomes a dynamic concept, defined as "the outcome of the behaviour of the sum of participants acting within the constraints of their perceived individual opportunity sets", (Shaffer, 1980, p. 312).

The E-B-P approach desires that the strategic characteristics of the environment, including constraints, the participants and the outcomes of their behaviour be classified in order to ease its use as a means of analysing market performance. Performance indicators can then be developed according to environmental requirements and then compared with the likely consequence observed, to recognise any gaps. Research can then identify such gaps between standards and practice (Fialor, 1994).

Fialor (1994, pp. 137-138) presents the environmental variables in this model as follows:

- 1) the economic and social variables that affect the operation of the marketing industry and individual firms, such as the number and the size of competitors, concentration of buyers and sellers, barriers to entry, input suppliers and purchasers;
- 2) the system of rights and regulations present in the society, both formal and informal, including property rights, enforcement procedures for contracts, taxes and subsidies, perceived social and political pressures, barriers to entry, and cultural values and beliefs about acceptable behaviour and possible sanctions; and
- 3) the limited inventory of technologies and institutional arrangements to the social system for storage, transportation, processing and other marketing activities.

In this study, the following assumptions have been made about the present marketing conditions in the Badia:

1. Under present livestock marketing conditions, sales of livestock from Bedu households has less to do with the need for cash and more to do with the internal and external demand for live animals;
2. Even though there are differences in the size of flock between Bedu households, these differences are assumed to have no impact on decision making;

3. The majority of marketing decisions are made largely on the basis of price consideration;
4. Information is readily available to both producers and traders, and farmers have information on various transactions taking place;
5. The present marketing infrastructure is serving the marketing system; and
6. The institutions governing livestock policy play a major role in enhancing transactions.

To investigate the above assumptions, attention in this study is focused on the following:

- 1) The characteristics of the existing marketing facilities and the different types of market participants;
- 2) Producers' behaviour in relations to: marketing alternatives; access to market information; social and economic relations; and marketing arrangements.
- 3) Present environmental conditions, especially the effects of disease and the condition of the rangelands.

While the E-B-P model emphasises the need to take into account social factors when studying marketing together with price analysis, many more variables should also be considered. Furthermore, no single analysis can deal with the complexities involved in the E-B-P (Shaffer, 1980).

4.5 Conclusion

The analysis of livestock production and marketing under traditional systems cannot be confined to a particular approach or concept. Applying one approach can provide some, but not all, of the answers to research questions. While a precisely defined concept of the market and the marketing system is essential for the investigation of the current livestock marketing in the Badia, with its strong connection to production behaviour of producers and market conditions, a narrowed down concept is not very helpful. Any analysis has to examine the impact of the varying conditions of production and marketing on the Bedu. People seek to satisfy their needs as they perceive them, whether these needs be biological, or psychological. But the means used to attain them differ from one society to another, in the light of the technological, historical, social and psychological factors that are at play. Thus, economic motivation may not be the only, or even the dominant, explanatory variable of the behaviour of many small-scale farmers.

As Ekins and Max-Neef (1992) argue, economists still insist on employing very narrow approaches when focusing on rational economic behaviour. For these economists, this implies the input to output ratio of production and dismisses all other aspects of a farmers' life that should be taken into account, such as household production and satisfaction. They do not commit themselves lightly to a definition of optimal efficiency, when individuals or groups do not achieve an ideal Western standard of efficiency in the use of their production, and when the economy does not provide the resources that would allow production to reach these standards. In many

cases, the economist decides what that standard is, taking an industrial society as his or her model.

Even the haggling and chaotic hustle and bustle in the souks of an Arabian medina have nothing to do with undercutting the competition; who pursues which of the many trades is determined by factors of social and geographical origin as well as by one's allegiance to a Sufi sect (Sachs, 1992, p. 6).

In this study the E-B-P model was chosen because it allows more room to consider the environmental and behavioural factors that affect Bedu marketing behaviour and decision making. This approach has obvious shortcomings, which can be compensated for in two ways. First, the situation of the production and marketing must be fully described, so that it can be understood in its social context. Second, even a full description is not enough, for a full understanding necessitates a precise definition of all factors affecting the situation, and so it is essential to take the natural and social environment into consideration and the way it shapes the conditions of the market. However, it provides a strict number of criteria when it comes to determining market performance, and focuses mainly on economic efficiency, marketing margins, profit margins, price efficiency etc. Desirable market performance is directly related to the competitiveness of an industry because distortions thereof tend to impede price efficiency.

As mentioned above, examining the marketing system in a narrow approach would not answer all the questions concerning this type of traditional production system.

It is precisely the enormous variation in 'real markets' which lies at the heart of what reform-minded advisors to Third World governments tend to categorise as problems of policy implementation. A standard policy

package, designed in the abstract, cannot be implemented in the abstract. It will be warped and moulded by social forces which are, in the last analysis, idiosyncratic (Alcantara, 1992, p. 3-4)

This may therefore result in undesired or unexpected outcomes. For example, measures intended to favour a specific group in a specific context, may in fact turn out to benefit another in the passage through real markets. Incentives moulded to ensure a particular response may again result in an opposite pattern of response, or predicted or hypothesised patterns of reinforcement or interaction between elements may show themselves to be highly problematic.

However, there seems to be a growing consensus among agricultural economists that aligns with the broader, more dynamic view of marketing as a major element in the development of the agricultural sector and in co-ordinating agriculture with growth and development in other sectors.

Chapter Five

The socio-economic background of the household

5.1 Introduction:

This chapter presents data concerning the socio-economic background of households in the JBRDP area. The system of livestock husbandry may be classified into three general types: (1) small yard herds kept as supplementary enterprises on settled farms, (2) semi-nomadic herds grazed among settled villages and in the desert, and (3) the purely traditional, nomadic, livestock operations which still constitute the main wealth of the tribal community. The principal animals produced are sheep and goats. Nowadays, the majority of the Badia population is involved in crop farming, livestock production, the civil service, commerce, the armed forces, mining and the prospecting industries. However, livestock production is still important to their household economy, being considered as the main source of income for some households and a secondary source of income for others.

The analysis of herd owners... shows that the family income is derived from the following three main activities: animal breeding, representing 60 percent of the total income; agriculture, representing 10 percent of total income; other family activities and employment, 30 percent of total income (Nesheiwat, 1991, p. 54).

Income from livestock is basically obtained in the form of milk, meat, wool and skin. In Bedu society, milk and milk products are regarded as essential food, but can be exchanged for other foods. Reliance on milk and milk products requires most Bedu to maintain at least a few animals to meet their household needs.

5.2 Livestock holding

Today, the number of animals per household has changed considerably. The bias toward sheep rearing indicates an adaptation to the changing circumstances in livestock production. In the study area, the number of animals per household can vary, with the majority of households having less than 100 animals. Table 5.1 shows the uneven distribution of the farmers' sample by flock size. One can observe a high representation of small livestock holders of 1-100 with an average flock size of 45 head of sheep, and 161.3 for the second smallest group, 101-200 head.

Table 5.1: Size of household flocks in the sample

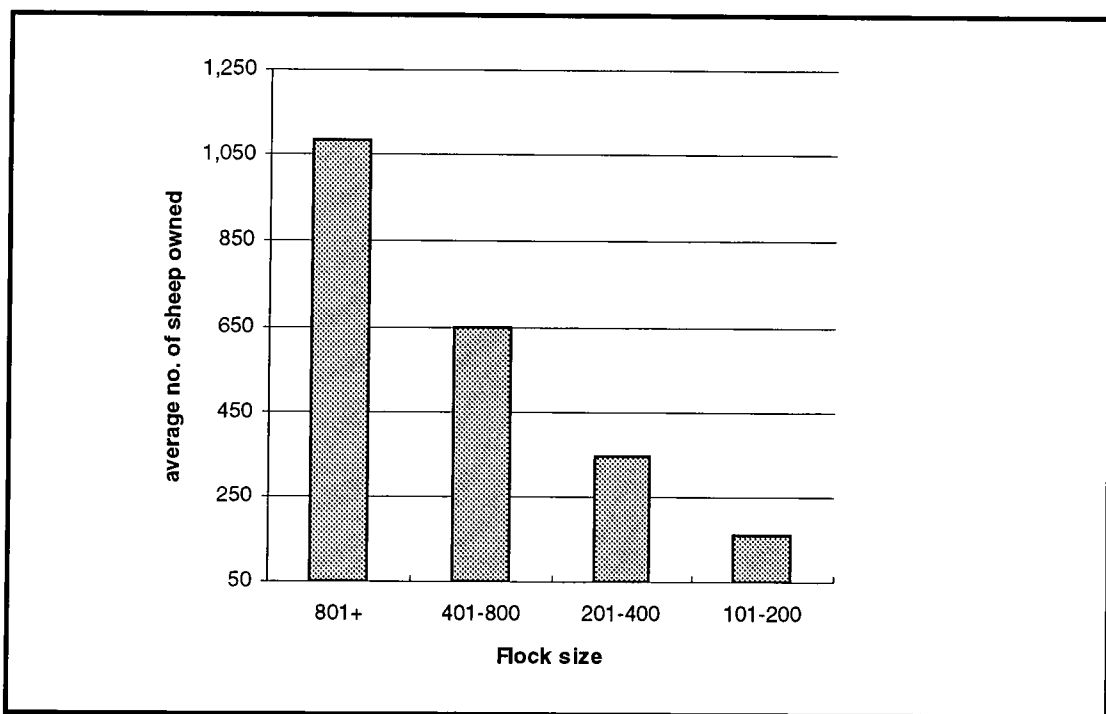
Flock Size	%	Total of sheep	Mean	Number of flocks
1-100	54.9	4770	45.0	106
101-200	16.6	5161	161.3	32
201-400	16.1	10716	345.7	31
401-800	8.8	11000	647.1	17
801+	3.6	7600	1085.7	7
Entire population	100	39247	203.4	193

Source: Field study conducted by the researcher, 1995

Figure 5.1 shows the average number of sheep by flock size taken during the 1995 fieldwork. The average number of animals per household for the whole sample was about 203 head of sheep, with the majority falling below the average. Variation in the numbers of animals owned was large, ranging from a few animals to over 3,000. Larger flocks were found in the hands of a small number of households, who were either fully or semi-nomadic (Table 5.2). Variations in livestock ownership between these farmers leads to an equally significant disparity in the value of their animals.

Most farmers maintain the same structure in their flocks in the area, and retain a high percentage of females, especially those from weaning to reproductive age.

Figure 5.1: Average no. of sheep by flock size



Source: Field study conducted by the researcher, 1995

Table 5.2: Present location of flocks by average flock size

Area	No. of flocks	%	Mean of flock size
Within village	118	61.1	89.0
Around village	47	24.4	271.6
Away from Village	28	14.5	570.3
Entire Population	193	100.0	203.3

Source: Field study conducted by the researcher, 1995

Information about types of farmers can be obtained from the present location of their flocks (Table 5.2). One can observe that most farmers are settled farmers who spend most of the year in their villages. Farmers who are on the move can be categorised

into different types. Those who lead their animals around the village usually travel within a radius of 20 km or less. Farmers who travel further away from the village, covering distances of over 50 km, represent a very small number, as shown in Table 5.2. More details will be discussed further in the mobility section later in this chapter.

5.3 Livestock management and productivity

Bedu follow different management strategies and techniques in their livestock production, applicable to their environment and their household obligations. One of the most important priorities is the species composition of a household's herd. Environmental and economic conditions are usually the main forces to adopt one type of herd rather than another. Sheep are widely owned throughout the region because they are considered to be the right type of animal for the conditions and so are the dominant domestic species. The *Awassi Baladi* and *Najdi* sheep are the two dominant types in the area. Both types are known for their fat-tailed breed and are valued for their meat and wool. *Najdi* sheep are found in the region even though they are not as numerous as the *Baladi* breed. However, from the responses given in the sample as to type of breed, 100 per cent of the sheep were *Baladi*. This can be explained by the Bedu's belief that the *Najdi* breed is much less resistant to the cold (Blench, 1995).

Other types of animals such as goats are often maintained in small numbers along with sheep. There are two breeds found in Jordan, the *Baladi* and *Shami* (Blench, 1995). Since farmers often mix the two breeds, it can sometimes be difficult to distinguish pure *Baladi* from pure *Shami*. The main reason for maintaining goats along with

sheep is that their milk is used for domestic household purposes, and that they milk for longer. However, goat products are generally less marketable (Campbell and Roe, 1995).

5.4 Structure of flocks

The *Baladi* sheep is a productive breed, but due to adjustment factors, particularly feed demand, the productivity of these animals in the Badia is usually limited to one lambing per season. Female sheep make up 90 per cent of all adult animals in flocks of which around 60 per cent are in the reproductive age group (Table 5.3). Each year flocks produce young animals and female lambs are mainly kept to replace old females and to build up breeding stock. Traditionally, ewes are kept for as long as they can bear lambs, after which they may be sold as they approach an unproductive age. There is a significant difference in the number of ewes lambing according to flock size. This difference can be explained by the fact that small flocks are composed of old ewes. These small-scale farmers often sell their female lambs to meet their financial obligations. Moreover, a small flock can be managed in a more efficient way than a larger one. As shown in Table 5.3, the flock size of between 1-100 animals scored the highest percentage in lambing.

Table 5.3: Number of ewes lambled by the total of flock size

Flock Size	Total of animals	Total of Ewes lambled (%)
1-100	4770	3427 (71.8)
101-200	5161	3111 (60.27)
201-400	10716	5965 (55.7)
401-800	11000	6720 (61.1)
800-	7600	4100 (53.9)
Entire Population	39247	23323 (59.4)

Source: Field study conducted by the researcher, 1995

Milk from small-scale flocks is still largely used for internal household consumption and most male lambs are put on the market. In contrast, in addition to household consumption, the milk from large-scale flocks is either sold to cheese makers or left for the lambs. For management purposes, large-scale farmers may divide sheep into breeding and non-breeding groups. Lambs are sometimes isolated from the breeding flock for weaning purposes or sold directly. A few male lambs are kept for breeding.

5.5 Activities related to livestock

Household members must perform a variety of tasks that are essential to the well-being of their livestock. Most tasks are organised around age and gender roles. The head of the household is responsible for flock management and family subsistence and makes decisions concerning livestock management. Decisions on feeding, watering, reproductive behaviour, treatment of disease, and labour access are likewise made by the head of the household. Usually, he is the oldest male member of the family, and is advised by the other household members.

Most of the required flock labour is covered by family members, except for big herd-owners who hire foreign workers. Shepherding is usually practised by males; however women were observed in the study area carrying out this kind of work. Shepherding activities vary according to flock size and location, within the villages or outside. Farmers within villages tend to have one or two family members, usually children, who wander with the animals during the day. Large stock owners maintain a full employment strategy by hiring a shepherd on a monthly basis. According to Blench (1995), in Jordan, 54.5 per cent of 664 farmers surveyed employed shepherds. Campbell and Roe (1995) indicate that only 22 per cent of farmers employed shepherds among 105 farmers interviewed in the programme area. During my field work the average payment for a shepherd was about JD 105 per month. Farmers with less than 50 head of sheep are not in a position to hire shepherds, and are forced to rely on family members for herding animals. The studies carried out by both Blench and Campbell and Roe focused on farmers with larger flocks.

Hired shepherds are one of the most important factors affecting sheep production in the area. There are many other factors that determine the need to hire a shepherd, mainly the number of animals. Whenever the number of animals exceeds 70 head, a shepherd is usually required, and flocks with over 700 head of animals usually require more than one shepherd. The location of animals also determines the number of shepherds. For example, when animals are kept in remote areas away from arable crops, this relieves owners from shepherd expenses to some extent. The lambing and milking season also determines the need to hire more shepherds. Shepherding has been looked down on by Bedu for social reasons and many young Bedu will not carry

out this type of work. For instance, in the early 1980s, this sub-sector was faced with a shortage of shepherds which in turn caused distress sales, especially when a large part of the younger generation were securing work in the armed forces in Jordan and the Gulf. Reliance on foreign labour has since become vital in animal farming. During the field work there was no single Jordanian working as a shepherd, the vacancies usually being filled by Syrians, Iraqis and Sudanese.

Feeding and watering are mainly carried out by men, particularly when farmers are forced to give concentrated feed while animals are in pastures. Women contribute to food distribution if the flocks are nearby, or to caring for weak animals and small lambs. They may sometimes help in driving trucks.

Milk is a very important element in Bedu income. Milking is done by the women in the family, but with big flocks and flocks situated far away from the household, producers may be forced to hire milking labour. On the whole, everything related to milk production and milk processing in households is the exclusive domain of women. The senior women of the family co-ordinate and manage all tasks related to milk production, and the younger women assist in milking. Women decide whether or not to milk and how often to milk, and can influence the decision as to when to begin weaning lambs. Children assist in herding and nursing stock, and gathering animals for milking.

5.6 Migration and mobility

Despite the decline of nomadic life in recent years, Bedu still adhere to their traditional way of life. They still perceive mobility as essential and necessary to profitable production. In areas where conditions are not favourable, the need to move animals becomes imperative in order to make use of seasonal pasturage. However, exploitation of seasonal pasturage is not the only reason for nomadism. Mobility allows Bedu to escape from the various constraints present in their physical and social environment. Producers' movement with their flocks also helps to avoid health disasters from disease, and competition from other groups (Campbell and Roe, 1995).

The movement of livestock farmers can also help them avoid political forces, by reaching or crossing international boundaries and escaping local governmental restrictions¹. There are also economic factors, such as the presence of markets and the readiness of settled farmers to hire out potential pasture areas to nomadic livestock farmers. According to Campbell and Roe (1995), the justifications for migration given by semi-sedentary villagers in the northern parts of the JBRDP study area, were to escape the cold in winter and potential loss of new-born lambs. Other livestock farmers stated the importance of fresh pastures for animals, especially for milking production, which in turn enables young lambs to grow better. In the present study sample, about 38.9 per cent of the farmers in the study area move from one area to another for these reasons (Table 5.2).

¹ Since the Gulf crisis in 1990-1991, political relations between countries in the region have worsened and agreement on Bedu movement between countries has nearly been abandoned.

Decisions about migration depend on the structure of the domestic economy, the size of the flock, and the availability of transport and household labour. The most remarkable traditional differentiation between nomads and semi-nomads is that the former regularly move from one place to another in search of pastures and grazing areas, whereas semi-nomads only move occasionally, their mobility being governed by good pastures and household circumstances.

In the villages, producers with large flocks make use of the rangelands in years of good rainfall. There are certain cases in the Badia where a farmer may run two households, one nomadic and the other a settled household in the village. These cases may be the result of extended families controlling flocks as seen in this study, or farmers having more than one wife.

5.7 Disease

In recent years, animal diseases have become one of the main factors affecting livestock production. Diseases such as blue tongue, foot-and-mouth and other endemic diseases are reported in the study area. Loss of lambs and high mortality in many flocks were also reported. Low production was identified by experts from the JBRDP as a result of animal diseases. More significantly, several flock owners were experiencing a high mortality rate among their animals. The average loss of lambs was about 7.7 per household during the season (Table 5.4). Campbell, Jones and Roe, (1995) indicate that the current veterinary system has not coped well with this situation.

Table 5.4: Lamb losses by flock size

Flock Size	Mean of lambs lost	No. of flocks
1-100	2.3	106
101-200	9.2	32
201-400	11.4	31
401-800	23.4	17
801+	29.0	7
Total farmer population	7.7	193

Source: Field study conducted by the researcher, 1995

5.8 Lambing season

The *Baladi* and *Najdi* breeds of sheep have the potential to breed throughout the year. However, nutritional factors have a strong influence on lambing patterns and therefore lamb production varies from flock to flock in the study area. Lambing mainly occurs during the winter months, lasting from October until the end of March, with the peak period being from mid-December to the end of January. Nevertheless, some variation in the lambing season can be distinguished (Table 5.5). The information presented in Table 5.5 is based on responses to the question as to what month the lambing season started. It was difficult to obtain accurate figures on the number of lambs lost before birth. Loss of lambs is related to the household's milk needs. In other words, poor households may deprive lambs of their milk by starting to milk ewes too early after birth.

Table 5.5: Timing of lambing season

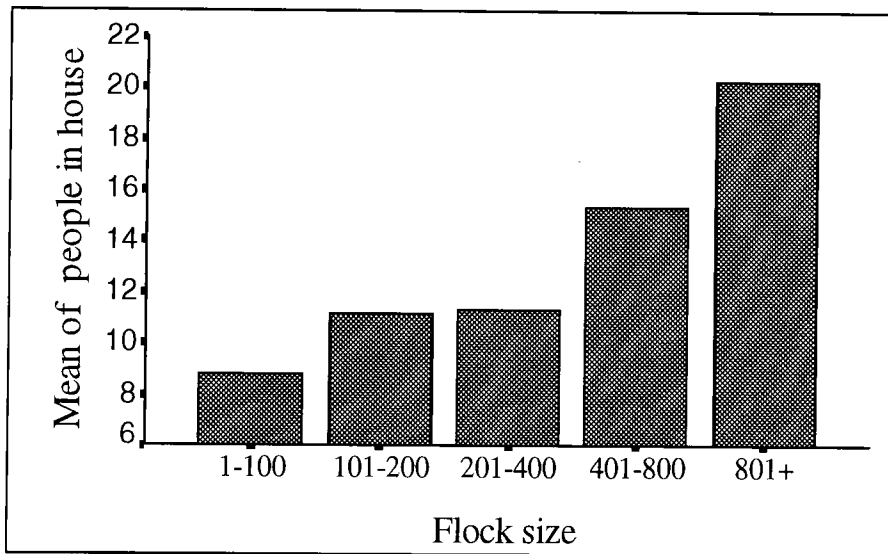
Date of Lambing	No. of flocks	Percentage
October	16	8.3
November	47	24.4
December	105	54.4
February	8	4.1
January	17	8.8
Total	193	100

Source: Field study conducted by the researcher, 1995

5.9 Household structure and labour availability

In the environment of the Bedu farming household, livestock and labour have an inter-dependent relationship, since both resources are under household management. Animal rearing can be seen as a capital-intensive undertaking. Labour capacity is also an important factor in household production and to some extent has an effect on household decisions concerning the number and type of livestock species a household can actually hold and manage at a particular time. Labour requirements for herding are generally determined by the size and the composition of the flock. Wealthy heads of households are found to have more than one wife and this might explain why farmers with larger flock sizes have a larger family size, as shown in Figure 5.2.

Figure 5.2: Number of people in household by flock size



Source: Field study conducted by the researcher, 1995

In order to evaluate household labour as a major input for Bedu production, an analysis of the households' demographic characteristics is presented. Labour capacity per household, age structure and age distribution of household members are recorded. All factors are of major importance for rural development since they have a direct bearing on the level of livestock productivity. In addition, they are fundamental determinants of a household's capacity to generate additional income beyond that necessary to meet the household's basic consumption requirements.

The demographic characteristics of households in the study area are presented in Tables 5.6 and 5.7, and in Figure 5.2. Table 5.6 indicates a common household characteristic in the study area to be large families composed of many dependants. The average household size of the farmers was put at 10.6 persons with 81.4 per cent of households having between six and fifteen members. The distribution of farmers'

households according to the number of people per household is presented in Table 5.7.

Care of flocks requires many working hands, and so whilst a herd should be large enough to meet the subsistence needs of a family, family labour should be equally sufficient to maintain this herd and take full advantage of its resources. Therefore, the size and structure of family labour have to be related to the number of animals in the household (Figure 5.2).

Table 5.6: The distribution of household size

Household size	No. of Households	Percentage
1-5	19	9.8
6-10	95	49.2
11-15	62	32.2
16+	17	8.8
Total	193	100

Source: Field study conducted by the researcher, 1995

Table 5.7: Age of household members in all household

Age Distribution	No. of people	%	Mean
Over 15 years	722	35.3	3.74
Less than 15 years	1323	64.7	6.85
Total	2045	100.0	10.59

Source: Field study conducted by the researcher, 1995

5.10 Employment opportunities

Employment opportunities available to the Bedu other than rearing animals are scarce. The majority of Bedu of working age cannot compete equally in the employment market since they rarely have the skills required for the jobs available. Moreover, women in Bedu communities are tied by the traditional belief that they should not seek employment outside the household. Rearing animals provides household members with a means of securing their survival.

The study found that, in fact, most families had a few members away either working in the army or in the civil service. The main occupations of heads of households in the sample are displayed in Table 5.8. Approximately 80.3 per cent of heads of households' occupations were full-time livestock farming, followed by livestock trading, which accounted for 5.2 per cent. Becoming a merchant or trader, especially in livestock, is a common option for Bedu, but such merchants normally stop producing animals.

Four women were found to be considered as heads of households in the whole sample; three had housewife as their main occupation and the other worked as a cleaner in one of the schools. It should be mentioned here that these different jobs were recorded for the purpose of the analysis. From the information displayed in Table 5.8, there is a strong relationship between the size of flock and the type of job. The more sheep a household owns, the less likely it is for the head of the household to hold a job away from their livestock. Forty four per cent of people over 15 years old maintained jobs away from livestock farming, of whom forty two per cent were

soldiers and the remaining two per cent held different jobs such as teachers, drivers, and manual workers.

Table 5.8: Distribution of farmers by main occupation and flock size

Flock Size	Livestock Farmer (%)	Livestock Trader (%)	Other(%)¹	Total (%)
1-100	73 (37.8)	9 (94.7)	24 (12.4)	106 (54.9)
101-200	28 (14.5)	0	4 (2.1)	32 (16.6)
201-400	31 (16.1)	0	0	31 (16.1)
401-800	16 (8.3)	1 (.5)	0	17 (8.8)
801+	7 (3.6)	0	0	7 (3.6)
Total	155 (80.3)	10 (5.2)	28 (14.5)	193 (100)

Source: Field study conducted by the researcher, 1995

5.11 Household income

At present, Bedu are involved in more than one activity and are able to maintain income from different sources. In addition to this income, which is derived from livestock and livestock products, some household members have other income sources such as army salaries, crop production, hiring out labour and pensions. Because of the large size of a household and the integration between family members, Bedu tend to pool these different income sources. Moreover, Bedu social values make any income calculation difficult. For example, the extreme generosity found in most Bedu households is an element central to their social life, and takes different forms such hospitality, gifts and assistance to relatives (Lancaster, 1981). Therefore, very little is known about the Bedu income at the level of household activities in the

¹ Shop, crop sales and agricultural labour

Bedu production system. Blench (1995), Abu Jaber et al. (1987) and Lancaster (1981) discuss the complexity of calculations concerning the Bedu household income. Expenditures and revenues are hard to calculate since it is difficult to distinguish between long-term and short-obligations, especially with multiple currencies and fluctuating exchange rates. Most Bedu inhabit areas close to regional boundaries and are said to engage in smuggling activities across international boundaries (Abu Jaber et al., 1987).

Abu Jaber et al. (1987) put the average annual income in the Badia at about JD 550 (\$288) which, they claim, is less than half the national level. Whilst they concede that people included in their research may have underestimated their income, they assert that this figure is not so far from reality.

Shukri (1996), in examining the role of women in the household budgeting, points to the difficulty of obtaining correct information. She states: "Also I cannot be sure that all that my informants told me about their household budgeting was true, this being a rather sensitive area of enquiry" (Shukri, 1996, p.132).

Calculations of total household income are beyond the boundaries of this study, since information on a household's expenditure on food and non food items are not easily accessible. In this light and for the purposes of this study, it was decided that percentages of income sources would be the best indicator for reliable information about income as well as flock ownership. Flock size is also of prime importance, and

consequently differences in wealth status or ownership may explain different production objectives of Bedu households.

The income from livestock is always influenced by environmental and climatic conditions. The increased number of animals, as well as reduction in and overgrazing of pastures have led to a reliance on expensive purchased feed. Moreover, despite the traditional role of livestock, today it rarely serves only one purpose, and is used for both meat and milk.

Taking into account the diversity of products or services livestock can provide, products such as meat and milk can either be used for subsistence or as a means of cash income. Furthermore, livestock has an asset and security function and plays an important role in traditional pastoral societies. It is in this context that livestock often appears to be misconceived in terms of both its role and development possibilities.

Livestock can be viewed as a multi-dimensional entity, incorporating capital, consumption and cash value depending upon the perspective and the context. The value of livestock for individual farmers is characterised by a combination of genetic reproductive potential, size and composition of flocks. In general, the risks are higher for small herd-owners than for those with larger flocks.

The Bedu experience cash flow problems throughout the year. In winter, the season when sheep are most costly to keep, the Bedu have almost no income from livestock. They must either borrow feed from feed merchants, receive an advance payment from

other sources such as their cheese-makers, or are forced to sell their sheep. As soon as it is feasible, they start grazing their sheep to reduce their costs, and this requires migration. During winter, they have little to sell; their ewes have just lambed, and by mid-winter the farmers have generally sold their dry ewes. Some farmers may also be forced to sell their female yearlings in order to meet cash needs.

During spring, income is generated through selling milk and milk products. In early summer, wool also brings in some income, and as lambs grow big enough to sell, they bring in the most money during spring and summer. In autumn, the Bedu tend to sell sheep they will not keep for another year, such as old sheep or dry ewes (Oakeley, 1996b; Abu Jaber et al., 1987 and Campbell and Roe, 1995).

The most important source of income to producers is livestock sales. These are principally of young animals and are designed for the slaughter market. Male animals are generally sold, either to the merchants involved in export, to the Gulf or to Amman and other cities. Sheep may be sold to meet the cost of a special event, such as marriage, house construction or car purchase. Animal sales provide the Bedu with nearly three-quarters of their annual income from sheep production.

Milk is the second most important source of income derived from livestock production. Milk can be processed into a great variety of products that are both consumed within the household and sold outside. *Samn* and *laban* are basic ingredients of daily meals; family needs have to be met first and only the surplus is sold. In general, households are keen to sell milk products such as *jammeed* and

samn. It is rare to sell *laban*, although it may be shared with neighbours or relatives and poor people. At the beginning of the season, milk production is used for family consumption, while later, at the beginning of March, milk is produced for the market. The principal channel for dairy income is the sale of fresh milk to the cheese factories that are set up close to the herds during the lambing season (Campbell and Roe, 1995).

The sale of wool is the third source of income from animals. The majority of households shear their sheep for economic and flock health purposes. Some households choose to sell the wool whilst other households tend to use all or part of it for their own household use, especially for marriage purposes and for furniture. The use of wool for households is usually related to a marriage of one of the household members, especially females. Women take the responsibility of making mattresses and this usually requires from 15 to 20 fleeces. The average price received by farmers for each fleece is usually about JD 1.5, at an average weight of roughly 2 kg. unwashed (Blench, 1995).

Respondents stated that the greatest part of net household income was derived from livestock production and the sale of animals and milk, followed by salaries and pensions (Table 5.9). For salaries, this means money paid to male adults employed as regular soldiers or civil servants. This source of income was found to be more important for households with small-scale flocks than with large-scale flocks, the latter giving less importance to their off-farm employed members' earnings. Table 5.11 presents the secondary incomes of households. Salaries accounted for 26 per cent,

and livestock production about 17 per cent. Forty-four percent of households claimed to have no secondary income options.

It should be noted that most households had one or more people in off-farm employment during the study period. In most cases, the jobs were full time and the income derived therefrom was generally ploughed back into the sheep production enterprise. This source of income is considered extremely valuable by small stock households. Employment abroad in Gulf countries can be another source of income for Bedu, although this type of employment has become increasingly difficult to obtain since the Gulf War.

Despite the low rainfall in the area, arable farming is still practised by some households. The most common pattern is rain-fed winter barley and wheat. Yields are so poor that it is difficult to demonstrate that such production is economical. Crop production in the Badia is not profitable except in good years. However, the possibility of high yields encourages the Bedu to cultivate, and if the land cannot be harvested, it can still be grazed.

Table 5.9: Main income of household

Main income	No. of households	Percentage
Livestock production	151	78.2
Salary or pension	33	17.1
Livestock trading	5	2.6
Others ¹	4	2.1
Total	193	100

Source: Field study conducted by the researcher, 1995

Table 5.10: Main income by flock size

Flock Size	Livestock production	Salary or pension	Livestock trading	Other ²	No. of households
1-100	67	31	4	4	106 (54.9)
101-200	30	2	0	0	32 (16.6)
201-400	31	0	0	0	31(16.1)
401-800	16	0	0	0	17(8.8)
801+	7	0	1	0	7 (3.6)
Total	151(78.2)	33 (17.1)	5 (2.6)	4 (2.1)	193 (100)

Source: Field study conducted by the researcher, 1995

Revenue from work other than livestock tasks, according to Tables 5.9 and 5.10, is very low. The major reason for such low additional income is that among the households with large flocks, in only very rare cases were members of the family engaged in other income-generating activities away from the livestock sector. The free labour potential of households can only be absorbed within livestock production.

¹ Shop, crop sales and agricultural labour

² Shop, crop sales and agricultural labour

According to Tables 5.9 and 5.10, most households which rely on income derived from sources other than sheep, are those with a small flock size.

Problems of cash revenue particularly confront smaller households. A low and insecure cash revenue is the major constraint on households in the study area and is capable of negatively influencing a farmer's ability to adopt new strategies such as breeding, stock, veterinary drugs, etc. The cash situation of households is seen as an important indicator of resources available for flocks and livestock investments.

The analysis shows that households with larger flocks generate a higher annual cash revenue than those with smaller flocks. The number of livestock sold and their unit value both increase with the wealth level of households. A trend is suggested in that a household's revenue increases with the number of animals owned. Larger households can generate a net-cash-revenue surplus. Large flock households will meet with few cash-flow problems. With cash available they have more alternatives and can sell their animals more effectively. Greater wealth opens increased possibilities of access to purchased livestock input including veterinary drugs and water. In contrast, current levels of annual cash income of small flock owners are very low and often insufficient to cover their main cash expenditure requirements. In this situation, these households are not able to adopt new production technologies to any significant extent.

Table 5.11: Secondary income of households

Minor Income	No of household	Percentage
Salary or pension	51	26.4
Livestock production	33	17.1
Livestock trading	11	5.7
No secondary income sources	86	44.6
Others ¹	12	6.2
Total	193	100

Source: Field study conducted by the researcher, 1995

5.12 Conclusion

The analysis in this chapter includes a description of the structure of a household's cash income. For the evaluation of household labour as a major input for Bedu production, an analysis of the households' demographic characteristics like labour capacity per household, age structure and age distribution of household members was undertaken. All factors are of major importance to rural development since they have a direct bearing on the level of livestock productivity. In addition, they are fundamental determinants of a household's capacity to generate additional income beyond that necessary to meet the household's basic consumption requirements. The analysis indicates that a common household characteristic in the study area is a large family composed of many dependants. The average household consists of 10.5 persons, of whom the majority are children (average 6.9).

¹ Shop, crop sales and agricultural labour

Household production labour depends mainly on available adult workers, although members of households of all ages from six upwards, participate in some way in household activities.

Growing labour opportunities in the domestic, urban, and international markets become a constraint facing this type of production, especially in shepherding.

The size of a flock in a household has been governed by the mobility of the labour force and the choice over the schooling issue. Most Bedu producers see mobility as profitable management, however, for the above-mentioned reasons it has become hard to cope with the settled life. This has also been conditioned by the availability of household labour.

Livestock in the Bedu production system rarely serve a single purpose such as the provision of meat, and it is common to rear livestock for multiple purposes. Milk is mainly a subsistence product and is estimated to contribute a high percentage to family consumption in the milking season. Moreover, livestock is considered the most important capital for Bedu. Taking into account the circumstances of Bedu life, it is reasonable to assume that the quantity of animals rather than the quality is the main preoccupation in a household.

Chapter Six

Producers' sales patterns

Introduction

This chapter presents the results of producers' sales patterns and other marketing issues emerging from the analysis of the data. The chapter is divided into three main sections: the first section is concerned with the household's management in relation to its marketing practices. This section is organised under the following headings: organisation of marketed livestock, household weaning strategies and marketing, producers' sales strategies and preferences. Section two presents the results of farmers' marketing decisions in relation to price information, grading, price response and price analysis. Section three discusses constraints facing farmers in relation to their marketing decisions. Producers' imposed marketing decisions, household marketing strategies, and marketing arrangements are the main heading under this section.

6.1 Household management in relation to its marketing practices.

6.1.1 Organisation of marketed livestock

Diversity in livestock production in traditional systems is a result of climatic, economic, social and political forces. These factors affect livestock mortality, reproduction and sales as well as the movement and distribution of livestock.

Consequently, producers' behaviour is a result of the complex interaction of these forces.

Under Bedu management, the sale of animals takes place every year and sale strategies vary. In the past, young females were retained to replace older ewes in order to build up breeding stock, and only a few males were kept for reproduction whilst the rest were sold. Some livestock farmers held animals as a store of wealth, and so only sold animals to meet cash needs rather than to maximise income. In other words, this was the case when farmers focused on production rather than commerce. Today, some changes in their attitudes to sale can be identified, but they are still far from being commercial producers. The composition of animals per household has changed dramatically in the Badia. This shift in the composition of animals has been reported in other pastoral communities in the Middle East and Africa (Ensminger, 1992 and Wachholtz, 1996). The maintenance of a large number of animals has become concentrated, with the majority of households being left with a small flock size. Ensminger, (1992, p. 3) notes for example:

The means of production have fallen into relatively few hands, and at least some of the poor are left with no choice but to labour for those few. The percentage of livestock controlled by the poorest sector of the population of livestock has consistently been shrinking....Small holders are increasingly turning to wage labour and trade as they lose control over stock (the primary means of production).

The sheep and goat rearing system in the Badia now falls into two dominant categories: the semi-settled and the nomadic. Most sheep and goat farmers are Bedu who are scattered throughout the Badia. Owners of large-scale flocks are mobile for most of the year, although their flocks are now larger than before, with an average of

about 300 head (Nesheiwat, 1991). Movement has been restricted by the need for trucks, shepherds and family labour. The use of trucks and improved roads has also enabled settled Bedu to move with animals to look for good pastures. However, it is not easy to draw a distinct line between settled Bedu in the Badia and nomadic people.

In the study area, the number of livestock has been forced to adjust to present environmental resources available. Furthermore, changes in the structure of livestock organisation have contributed to the shrinking number of animals per household and to an increase in other households. Inputs in the production of livestock, especially feed, have become one of the main constraints forcing this kind of reduction. According to Roe (1996), feed input accounted for 70 per cent of the total costs in livestock production for the period 1995-6.

Taking into account the sale of animals by household in relation to the above, further variation among farmers can be found. Wealthier farmers tend to keep animals for longer and then sell them at 3-4 months of age. The same constraints mentioned above, such as the economic, social, political, environmental, and demographic characteristics of a household, influence the flow of animals to the market. Table 6.1 shows that such a flow of young lambs seems to be the case among some of the small livestock farmers. Table 6.2 also indicates the sale of animals by type. Sales of male lambs are the highest, followed by female lambs.

Table 6.1: Sale of lambs by age

	2 mths	3 mths	4 mths	5 mths	6 mths	
Flock Size	no. of flocks	no. of flocks	no. of flocks	no. of flocks	no. of flocks	Total (%)
1-100	10	51	23	13	9	106 (54.9)
101-200	4	17	9	1	1	32 (16.6)
201-400	1	9	16	3	2	31 (16.1)
401-800	0	2	6	6	3	17 (8.8)
801+	0	0	1	6	0	7 (3.6)
Total (%)	15 (7.8)	79 (40.9)	55 (28.5)	29 (15.0)	15 (7.8)	193(100.0)

Source: Field study conducted by the researcher, 1995

Table 6.2: Type of animals sold by flock size

	Male lambs	Female & male lambs	Ewes & babies	
Flock Size	no. of flocks	no. of flocks	no. of flocks	Total (%)
1-100	102	3	1	106(54.9)
101-200	30	2	0	32(16.6)
201-400	30	1	0	31(16.2)
401-800	16	0	1	17 (8.8)
801+	7	0	0	7 (3.6)
Total (%)	185 (95.9)	6 (3.1)	2 (1.0)	193 (100.0)

Source: Field study conducted by the researcher, 1995

The sale of livestock in the study area appears to take place throughout the year. Early lambs come on to the market as early as November or December and continue until September. The sale of sheep and new-born lambs generally occurs in the early part of the year. The sale of lambs reaches its peak from late February until early May

(Table 6.3). With the intention of keeping their flocks healthy, some farmers sell new-born lambs together with the old and weak sheep in order to secure the sale. The timing of livestock sales is usually a response to different constraints such as the health of the animals, the cost of feed, disease, risk, the cash needs of the producers, and the demand for animals. Purchase of animal feed and payment of debts were the main reasons for sale.

Table 6.3: Time of livestock sale within the sample¹

Date of Sale	No. of flocks	Per cent
Winter (Nov.-March)	31	16.1
Spring (March-May)	88	45.6
Summer (May-Nov.)	74	38.3
Total	193	100

Source: Field study conducted by the researcher, 1995

6.1.2 Households' weaning strategies and marketing

Male lambs may be partially weaned at 6-10 weeks of age if the fodder situation so allows. They are usually completely weaned at approximately 2-3 months of age. Complete weaning of both male and female lambs at the same time is followed by 1-3 months of milking time. Partial weaning may take place one month before complete weaning if the forage supply is adequate. This system is practised by almost all small farmers. The female lambs may suckle until the end of the lactation period, being

¹ Farmers were asked to state their total number of sales per annum.

partially weaned from the age of 6-10 weeks onward (separation at night), depending on the condition of the ewe and the state of grazing.

Sometimes, all lambs born in the same period are completely weaned at the same time and herded by young people. Ewe-lambs are returned to the breeding flock after one month in this weaner flock. Male lambs will be fattened at home or on grazing, or will be sold without fattening. Due to social values and perceptions toward the occupation of shepherding, there is a shortage of shepherds and so a number of different management styles have been developed to meet this obligation.

In the study, producers are not directly involved in fattening, as they tend to sell their animals directly in the market. However, large flock owners have developed a new strategy in weaning practices to get better prices by extending the weaning age¹ for as long a time as possible. Most producers stated that they only wean their lambs at the end of the spring, with the exception of early born lambs, which are sold directly to cover some of the expenses. In many cases, it was found that some producers practise very late weaning to get a better price for their lambs (Table 6.4).

However, other producers were aware of the good prices they would receive if they let their lambs grow and reach a weight 30 kg or more. In reality, lambs are sold at a young age with an average weight of 20 kg. (Blench, 1995). The age of sold lambs ranges from two to six months depending on the type of household. Weaning strategies for female lambs were different to those for male lambs. Female lambs

¹ The majority of Bedu farmers believe 75 days is the minimum age to wean lambs.

were weaned between two to three months of age, except for those kept as herd replacements. Some livestock farmers do not produce milk commercially at all and the majority of these farmers are normally large stock farmers (Table 6.5). Weaning styles vary among livestock holders in the area. Farmers with large flocks let lambs suckle up to 4-5 months until the date of sale, whereas small stock farmers tend to separate lambs during the day and free them at night. This can be explained by the fact that small farmers rely on milk for household and commercial purposes.

Table 6.4: Weaning patterns by flock size

	Less than 3 Months	Over 3 Months	Don't wean at all	No. of farmers
Flock Size	no. of flocks	no. of flocks	no. of flocks	Total
1-100 (%)	68 (64.2)	19 (17.9)	19 (17.9)	106
101-200 (%)	17 (53.1)	6 (18.8)	9 (28.1)	32
201-400 (%)	5 (16.1)	8 (25.8)	18 (58.1)	31
401-800 (%)	4 (23.5)	5 (29.4)	8 (47.1)	17
801+ (%)	1 (14.3)	2 (28.6)	4 (57.1)	7
Total	95	40	58	193

Source: Field study conducted by the researcher, 1995

When respondents were asked about their satisfaction with the prices they received this season compared to the previous season, 52.8 per cent were not satisfied, compared to 3.6 per cent who were satisfied. Forty-three per cent said prices were the same as those received in 1994. However, about 64 per cent said low export potential was the reason affecting prices, indicating their dissatisfaction with the price of the current year compared to the previous year.

Respondents were asked about the best place to sell animals, and all farmers preferred to sell at the location of the flock. Farmers stated many reasons for this. Taking animals to market always involves expense, especially transport. Another reason stated was that taking animals to market limited their choice of sale. They claimed taking animals to market is an indication of an emergency sale which in turn may incur the cost of bringing unsold animals back home again, making them more vulnerable while bargaining.

Sale on short term credit was observed in the study area. According to both farmers and merchants, this pattern of sale used to be common. However, lack of trust among producers makes this style of sale rare and requires high creditability of traders. This is because many producers have experienced no repayment for their animals. Sixty-six per cent of producers claim they do not sell on credit at all, whereas 32 per cent still practise this type of sale if they know the traders personally.

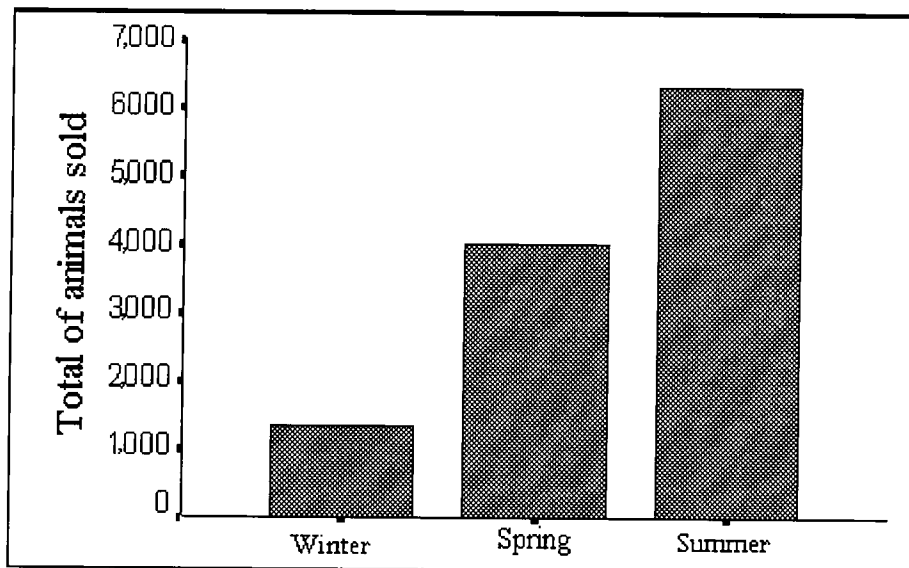
Traders usually roam the Badia searching for animals to purchase. It was observed that owners of large flocks were targeted by these traders. In the sample, about 39

per cent of respondents were visited more than once this season by buyers in search of livestock.

In terms of wealth, the extent to which household finances are flexible is extremely important as they can affect freedom of choice, particularly with regard to decisions about age and date of sale. Beside the necessity for cash, other factors may force farmers to market their animals against their wishes. Labour, feed, and disease all appear to have significant effects on the timing of marketing decisions. More than 26 per cent of the farmers in the sample replied that they sold because of disease and the cost of feed. Weather conditions, especially high temperatures, are also among the many factors which force farmers to sell early. This idea that farmers do not sell their livestock at a seasonally opportune time is based on the view that farmers' cash flow needs outweigh all other considerations and result in sales of livestock during periods of low prices.

It should be mentioned here that the variable 'date of sale' was altered to facilitate some of the analysis. Livestock sales were categorised into three periods: winter (Nov-March), spring (March-May) and summer (May-Nov). Figure 6.1 shows the seasonal variations in livestock sales by number in the sample. The flow of animals to the market is very low in winter, as would be expected early in the year. Sales increase from late February to June, and reach their peak in the summer. During these three seasons, animal sales increase almost continuously from February to the end of August, and then decline from October to the following February.

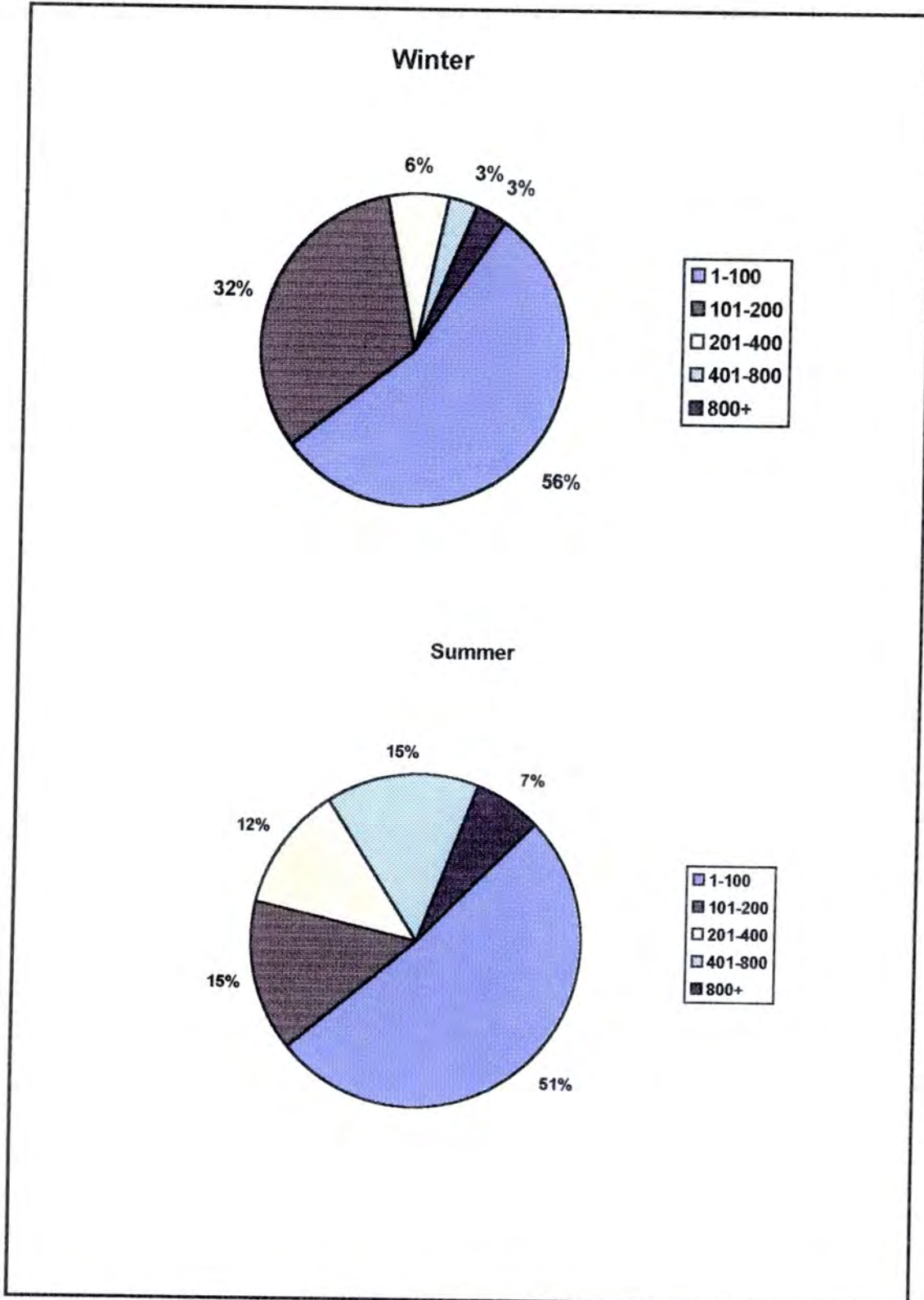
Figure 6.1: Total number of animals sold by season



Source: Field study conducted by the researcher, 1995

Figure 6.2 draws a comparison between sale in winter and summer. The early flow of animals in January and February to the market from both small (less than 200 head) and large (more than 200 head) flock producers over the year is illustrated in Figure 6.2. It shows significant differences in the timing of sales between small and larger holders. Moreover, it illustrates clearly that well-off households benefit from their wealth and are able to withhold animals for longer in order to wait for better prices. Lambs are in their best physical condition after spring (early May) when they have finished suckling. Households which rely heavily on milk production are generally smallholders with small flocks. These households tend to sell their animals before the weaning age and separate lambs from their mothers when they are still young in order to use the milk for the household. Larger flock holders tend to do the opposite, and leave lambs for as long as possible since milking animals requires greater effort and is labour consuming.

Figure 6.2: Winter and summer sale by flock size



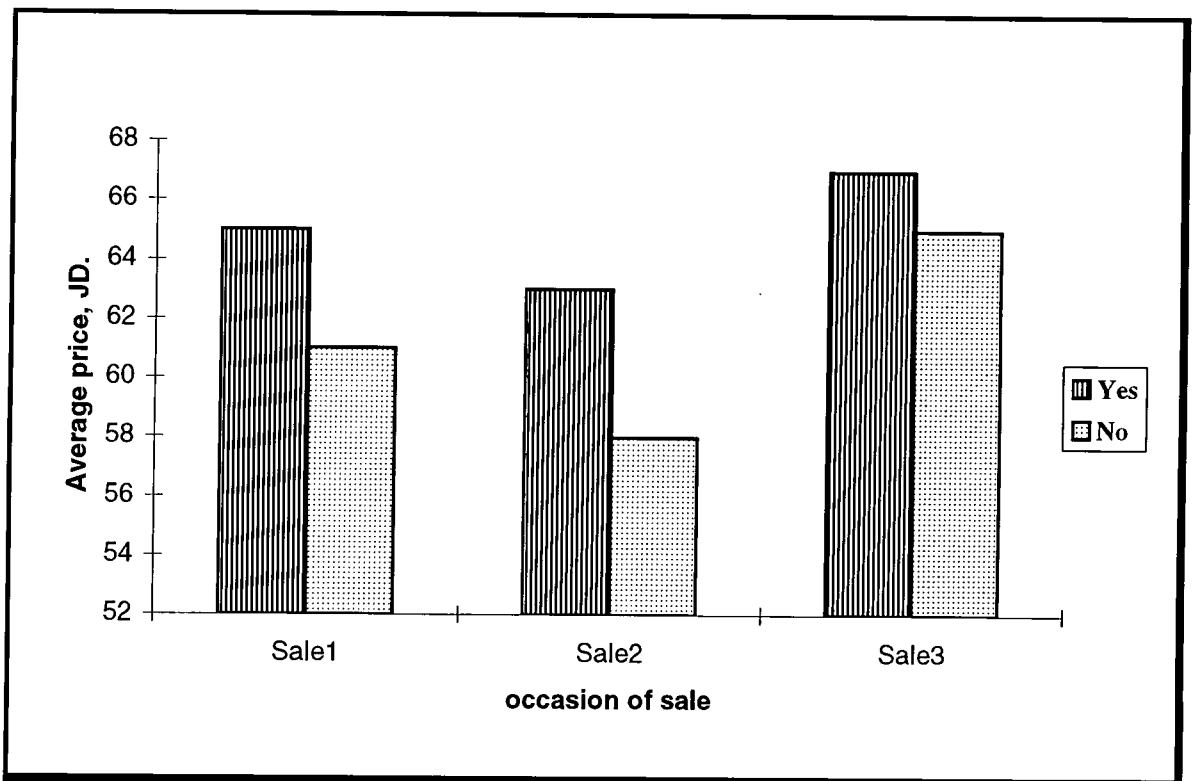
Source: Field study conducted by the researcher, 1995

6.2 Marketing decisions in relation to price information, grading and price analysis

6.2.1 Price information

Most farmers claimed an awareness of price variations. Most also reported that they thought prices rose during spring. Almost 70 per cent of the sample indicated that they collect price information before the sale of their animals, generally by word of mouth. The farmers' sources of information included other farmers, traders, friends and relatives, and visits to main markets. Farmers claimed an awareness of price information even when they did not sell. Figure 6.3 gives the average price received by farmers who collected price information and by those who did not. From the statistical analysis, the difference between the higher prices received by informed sellers and the lower prices received by those without market information was significant.

Figure 6.3: Average price received by price information



Source: Field study conducted by the researcher, 1995

While some producers were up-to-date on detailed and immediate changes in market conditions at regional markets or the export marketing chain, they all seemed to have some information and awareness of general changes in market conditions that ultimately affect them. All of this information travels by word of mouth. Table 6.6 shows the market information sources. Some farmers indicate that they pay a visit to the market before the time of sale, as shown in Table 6.6.

Table 6.6: Source of market information

Source of Information	Percentage of households
No gathering	30.1
From farmers	36.3
From traders	3.1
From outlet-markets	13.0
From farmers and traders	17.6
Total	100.0

Source: Field study conducted by the researcher, 1995

Table 6.7: Timing of market information

Timing of Information	Percentage of households
No information	30.1
2 days before the sale	11.4
2-7 days before sale	17.1
More than 7 days before sale	32.6
Other	8.8
Total	100.0

Source: Field study conducted by the researcher, 1995

6.2.2 Grading

Farmers' reasons for choosing particular methods of selling were given in reply to questions dealing with the marketing decisions made during the year. The majority of statements made by the household sample favoured selling animals on a per capita basis. Bedu producers favour sale per head rather than weight for different reasons. Producers stated that they did not trust buyers who bought by weight. This can be

explained by the fact that illiteracy in the Badia is high among producers, at around 90 per cent, and so many producers are unable to read the scales. Secondly, they think that traders can fix the scales and so do not want to take such a risk. Thirdly, producers mix weak and unhealthy animals with the good ones in order to sell them.

Lack of trust in some producers was also found amongst traders. They complained of finding out that an animal was ill and being forced to adopt a strategy of selling an animal after one or two days' maximum, rather than being in a position to wait for demand to increase. Ideally, they would like farmers to stop the habit of mixing the odd sick animal with the rest of the purchased animals. It is probably the case that farmers do not understand or underestimate the gains to be made from selling on a grading basis.

Applying a grading system that works for both producers and traders might benefit all participants in the livestock trading system. Grading and sorting out animals for sale according to their condition will contribute to both operational and pricing efficiency. In addition to gaining traders' trust, grading generates more accurate market information and price discovery. Grading can reduce the transporting costs when good animals can be sold further afield and animals in a poorer condition can be sold at local markets. Farmers might also benefit from the competition and price efficiency resulting from a good grading system.

6.2.3 Price response and the Badia producers

The evaluation of livestock prices is a difficult task due to the complexity of the livestock business. Prices for livestock are reached through bargaining between seller(s) and buyer(s). Animals can be sold either as a group or individually, or sometimes in mixed groups; in most cases, prices are determined on the same basis. Animals are generally sold per head, and it is rare to find sellers who prefer sale by weight. Buyers value the animal for the immediate return of meat production, and manually check the quantity and quality of meat that each animal will yield. Traders also value the condition and health of the animal.

One of the problems in studying livestock prices is the difficulty involved in collecting information on prices from traders who are cautious about discussing the matter. Another problem is finding an appropriate standard on which to base prices. There is no literature to be found, such as annual reports, concerning prices. Farmers claim that livestock prices have risen considerably over the past decade, and that sheep and lamb prices have doubled since 1988. This was confirmed in interviews with farmers, traders, butchers, and government officials throughout the Badia. However, the real reason for the apparent change in prices can be accounted for by the fall in the value of the JD against the US dollar. In 1988-89, the Jordanian economy collapsed as a result of overall debt which stood at about US\$ 6.6 billion, approximately 107 percent of GDP. Since then the dinar has witnessed an average depreciation of nearly 5.5 percent. Including today's fixed rate, this depreciation has reached approximately 7 percent, by fixing the local currency at a relatively weak level, compared to historical positions. At present, the value of the dinar has fluctuated slightly in line with other

international currencies, but in recent years has maintained an average value of around \$1.4 per dinar. (The Economist Intelligence Unit, 1993/94).

Livestock prices can be expected to vary from area to area or market according to transporting costs. The anticipation is that prices vary with the distance from outlet markets or points of export embarkation. However, variations in prices between markets are difficult to evaluate because of the lack of information on prices and animal weight and condition in different markets. Since prices are given per head and not in units of weight, it is difficult to make comparisons. For example, Oakeley (1996a) found that the prices given for males in the Mafraq market were lower than those recorded in Ruwayshid market, rather than the expected opposite¹. These prices do not take into account the different size and quality of animals sold in each market. Illegal trade and cross-border trade of animals from Syria and Iraq can affect prices, especially if large numbers enter the market at one time. It is impossible to estimate the volume and value of cross-border trade. For example, Oakeley (1996a) found prices in a market close to the production area higher than prices in a more distant market for the same animal. A likely explanation for this could be that animals were smuggled across the border to Saudi Arabia.

Another problem involving prices is that farmers tend to mix weak animals with good animals and this in turn reduces the price most of the time. It is then difficult to estimate the price per head. Traders are sometimes able to pick animals from a flock and this will require a higher price to be paid. At other times traders will buy all

¹ Ruwayshid market is located in the center of the livestock production area and therefore prices in this market are expected to be less than price in the Mafraq market.

animals, save some, and so require a different price arrangement. The age of animals is an important selling factor. For example, two month old lambs attract better prices than older lambs.

Social factors in the Bedu production system can have a greater influence on producers than even price response. For example, Bedu will prefer to hold back female animals during times of peak prices, if they are not in urgent need for cash and their environmental conditions so allow. Social values based on the ownership of livestock are also still important, and many Bedu will choose to increase their stock rather than sell. As a result, if the price is high, fewer animals are likely to be sold because farmers will be able to meet their costs more easily.

Although Bedu prefer to build their stock and hold animals, the increased demand for meat in the region has resulted in a greater number of animals in the Badia. The greatly increased demand in regional markets for livestock for Saudi Arabia has led to an increase in the production and trade of sheep and goats. This together with other factors has encouraged Bedu to market more animals.

6.2.3.1 Increased demand for meat

The increased demand for meat has also motivated Bedu to enter the trade organisation, and for many this has become an important source of income. As Bedu cross national borders¹, or camp close to regional borders, it is almost impossible to work out exactly how many of the animals sold in Jordan are actually produced in the

¹ Jordanian Bedu were allowed to cross to Iraq and Saudi Arabia until the mid 1980s.

country (Oakeley, 1996a). The rapid increase in livestock exports from the late 1970s into the 1990s shows there is a market response to growing marketing opportunities (Randhawa, 1990). Most producers have become increasingly involved in livestock sales. Bedu offtake rates fluctuate widely over time, depending on whether a particular period is one of relative growth, decline, or stability in herd and flock numbers (Oakeley, 1996a).

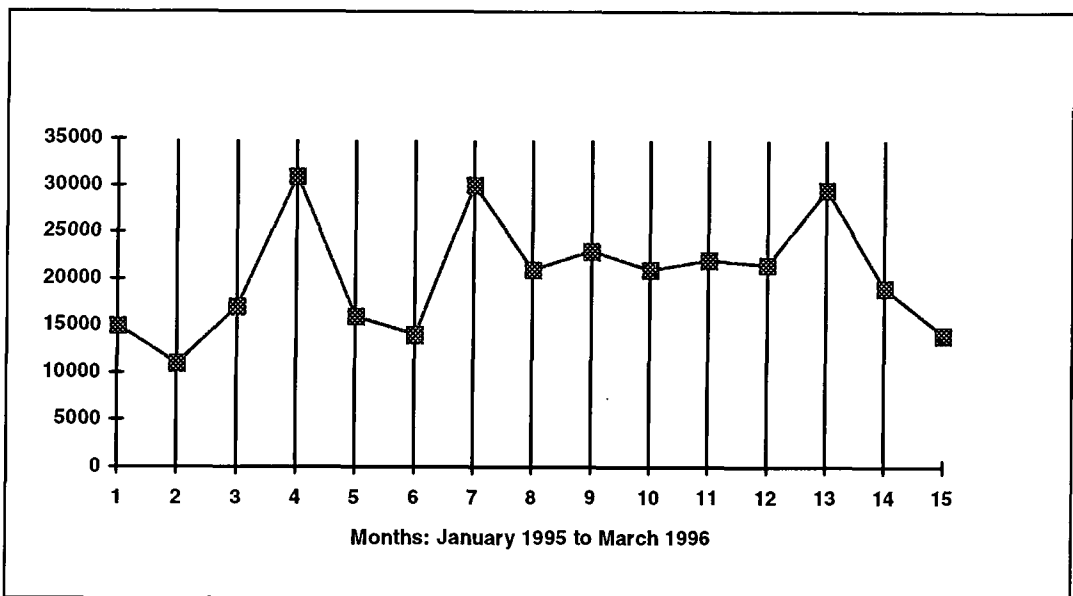
6.2.3.2 Religious festivals

The sale of livestock is heavily influenced by religious festivals in the region. This usually happens about two months before these festivals actually take place, when sellers of animals hold their sale in expectation of higher prices. In *Ramadan* and the *Eid* festival, price rises are significant because of the greater consumption of red meat during these periods. *Eid Al Adha* is a very important time for sale since most households in the region will slaughter at least one animal, in accordance with Islamic tradition. Furthermore, each Moslem practising the pilgrimage (*Hadj*) has to slaughter a lamb or sheep in *Mecca*. As a result, the number of exported animals increases dramatically. Live exports of animals in 1995 reached a peak in April as a result of *Eid Al Adha*, and a peak in January 1996 with *Ramadan*, as shown in Figure 6.4. The effect of these religious festivals can simply be to cause variation in animal prices depending on the season and the particular festival being celebrated (Oakeley, 1996a).

The timing of these determining factors of supply and demand is not fixed, but varies yearly according to the lunar month. In the last two years the timing of these

occasions has suited producers since *Eid Al Adha* took place in late April/early May. In 1995, *Ramadan* and *Eid Al Fiter* took place late January and late February respectively. Some of the farmers interviewed stated that they take such occasions into consideration when they want to sell animals, by holding their sale for these times.

Figure 6.4: Live lamb and kid export to Gulf States January 1995 to March 1996



Source: Based on Oakeley, 1996a

6.2.3.3 Consumer taste

Consumers of red meat in the Middle East are known for their loyalty to *Awassi* meat. For example, the *Awassi* are a valued source of meat and receive the highest price in the Middle East. Despite this fact, *Awassi* meat is still classified according to age, sex and weight, with lambs preferred over sheep for their meat. Moreover, male lambs' meat is favoured over the meat of females, and younger males over older males. Consumer taste usually attracts producers into selling animals under the age of 75 days. For example, the favoured age for male lamb meat is two months or less, and

not yet weaned. Usually prices for these male lambs are high and it is considered to be the most expensive meat. This can also be assumed to be one of the main factors behind the sale per head rather than weight in the region. The consumer preferences for meat from young lambs is one of the main elements of the present marketing forces in the Badia. This element will continue to encourage the tendency of buyers toward the purchase of young animals as well as the early sale of lambs, despite the economic argument that higher sale weights will increase producers' profitability. Oakeley (1996a, p. 43) expands upon this issue:

This has in the past, and will continue in the near future, to restrain moves to increase growth rates and selling weight of Badia lambs. Despite the economic arguments for higher sale weights in raising producer profitability... and pressure from foreign livestock importers, the market does not currently want heavier lambs. A more efficient livestock industry in terms [of] meat production will not be possible unless buying patterns and more significantly consumer preferences can be encouraged to change (Oakeley, 1996, p. 43).

6.2.4 Price analysis

Bedu livestock marketing decisions are affected by a variety of factors which are important in order to identify and understand constraints. It is more important however, to identify any differences that exist among Bedu households in terms of marketing decisions. For example, larger flock owners in the Badia seem to have a better ability to respond to opportunity than small flock holders. Marketing strategy alternatives of a household under traditional conditions are complex and so require the application of more than one procedure of analysis. Cossins (1983, p. 226)) states:

The decisions and strategy alternatives facing a pastoralist are no less complex than those facing a western rancher, and because he may have

less control over his resources, and the use of these resources involves more human labour, the organisation and decisions required of a pastoralist may be even more complex.

Examining price variations for lamb sales by household is the main focus of this section. In this study, analysis of price variations is not the sole indicator for examining producers' sale behaviour. It is only an attempt to estimate and test for effects on price by several important variables using analysis of variance and applying different variables where possible. The results of such an analysis will give more insight into some of the issues raised earlier in Chapter Five, and will be discussed later in this chapter. Understanding the main effect of related variables on price will direct the focus of the analysis on obtaining results by applying them to other household characteristics.

Livestock price analysis requires a knowledge of animal characteristics, general supply and demand conditions, and conditions of the transaction. Livestock price per head and live-weight can be analysed according to animal characteristics such as breed, age and sex. In order to overcome the issue of weight, the researcher can apply animal characteristics in the analysis of price. This can be done by relating price to breed, sex, age, season, volume of supply and the number of buyers in the market (Bekure and Tilahun, 1983). Analysis of variance was seen as more appropriate, along with Pearson correlation coefficients. Besides sex, breed and age, the variables of time and place of sale, price information and buyers were included in the analysis. As farmers in this study mentioned more than one occasion of sale, information was collected on the first three occasions of sale. Some households sold animals at

different times of the year, according to the characteristics of their household condition and their number of animals.

It should be mentioned that the analysis was only of male and female lambs. Data on sale of sheep were omitted to facilitate the analysis of variance because sale of sheep represents a low number and receives higher prices. Therefore, in sale one the total number of households is reduced by three, sale two by three and sale three reduced by six households. The total number of cases in each sale was then as follows: sale 1 (190), sale 2 (118) and sale 3 (42). Price analysis included the following variables: farmers' price information, type of animals and age of animals sold¹, date of sale, place of sale, reason for sale², type of payment and buyers' destination. Reasons for sale given by farmers are categorised under the following: purchase of animal feed, debts, cost and risk, daily household expenses, truck maintenance, household construction and disease. Debts were found to be related to purchase of feed. The reason given for sale was 'to avoid risk and cost'. In other words, farmers do not like to keep their lambs longer than necessary, fearing disease and input costs. Each occasion of sale will be discussed separately in the following section.

6.2.4.1 First sale

Pearson correlation coefficients were estimated for the major variables affecting the variation of prices received by households (Table 6.8a). Price was found to be strongly correlated with age, information, payment, place, reasons for sale and type of

¹ Due the absence of weight information, information on age was collected to give an indication of the weight of animals. It is expected the older the animal the greater its weight.

² Reasons for sale were generated by farmers

animals sold. The same variables used in Pearson correlation coefficients were used in an analysis of variance using the Anova method. Table 6.8 presents the results of the estimation of the effect of independent variables against price variations. The analysis of variance better explains the variation in prices, which was largely due to the effects of age and 'reasons for sale' followed by 'price information' respectively.

Table 6.8a: Coefficient of correlation between factors of sales (sale 1)

	Agesal	Buysal	Datesal	Informa	Paymsal	pricsa.1	placsa.1	reassal	typsal
Agesal	1.0000	.0142	.4471**	.2460**	.3291**	.4931**	.2512**	.0643	.2338**
Buysal	.0142	1.0000	.0166	.2048**	.0723	.0720	.2637**	.1426*	.0575
Datesal	.4471**	.0166	1.0000	.1818*	.1461*	.1326	.2223**	.0618	.1995**
Informa	.2460**	.2048**	.1818*	1.0000	.2095**	.2829**	.2663**	.0746	.0430
Paymsal	.3291**	.0723	.1461*	.2095**	1.0000	.3801**	.2525**	.2306**	.2710**
Pricsal	.4931**	.0720	.1326	.2829**	.3801**	1.0000	.1396	.2147**	.3425**
Placsa1	.2512**	.2637**	.2223**	.2663**	.2525**	.1396	1.0000	.0804	.0500
Reassal	.0643	.1426*	.0618	.0746	.2306**	.2147**	.0804	1.0000	.0010
Typsal	.2338**	.0575	.1995**	.0430	.2710**	.3425**	.0500	.0010	1.000

Source: Field study conducted by the researcher, 1995

Agesal = age of animals sold(in months)

Buysa.1 = type of buyer animals sold to

Datesa.1 = date of sale (in months)

Informa = gathering price information before sale took place

Paymsal = term of payment (cash or credit)

Pricsa1 = price received for each animal sold

Reassal = reasons for sale of animal(s)

*sign if. le ,05 **sign if. le ,01 (2 tailed)

Table 6.8: Sale 1: analysis of variance (Anova output)

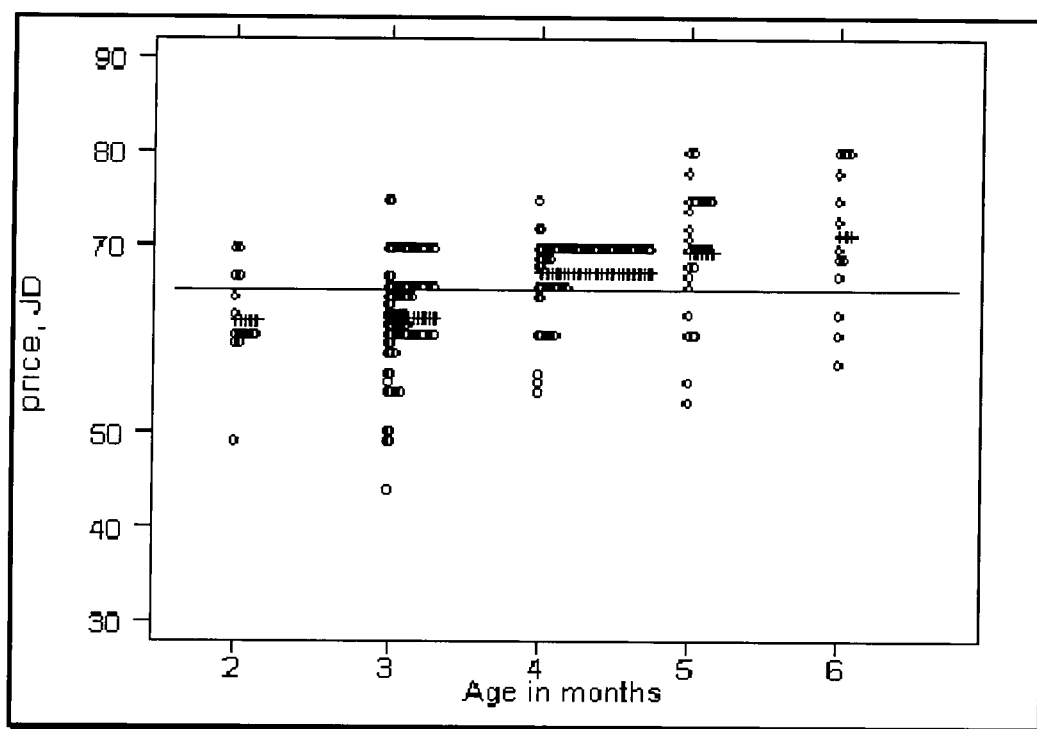
Number of obs = 190			Rsquared = 0.4			
Root MSE = 6.4			Adj Rsquared = 0.4			
	Source	Partial SS	df	MS	F	Prob > F
	Model	5254.9	25	210.2	5.19	0.0000
1	Age of animals sold	1070.0	4	267.5	60.6	0.0001
2	Reasons for sale	748.8	5	156.9	3.9	0.0024
3	Information	317.7	1	317.6	7.8	0.0057
4	Type of animals	188.7	1	188.7	4.7	0.0324
5	Date of sale	418.4	6	69.7	1.7	0.1191
6	Buyer	205.3	5	41.1	1.0	0.4115
7	Place of sale	8.7	1	8.6	0.2	0.6449
8	Payment	7.1	2	3.5	0.1	0.9165
	Residual	6645.1	164	40.5		
	Total	11899.9	189	62.9		

Source: Field study conducted by the researcher, 1995

1) Age of animals

Most households indicated a preference for keeping animals for as long as possible if household conditions so allowed. Lambs were sold over a range of ages for which an age-weight relationship was illustrated. The price-age relationship was significant at 0.0001 (Table 6.8). The price-age relationship is shown by plotting the mean price by age in months (Figure 6.5). The structure of the effect of age on price indicates that price first declined to a minimum, and then increased with age.

Figure 6.5: Sale 1: Age of animals in months by price received



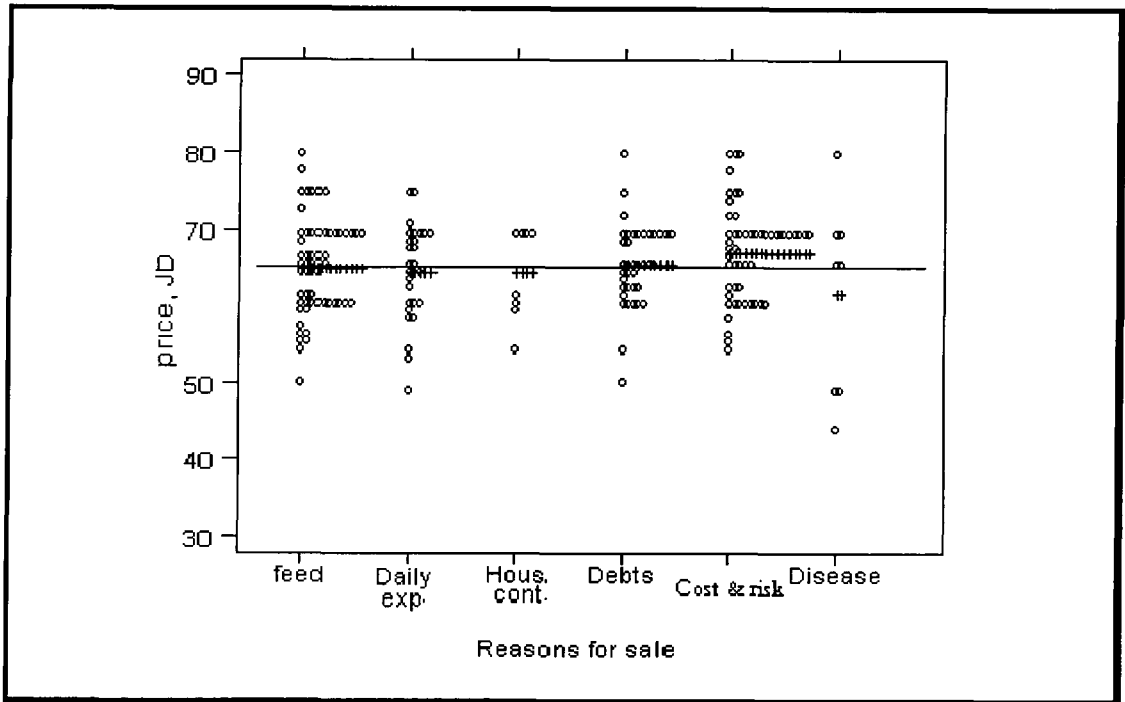
Source: Field study conducted by the researcher, 1995

2) Reasons for sale

Reasons for sale are related to the need for cash liquidity. The effect of reasons for sale are almost the same as that of age of sale on price. The reason-price relationship was significant at 0.0024 level (Table 6.8). Households which sold for reasons of daily household expenses, debts, household needs for milk and disease received lower prices than households selling for reasons of feed, cost and risk. Households who sold their animals to avoid costs and risks appeared to receive the best prices. The effect of reasons for sale on price is shown by plotting the mean price by each of the reasons for sale (Figure 6.6). Cash raised from the sale of animals was mainly spent on daily household expenses such as food, clothing, transport, livestock input and payment of debts. The only reasons mentioned by households for sale which were not

to do with raising cash were cost and high risk. In other words, households indicated that they wanted to reduce costs and avoid disease.

Figure 6.6: Sale 1: reasons for sale by price received

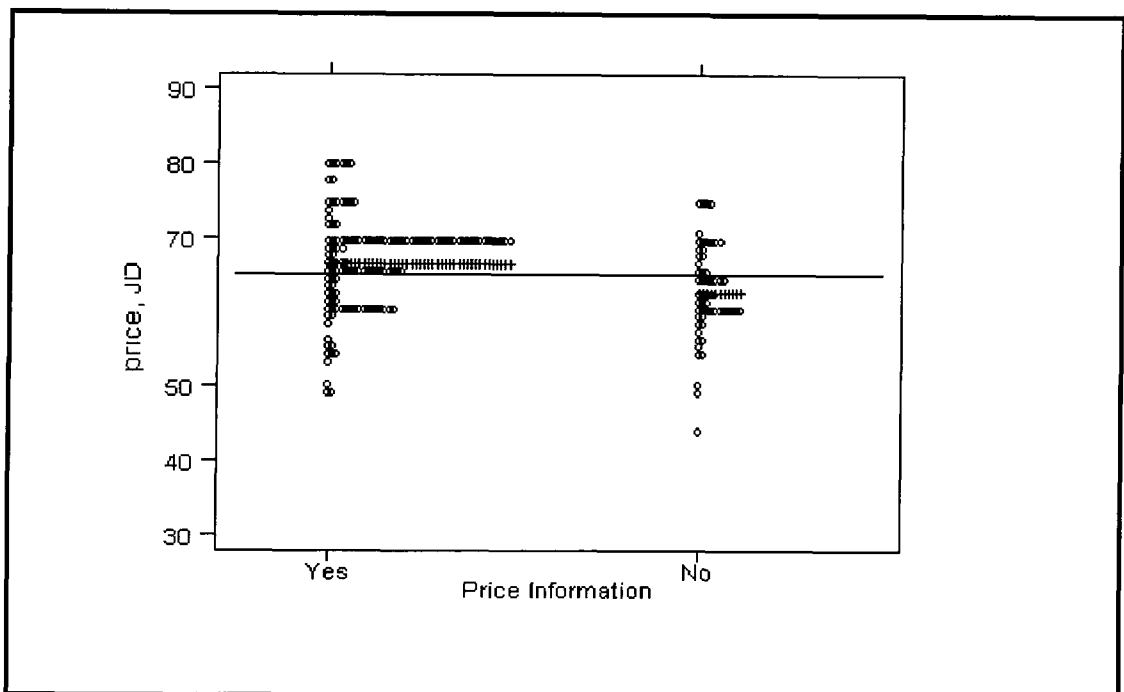


Source: Field study conducted by the researcher, 1995

3) Price information

Market price information shows a significant effect on prices at 0.0057 level. Households who collected price information before sale took place received significantly higher prices than uninformed households when selling animals. The collection of price information also indicated that farmers might have a better bargaining ability and knowledge of market conditions (Figure 6.7).

Figure 6.7: Sale 1: Price information by price received



Source: Field study conducted by the researcher, 1995

4) Type of animals

Male lambs received higher prices than female lambs. The effect of type of animals sold on price was not significant. Most animals sold were male lambs and accounted for about 95 per cent. However, sale of female lambs is an indication of financial constraints in a household.

5) Date of sale

Date of sale did not indicate any significant differences in relation to prices received by households. This can be explained by the fact that most of the first sales by household occurred in a short period, from March to May (82.9 per cent).

6) Place of sale

The analysis indicates that place of sale had no significant impact on price. However, farmers who sold in formal markets tended to receive lower prices compared with farmers who sold on location of their sheep. The only explanation for the non-significance for market type is that 81.4 % of farmers sold animals on location.

7) Type of buyer

The results indicated that there is no significant difference in price variations by type of buyer. Farmers received more or less the same price, regardless of buyer. However, it should be mentioned that most animals were sold to traders from the Badia.

8) Type of payment:

Type of payment had no significant effect on prices. However, farmers claiming sale on credit received significantly higher prices than those who sold for cash. The majority of farmers sold for cash and this accounted for 89.6 per cent, thus explaining the non-significance results. Credit on sale and its obligations will be discussed in further detail in Chapter seven.

6.2.4.2 Second sale

Pearson correlation coefficients indicated that price was strongly correlated with all variables, save date of sale and buyer destination. The results of the correlation were found to be similar to those obtained for the first sale (Table 6.9a).

Analysis of variance results for the second sale were found to be similar to the first sale. Age and 'reasons'-price relationships were found to have the greatest effect on price variations. The age-price relationship and reasons for sale were significant at level 0.0019 (Table 6.9). The different patterns of price according to age and reasons for sale are shown by plotting the mean price by the two variables (Figure 6.8 and 6.9). As shown in Figure 6.9, farmers were able to receive a higher price compared to the first sale (Figure 6.6). Information and type of payment did not yield the same significant level in the second sale as in the first sale. Even though sale on credit indicated higher prices, only 13 per cent of farmers practised this type of sale, which might explain why it did not show any significance. The same can be said for price information; only 22 per cent stated they did not collect price information before sale.

Table 6.9a: Coefficient of correlation between factors of sales (sale 2)

	Agesa2	Buysa1	datsal2	informa	paymsa2	placsa2	pricsa2	reassa2	typsal2
Agesa2	1	0.0512	.2815**	0.1603	0.1213	.2881**	.3556**	0.0126	0.1638
Buysa1	0.0512	1	0.0914	.2262*	0.0205	0.0448	0.1167	0.1314	.1931*
Datsal2	.2815**	0.0914	1	0.0077	0.0356	0.1533	0.0017	0.0226	0.0521
Informa	0.1603	.2262*	0.0077	1	.2051*	.2701**	.2731**	.1836*	.2047*
Paymsa2	0.1213	0.0205	0.0356	.2051*	1	0.1169	.2935**	.2069*	0.1422
Placsa2	.2881**	0.0448	0.1533	.2701**	0.1169	1	.2225*	0.0797	0.0255
Pricsa2	.3556**	0.1167	0.0017	.2731**	.2935**	.2225*	1	.2223*	.4321**
Reassa.2	0.0126	0.1314	0.0226	.1836*	.2069*	0.0797	.2223*	1	.2208*
Typsal.2	0.1638	.1931*	0.0521	.2047*	0.1422	0.0255	.4321**	.2208*	1

Source: Field study conducted by the researcher, 1995

agesa2 = age of animals sold(in months)

buysa2 = type of buyer animals sold to

datesa2 = date of sale (in months)

informa = gathering price information before sale took place

paymsa2 = term of payment (cash or credit)

pricsa2 = price received for each animal sold

reassa2 = reasons for sale of animal(s)

typsal2 =type of animal(s) sold

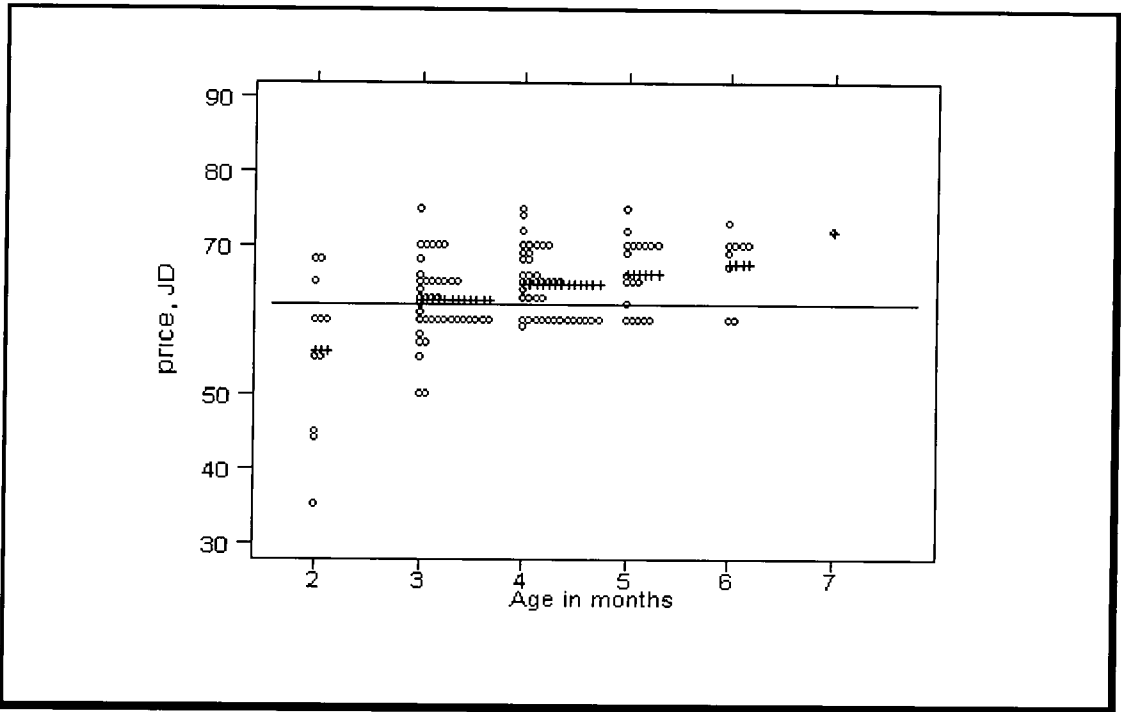
*sign if. le .05 **sign if. le .01 (2 tailed)

Table 6.9: Sale 2: Analysis of variance (Anova output)

Number of obs = 118			Rsquared = 0.66			
Root MSE = 6.4			Adj Rsquared = 0.56			
	Source	Partial SS	df	MS	F	Prob > F
	Model	7663.9	26	294.8	7.13	0.0000
1	Reason of sale	2117.4	4	529.3	12.80	0.0000
2	Age of animals sold	856.1	5	171.2	4.014	0.0019
3	Buyer	402.9	5	80.6	1.95	0.0937
4	Information	114.4	1	114.4	2.77	0.0997
5	Date of sale	439.5	6	73.4	1.77	0.1135
6	Type of animals	116.7	2	58.3	1.41	0.2492
7	Place of sale	32.8	1	32.8	0.79	0.3758
8	Payment	30.0	2	15.0	0.36	0.6967
	Residual	3888.6	94	41.4		
	Total	11552.6	118	96.3		

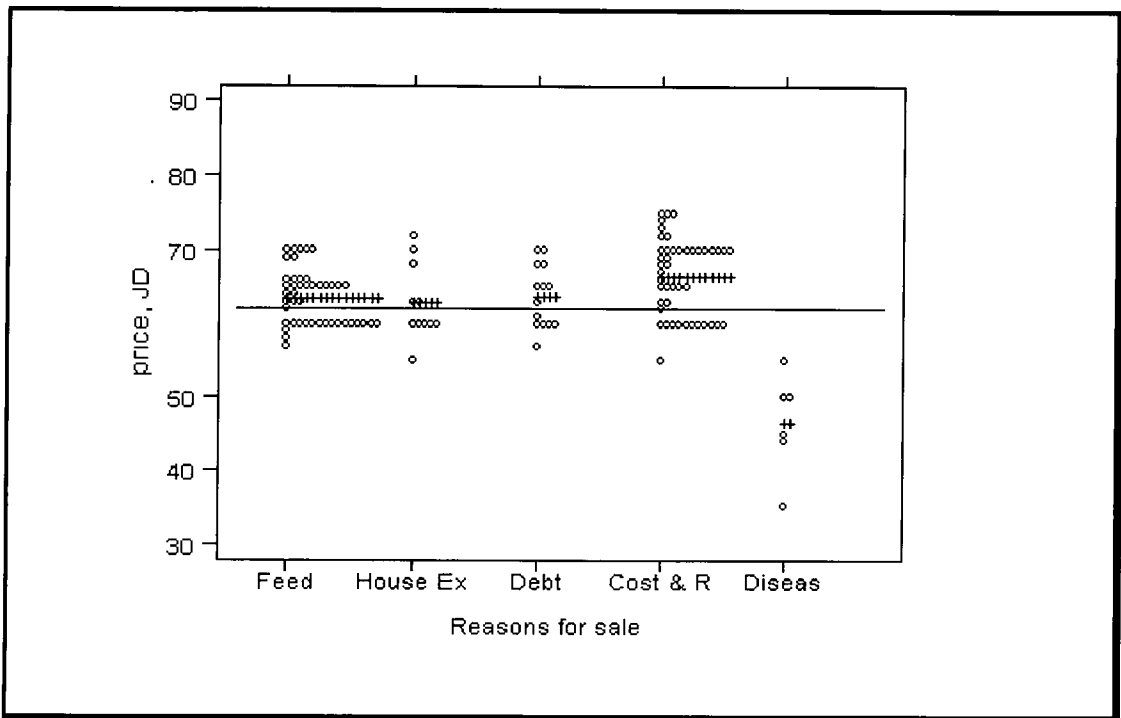
Source: Field study conducted by the researcher, 1995

Figure 6.8: Sale 2: Age of animals sold by price received



Source: Field study conducted by the researcher, 1995

Figure 6.9: Sale 2: Reasons for sale by price received



Source: Field study conducted by the researcher, 1995

6.2.4.3 Third sale

In the third sale, only age and payment variables were significantly correlated with price (Table 6.10a). Households which were able to delay their sale had more sale choices, especially in practising sale on credit. In the third sale, households with over 300 head of sheep accounted for 64.2 per cent. Both variables assert that households were able to keep animals longer and sell on credit. The third sale of households appears to differ from the first and second sales. However, analysis of variance indicated that reasons for sale had a greater impact on price variations and this was significant at 0.0052 level. The type of animals and date of sale were significant at 0.2492 and 0.1135 respectively. The age of animals showed no effect on price for sale three, whereas it was important in the first sale and second sale. The other variables showed no effect on price as for the first and second sale (Table 6.10).

Table 6.10a: Coefficient of correlation between factors of sales (sale 3)

	Agesa3	Buysa3	Datsal3	Informa	Paymsa3	Placsa3	Pricsa3	Reasal3	Typesa3
Agesa3	1.0000	.5221**	.3252*	0.1823	0.1727	.3690*	.5837**	0.1317	0.1329
Buysa3	.5221**	1.0000	.3624*	0.0788	0.0981	.8593**	0.2837	.3715*	0.1786
Datsal3	.3252*	.3624*	1.0000	0.121	0.1217	.4529**	0.1419	.3489*	0.0042
informa	0.1823	0.0788	0.121	1.0000	0.1147	0.0993	0.0687	0.0279	0.1193
Paymsa3	0.1727	0.0981	0.1217	0.1147	1.0000	0	.3478*	0.2839	0.2599
Placsa3	.3690*	.8593**	.4529**	0.0993	0	1.0000	0.199	0.2654	0.1501
Pricsa3	.5837**	0.2837	0.1419	0.0687	.3478*	0.199	1.0000	0.1909	0.1882
Reasal3	0.1317	.3715*	.3489*	0.0279	0.2839	0.2654	0.1909	1.0000	0.1602
Typesa3	0.1329	0.1786	0.0042	0.1193	0.2599	0.1501	0.1882	0.1602	1.0000

Source: Field study conducted by the researcher, 1995

Agesa3 = age of animals sold(in months)

Buysa3 = type of buyer animals sold to

Datsal3 = date of sale (in months)

Informa = gathering price information before sale took place

Paymsa3 = term of payment (cash or credit)

Pricsa3 = price received for each animal sold

Reasal3 = reasons for sale of animal(s)

Typesa3 = type of animal(s) sold

*sign if. le .05 **sign if. le .01 (2 tailed)

Table 6.10 Sale 3: Analysis of variance (Anova output)

.Number of obs = 42 Root MSE = 5.0				Rsquared = 0.9 Adj Rsquared = 0.8		
	Source	Partial SS	df	MS	F	Prob > F
	Model	4409.9	20	220.5	8.8	0.0000
1	Reason of sale	427.7	3	142.6	5.7	0.0052
2	Type of animal	165.7	1	165.6	6.6	0.0180
3	Date of sale	450.3	6	75.1	2.9	0.0287
4	Payment	94.2	1	94.2	3.7	0.0666
5	Age of animal sold	157.3	4	39.3	1.6	0.2206
6	Place of Sale	7.6	1	7.6	0.3	0.5877
7	Buyer	37.8	3	12.6	0.5	0.6861
8	Information	.04	1	.04	0.00	0.9688
	Residual	528.0	21	25.2		
	Total	4937.9	41	120.4		

Source: Field study conducted by the researcher, 1995

From the analysis of the three sales, two main variables emerged as important in affecting price. These were 'reasons for sale' and 'age of animals'. Further analysis will focus on 'age' and 'reasons for sale', and relate them to general household characteristics.

Farmers and traders have developed a social relationship and sale on credit is now practised in the Badia. Sale on credit in both the short and long term is usually higher than the average price for cash.

6.3 Household marketing strategies and marketing arrangements in relation to constraints

6.3.1 Marketing decisions imposed on producers

The argument that Bedu do not always sell their livestock at an opportune time is based on the view that a farmer's cash needs outweigh all other considerations, and so result in the sale of livestock during periods of low prices. This fact is particularly obvious among small flock holders who sell their animals according to their present financial household demands.

From the households studied, the factors which appear to determine and motivate distress sales of animals are mainly the need for money to purchase livestock inputs, condition of livestock, disease, shortage of labour, shepherds' salaries, cash needs and the size of the flock.

6.3.1.1 Livestock inputs

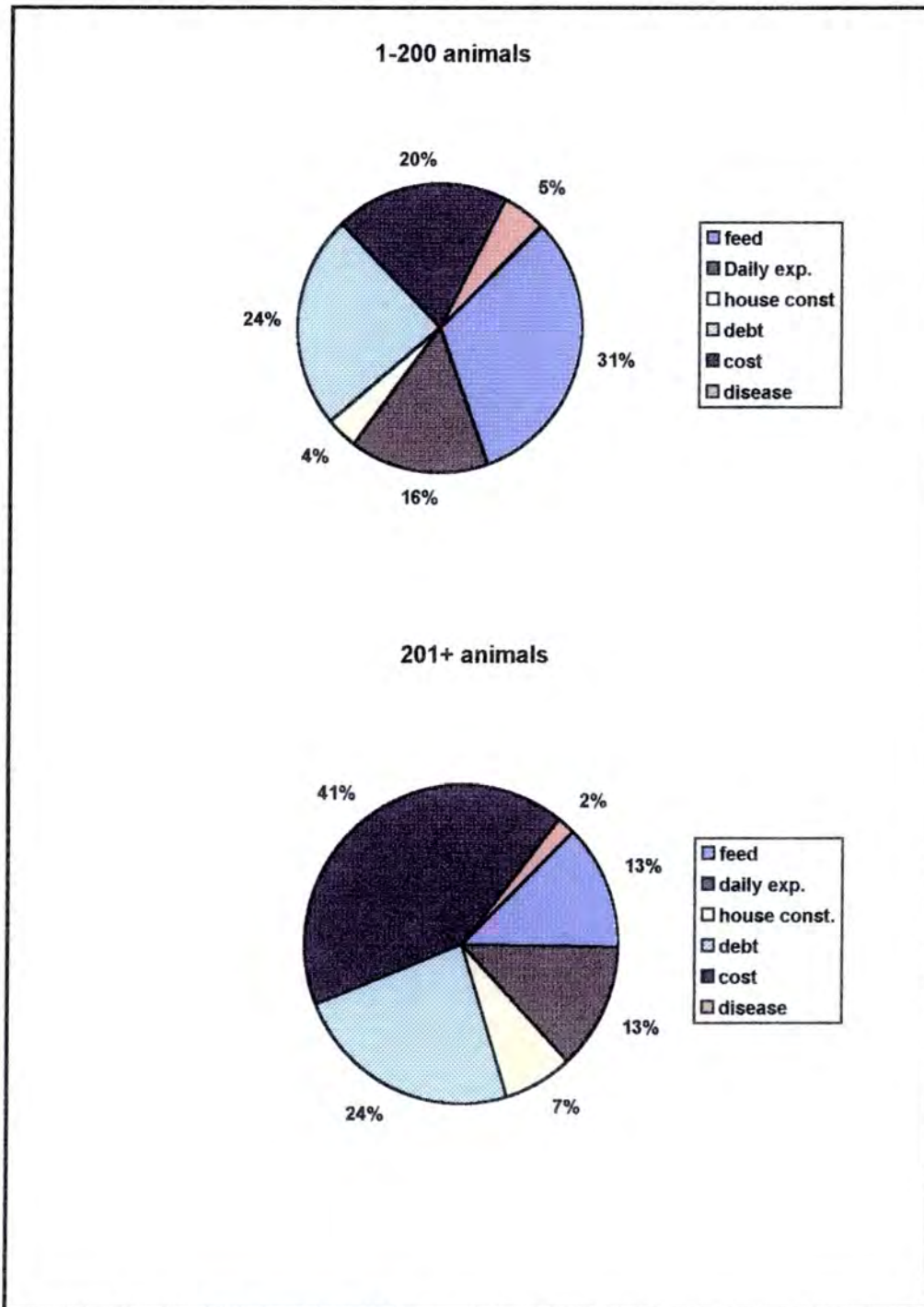
Livestock production systems of the Bedu have traditionally been determined by the permanent movement in search for grazing. Whilst movement patterns have changed considerably over the years, livestock production in the Badia of Jordan remains largely determined by feed, and access to it. Within the establishment of national boundaries, and the extensive agricultural and urban settlement, livestock owners are limited to small grazing pastures. The rangelands in the area are becoming steadily overgrazed. The vegetation cover is insufficiently dense, and with low domestic production levels, farming depends mainly on imported feed (Galaty, 1981). However, despite the high cost of farming and the low prices of fresh or frozen imported meat, the number of sheep and goats has increased to about 3.5 million. The effect of this rapidly developing trend in animal production is seen today in the form of extremely degraded grazing areas, some of them irreversibly damaged and desertified (Masri, 1986).

Furthermore, even in a good rainy season, the grazing season is limited to three months. Producers have to buy supplementary feeds, such as barley and wheat bran. Since 1981, the increase in production costs has been counter-balanced by government intervention in the form of feed subsidies. However, this intervention by the government encouraged Bedu to expand their flocks and worsened the problem of overgrazing.

The feed subsidy and maybe improvements in income of herd owners have motivated them to increase their stocks. This increasing tendency of stocks has some far reaching implications on the carrying capacity of permanent pastures for which [the] area has remained more or less the same (Randhawa, 1990, p. 27).

Despite government intervention in subsidising animal feed, the cost of production remains high in the area in seasons with low rainfall. Moreover, the producers' problem worsened when the government decided to remove the feed subsidy from farmers owning more than one hundred head of animals. In the study, farmers were asked why they sold at a particular time and what they intended to do with the sales revenue. Their responses suggest that the purchase of feed was the most important factor. Most of these households were heavily dependent on feed purchases. Other farmers indicated that they often sold livestock to pay off debts incurred through the purchase of feed on credit or cash borrowed for the purpose of purchasing feed earlier in the year. Some households had to sell their lambs to the same lenders as repayment of their debts (Figure 6.10).

Figure 6.10: Reasons for sale by flock size (less than and over 200 head)



Source: Field study conducted by the researcher, 1995

6.3.1.2 The condition of livestock

Bedu livestock production can vary a great deal from year to year, reflecting the amount, timing and geographic distribution of rainfall. This affects livestock reproduction, mortality, slaughter and sale, as well as the movement and distribution of livestock. In other words, climatic variability has important implications for livestock marketing, and can greatly influence the behaviour of the producers and traders involved in livestock trade and export. For example, the livestock of Bedu flocks gain weight and are in the best physical condition after spring and early summer. In order to take best advantage of this and to avoid cost and risk in late summer and winter, farmers prefer to sell their animals during this period.

The sale of sheep and new-born lambs generally occurs in the early part of the year. The sale of healthy ewes in particular, is strongly associated with pressing cash needs for the purchase of feed, house construction, wedding expenses and car maintenance. Another important factor behind such sales is the shortage of labour. Whilst family labour is an important input in raising livestock, some families may have to make a choice between sending their children to school and limiting the number of animals they keep.

6.3.1.3 Disease

In recent years, animal diseases have become one of the main factors affecting livestock production in the Badia. Diseases such as blue-tongue, foot-and mouth and other endemic diseases are reported in the study area. Loss of lambs and high mortality in many flocks were also observed. Low production was identified by experts from the JBRDP as the result of animal diseases. In the study, most farmers

stated that they had lost lambs, with an average loss of about 7.7 per household during the season (Table 6.11). Campbell, Jones and Roe, (1995) indicate that the current veterinary system has not coped well with this situation.

Disease has recently become one of the push factors for early sales in the Badia of Jordan. Farmers feel that keeping lambs for a longer time may increase their susceptibility to disease, and so result in a financial loss. During the fieldwork, I came across cases of farmers who had been forced to sell their animals at very low prices because of disease, with prices falling from 65 to 30 and even 20 JD. In addition, animals are often are at greater risk of catching diseases during dry, hot summers. One of the main reasons for sale stated by farmers is to avoid risk, and this accounts for 25.9 per cent of overall reasons given for sale. Furthermore, lambs born later in the summer are sold at a young age in order to avoid the hot weather as well as disease.

Table 6.11: Lamb losses by flock size

Flock Size	Mean	Total
1-100	2.3113	106
101-200	9.2	32
201-400	11.4	31
401-800	23.4	17
801+	29.0	7
Entire population	7.7	193

Source: Field study conducted by the researcher, 1995

6.3.1.4 Labour constraints

During the late 1970s and early 1980s, economic growth in the region created employment opportunities for unskilled and semi-skilled labour. As a result, Bedu manpower, particularly in the productive age-group, has been attracted away from the Bedu areas in the search for employment further afield, such as in the armed forces (Abu Jaber et al., 1987). Following the settlement of the Bedu, children have gone to school and the larger number of educated people has been attracted to an urban life, securing jobs away from livestock production. Older people have started to recognise the importance of education for their children and this has pushed some of them to either reduce or give up livestock production altogether.

The younger generation seem to prefer a settled lifestyle and express their bitterness towards the traditional nomadic lifestyle. For example, upon entering marriage, many young women have laid down conditions for a more settled lifestyle, refusing to participate in livestock production. In addition, some women have begun to secure jobs in teaching and nursing.

The scarcity of labour is obvious in the field of large livestock holders. Many households suffer from a shortage of male and female labour, unappreciative of Bedu traditional life. While a flock needs to be large enough to meet the subsistence needs of a family, family labour has equally to be sufficient to maintain this herd and to take full advantage of its resources. Therefore, the size and the structure of family labour has to be related to its flocks, as mentioned earlier in Chapter Five.

6.3.1.5 Shepherds' salary

Paid employment has attracted a large number of younger Bedu men to work outside the livestock organisation and this has caused the Bedu to rely on hired labour. Shepherding has become one of the main vacancies to be filled by outside labour. During the field work the average monthly payment for a shepherd was about JD 105. These shepherds come from neighbouring countries and generally work for a year. Shepherding activities vary according to the flock size and the location. Farmers within villages tend to have one or two family members, usually children, who wander with the animals during the day. Large stock owners maintain a full employment strategy by hiring a shepherd on a monthly basis. Generally speaking, Bedu who own more than 70 head of sheep will hire a shepherd, with payment every three months.

6.3.1.6 Households' cash needs and reasons for sale

Cash income derived from animal sales is one of the most important reasons for farm households raising livestock. In other words, in a household's sales decision process, other factors are incorporated representing a household's immediate needs, either social or economic, or for the animal.

The decision to sell will also be framed as an evaluation of the relationship between a household's financial needs and the use of a household's livestock holdings to meet these needs. Livestock marketing studies in Africa have found that even though most farmers have a reasonably good understanding of the most profitable time to market their animals, they are often forced to sell in response to circumstances within the household.

The cash income derived from animal sales is one of the most important reasons for farm households in the Programme area to raise sheep and goats. Some farmers have a reasonably good understanding of the most profitable times to market their animals, but may be forced to sell to cover household expenses.

From the empirical data gathered, it seems that small flock holders in the study area generally receive lower prices for their animals than larger flock farmers. In order to highlight the many factors which might cause this disparity between the two groups, a more detailed comparison, in terms of sale style, will be drawn in the next section of this chapter.

Household expenses viewed as optional expenditures may be timed so as to maximise the terms of trade between daily expenditure and the income of households. There is no reason to suppose that these daily expenses would subject the farmer to unfavourable terms of sale. However, there are certain occasions when household expenses reach a peak: school expenses, weddings, the holy month of *Ramadan* and the two *Eid* celebrations which follow. School starts in early September and represents a financial constraint to most households, especially if a household has many children, as is often the case in the Badia. Annual schooling expenses include fees, the purchase of new clothes and stationery. Contrary to expectations, *Ramadan's* high expenses are mostly to do with large purchases of food bought from the market. The *Eids'* expenses include buying new clothes for household members and sometimes gifts for relatives outside the household. The main wedding expenses are covered by the household although close friends may also contribute. Some of the

households in the study complained that during the summer these expenses can arise on a near weekly basis and be beyond their control.

Household construction is another reason behind the sale of animals, especially sheep. The building of new houses and extensions of existing ones were witnessed during the field work. Machinery expenses are also one of the reasons mentioned by some farmers, although this generally concerns larger stock holders with more than one car. For example, vehicles such as tankers, trucks and pickups, are necessary for when flocks travel, although maintenance of these machines sometimes forces even these farmers to sell sheep in order to raise cash.

Feed and debt, the two main reasons for sale, are interrelated. During the field work, each farmer's response reflected his particular case. Some farmers believed that keeping animals over the summer period would put them at risk because of weather conditions and disease possibly affecting lambs. Furthermore, they stated that keeping animals over the summer would cost them in terms of feed. Fattening strategies were absent in their management policy. There was a clear indication that most of them were unaware of when lambs would stop putting on more weight. This management practised by farmers could be seen as a response to consumer taste in Jordan and in neighbouring countries where the slaughter of young lambs is favoured. This might explain why farmers prefer a per head basis rather than weight.

Farmers' reasons for choosing particular methods of sale were given in response to questions dealing with marketing decisions made during the year. Nearly 99 per cent

of statements made by the household sample favoured selling animals on a per capita basis. The two factors influencing decisions favouring selling on this basis were lack of trust (47.2 percent) and the habit of selling on a per head basis (23.8 percent) as mentioned earlier.

To sum up, sale forced on households can be categorised as follows: determined factors such as livestock input, school expenses, shepherd salaries and daily household expenses. Households can arrange to allocate cash and set short plans to meet such financial forces. However, these plans can be adversely affected, for example by political decisions within the Ministry of Agriculture and the Ministry of Supply about feed prices, allowing farmers no time to plan ahead. Other factors affecting a household's decisions to sell can be described either as emergency or occasional expenses.

6.3.2 Household marketing strategies

Since livestock production serves a multitude of purposes, households make production/marketing decisions under circumstances which are different from those made by farmers involved in commercial production. Concerning livestock marketing, a household must evaluate the entire household welfare function (often involving a combination of several activities) before making a decision to sell an animal or not. That is to say, factors external to the livestock enterprise are constantly incorporated into the livestock management decision process and can have a significant impact on marketing decisions of all enterprises.

The basic decision involves evaluating the expected gains or losses from keeping or selling the animals against the expected costs of keeping them for a longer time. In terms of cost, there are expenses associated with herding, feeding, watering, health maintenance, crop damage and the risk of loss or reduction in value. Opportunities to sell are sometimes limited to certain times or certain locations. A seller has to consider the costs and benefits of not taking advantage of an opportunity to sell and the financial loss of not selling in a given period and investing the funds elsewhere.

The marketing strategy of small-scale producers differs markedly from larger holders of animals. It was observed that small scale producers deliberately hold back some male stock of marketable age. The idea behind this is to reduce economic risks by ensuring that there is always some saleable stock available to generate income when circumstances demand. Clearly, this is not only the poor households' insurance strategy, but also serves as a banking strategy to accumulate wealth for larger owners.

In a normal year, a household may try first of all to sell excess males when they anticipate the price will be most favourable and when the herd structure and composition permits. At the same time, a small household will additionally sell unproductive females.

For productive females, the situation is more complex. Any sale of such animals would imply a reduction of a herder's capital and thus less security. It should be noted that Bedu livestock is a risky form of capital; herds are exposed at all times to

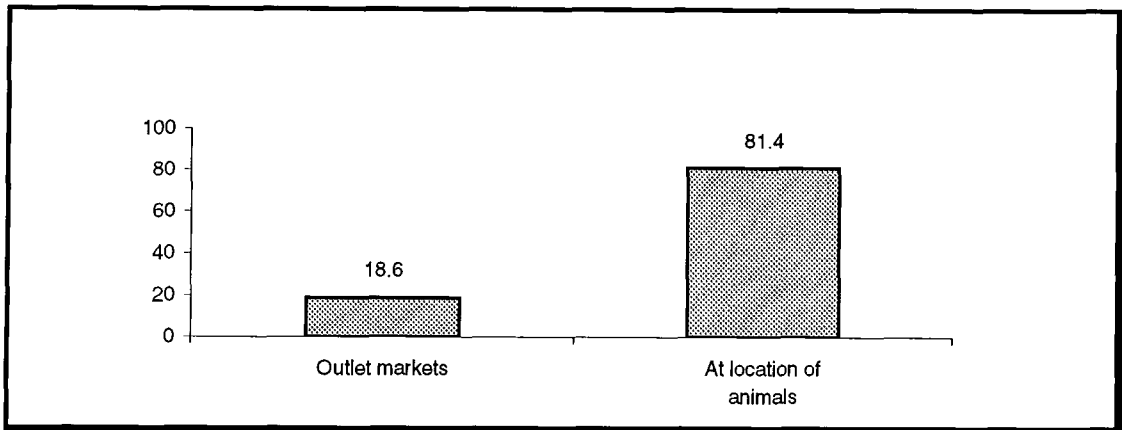
the hazards of diseases and predators. In difficult periods, producers are forced to sell all classes of animals, even their breeding stock. This became an issue in late 1996, when the government stopped subsidising feed. It was said that many farmers sold all their animals and gave up farming, whilst others cut down the size of their herds.

Most animal sales occur either at the farm-gate or at the domestic markets in the country, the most important being Mafraq. In the study, marketing alternatives were found to vary with the type of animals sold and the need for immediate cash. The three choices of location for sale are:

1. the village
2. location of flocks away from the formal markets.
3. outlet markets

The results show that the vast majority of animal sales occur at the location of the flock (Figure 6.11). Most farmers do not favour sales in the outlet markets. This may simply be due to the long distance of these markets and the cost of transportation, especially when farmers might not be able to sell and have to bring back their animals. Selling animals away from outlet markets saves time and money, leaving farmers with more choice of and control over sales. The farmers indicated that formal market sales occur when there is an urgent need for cash.

Figure 6.11: Percentage where animals sold



Source: Field study conducted by the researcher, 1995

Figure 6.11 shows that the vast majority of animal sales took place in locations of flocks and villages rather than in organised markets. The pattern of sales exhibited seems to indicate that the majority of producers balance the costs of taking livestock to different markets against the possibility of receiving higher prices at more distant and larger markets. The location of animal sales outside markets incurs no costs or efforts even though farmers might have fewer options.

6.3.3 Marketing arrangements

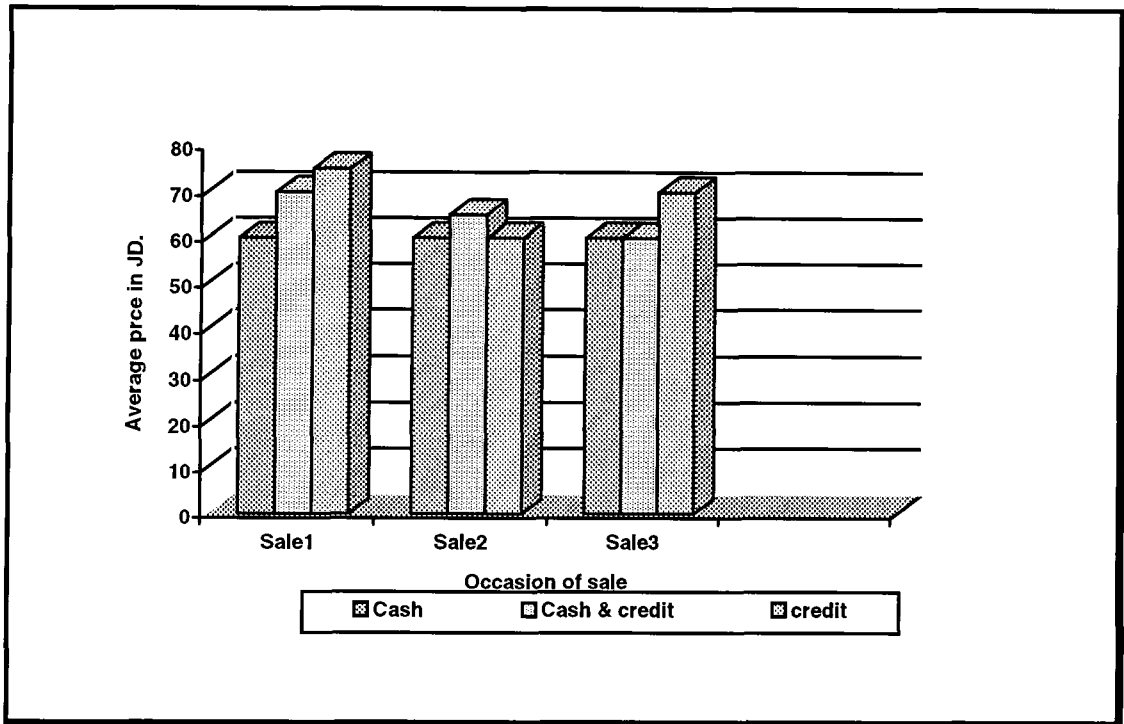
Sale on credit by farmers to traders enables both to benefit from such deals if farmers' economic conditions allow. Sale on credit is considered an attractive factor enabling producers to sell at the time of their choice if the payment of his/her stock has been delayed. This provides the means for many people to act as traders as they do not need that much capital. However, this type of sale requires trust and creditability from traders. In the past, trust in traders in the Badia meant a great deal to both sides. Unfortunately, in recent years this type of sale has declined for different

reasons. According to farmers, repayment for their animals was not met. Others indicate that traders did pay, but not the total cash, despite being given a written cheque as a guarantee by traders. Sales of animals outside Jordan sometimes meant loss of money, and repayment rarely occurred, especially from Saudi Arabia.

Traders interviewed in this study did not deny the producers' claims. On the contrary, they agreed that this did happen and had affected them when some producers insisted on having cash for their stock. They added that a new generation had started to appear and approach producers, and then would just disappear to avoid repayment. They also claimed that the financial laws in the country enabled such people to abuse producers by writing them false cheques and then receiving no punishment for this kind of act.

Nevertheless, this type of marketing arrangement is still practised, albeit not exactly as before. When those farmers who sold their animals on credit were asked how they made the decision to sell to one trader rather than another, they claimed it was usually because the trader was known and they had sold to him previously. Moreover, in one case where one of these traders went to pay, the farmer asked him to keep it for the next year. Farmers who practise this type of sale tend to receive a better price (Figure 6.12).

Figure 6.12: Average price received by type of payment



Source: Field study conducted by the researcher, 1995

The sale of animals is mostly carried out by the farmer himself, but there are occasions when a farmer will ask for help from his town, especially from traders, if the sale is going to take place in outlet markets. The majority of sales taking place in outlet markets are for cash. Agreement on price and the transaction of ownership of animals is carried out without any paper work. In outlet markets, bargaining involves many people who circle round a producer until one of them offers the final price. In the Mafraq market, one group of these people who helped one trader were partners and when the farmer was asked if knew this, he denied all knowledge. In another case, when a farmer mentioned the same day and place that he had sold his lambs on a kg. basis to the only exporter in Mafraq market, the buyer refused to commit himself to the deal after weighing the animals. The result can be painful to the producer who has

to take his animals back home, especially if traders in the market find out the exact weight of the animals and offer a lower price.

Conclusion

This chapter set out the major empirical results of the research concerning the livestock marketing strategies of and conditions faced by households. Farmers differ in behaviour, tendencies and extent of livestock. The main reasons for selling are emergency sales. These often occur when farmers need immediate cash and are trapped by their financial conditions. Other factors appearing to have a large effect on farmers' marketing behaviour are mainly the costs of production inputs, especially animal feed. The high cost of production and the threat of disease have forced some households to sell. Livestock is marketed through a number of channels, mainly the outlet markets and location of animals. Most farmers sell their animals where they are grazing. Farmers do not favour sale in outlet markets unless they are forced to do so. Important reasons perceived to be responsible for farmers' dissatisfaction in outlet markets are low prices and the limited number of buyers. Farmers also experience some constraints including lack of transportation and higher transportation costs as well as the possibility that the sale might not take place. Furthermore, mobile traders occupy an important position in livestock marketing. They buy animals directly from households. Through mobile traders, farmers determine prices of their animals.

Findings also indicate that differences in marketing strategies do exist between small and large scale producers. It seems that wealthy households are in a better position when they market their animals and they benefit from sale on credit. Furthermore,

large scale producers are able to supply good quality lambs when they let them suckle for a longer period, and most of the time they do not wean them at all. Furthermore, the data suggest that the credit arrangements between producers and traders take place because they fulfil a genuine need for traders often faced with low cash availability. For this reason, large-scale farmers benefit from such sales when they receive higher price for their animals.

Chapter Seven

Markets and Marketing Systems

7.1 Introduction

This chapter examines trade organisation by focusing on the identification and characterisation of the livestock marketing intermediaries, and describing the marketing channels. The description and analysis of the livestock marketing channels and processes in the Badia is an essential backdrop to understanding the marketing behaviour of livestock producers. Any recommendations to correct disruption of the marketing system should consider all relevant information about the present system. The recommendations are essentially geared at shaping the behaviour of the market participants in a way consistent with overall system objectives. It is therefore important to try to identify the major participants and assess how they might be related to some of the marketing problems.

The sources of information used in this chapter are varied, but an important part is made up of open-ended interviews with knowledgeable traders and exporters at the Badia and Mafraq outlet markets. Five group discussions were conducted with traders in the summer of 1995 (Table 7.1). Information from traders was backed up by a variety of visits to outlet markets, such as Ruwayshid, Mafraq and Amman markets and some governmental and private institutions such as Mafraq Customs Department and some Ministry branches in the governorate.

Table 7. 1: Interview distribution of traders in the study area

Group	No. of traders	Number of animals per each purchase	Location of trade	Cross-border	Exporter	Mafraq Market
A	7	1-150	North West	-	-	✓
B	3	+300	North East	✓	✓	✓
C	3	+200	South West	✓	✓	-
D	3	+300	North East	✓	✓	-
E	3	1-150	West	-	-	✓
Total	19					

Source: Field study conducted by the researcher, 1995

The selection of traders was based on a careful consideration of the characteristics of the marketing environment, such as geographical and residential factors, economic scales, especially capital, and destination of sale. Some of the traders interviewed carry out their activities within the Badia, some in the terminal livestock markets and others act as exporters.

The interviews were carried out between July and November 1995. The programme area was divided into three zones: north west, north east, and south west. One interview was conducted at Mafraq market. The intention was to include all types of traders in the interviews and so export traders were included.

Since difficulties arose during the pilot study when approaching traders. I chose to rely on personal relationships and some key informants in different locations in the area in order to carry out such interviews. Two groups of traders were known personally. Other groups were approached during the field work by local inhabitants known to me, such as relatives of traders and neighbours from the same villages. Even though this procedure was adopted, some difficulties in talking to traders were inevitable. Problems arose in an area in the north east which is known as the main point of entry for the illegal import of livestock from Syria. In addition to the difficulties in approaching the main traders in this area, this interview was both the shortest and the least informative.

Interview arrangements in terms of place and time were left to the discretion of the traders, and as a result, most interviews took place in villages in one of the traders' houses. The number of traders as well as the length of each interview varied.

The trading role links the livestock production system in the Badia with marketing processes. In analysing the interaction between trading, production and marketing, the study identifies elements of the trading system. Due to the lack of knowledge about the trading industry in the Badia, the interview with traders was designed to explore details on the following general issues: identification of the major participants in the marketing chain, identification of major outlet markets, price information, source of supply, transport costs, sales destinations, importance of regional markets, cross-border trade and marketing arrangements. The interviews covered the professional activities of the subjects, as well as personal information used to compile

a profile of typical traders in the trading system. Personal information and economic activities on traders were recorded in advance by relying on the data collected on households by the Badia Research and Development Programme in 1993, and from relatives to traders. The nature of a trader's profession and relationship with market participants was explored during the interviews. Questions relating to how animals were purchased, terms of payment and terms of resale were raised. Cross-border trade was the most sensitive issue for the traders, especially in the north east. It is common in the Badia for traders to be well informed about marketing and to have the ability to trace sources of animals and prices. Moreover, their mobility enables them to have up-to-date information. For both producers and traders, cross border trade is a constraint due to its influence over the demand for Jordanian animals. Traders also need to be aware of the origins of the animals they are dealing with. On the contrary, exporters benefit from cross-border trade when they are able to export female animals which are not allowed to be slaughtered or exported from Jordan. They are able to sell Jordanian female animals and export them to Saudi Arabia where small traders have no such access. The Jordanian animals are easily mixed with the Syrian animals and then exported out of the country.

People involved in the cross-border trade from Syria can make good money, but small traders are left out since they do not have the capital to act as exporters and there is no market for Syrian animals. Syrian animals are not favoured for sale within the country for two reasons: 1) Slaughter of female animals within Jordan is not allowed and 2) Jordanians are not in favour of raising Syrian animals.

The same can be said about animals brought from Iraq, with the exception of male lambs. Imports from Iraq might cause producers to face unfair deals in the Saudi market. Importing animals from Iraq is risky, and the few Jordanians who have access to such business, tend to have access to the Saudi market as well. In the study, the most valuable information on cross-border trade was obtained from traders in the north west part of the study area, largely because they were willing to share information since they knew me personally.

The majority of transactions of livestock are carried out by Bedu traders. Trade in areas such as the Badia requires a capability which is principally the result of knowledge, experience and tribal kinship. This explains the dominance of Bedu traders in the area. There are, however, a few traders who are not Bedu who have developed a strong relationship with Bedu producers over the years. The characteristics of each of the groups interviewed are discussed below.

Group A

This group of seven traders, live in the north west Badia. I have known the group for many years, either as relatives or as neighbours. Most of the group have been trading for more than five years. The group have unique trade relations and maintain a very close friendship. All participants in this group have knowledge and experience of rearing animals. Five of these traders joined the Bahraini army in the late 1970s and early 1980s for a period of 5-8 years. Before doing so, all were livestock producers and some of them still herd animals today. Even though they are known in the community as livestock traders, most members of the group carry out other activities.

Some of them are involved in livestock production and keep animals for household needs, albeit the number of animals is small compared to full livestock producers. Others are involved in car trading when the opportunity arises.

Most of their trade takes place in villages close to their residential area and in the Mafraq market. Transport and sometimes capital can be shared in the purchase of large flocks. Four traders have pick-up trucks which fulfil their transport requirements. They tend not to keep stock for more than two days for fear of losing animals and to avoid extra cost. They buy small numbers of animals and if the number exceeds 100 head, they share the capital in order to be able to purchase. Four traders in this group have been trading for more than 10 years and the rest for less than 5 years. They need to work as a partnership if the total number of animals traded exceeds 150 head. None of them are involved in cross-border trade as this requires large capital and links with people in Syria and Iraq. Most of their resale takes place in outlet markets, mainly the Mafraq market. Sharing of capital among traders usually falls into two categories. The first is based on a previous agreement between two traders or more to gain sufficient capital and then start trading. In this category, partnership lasts for a period of time usually extending over months or even years. The second category can be described as occasional partnership which usually takes place according to specific circumstances related to one particular purchase of animals. For example, if two or more traders are trying to buy some animals and the seller(s) insists on selling all the animals together, traders will form an agreement to share the capital and make the transaction. This type of capital sharing normally ends by the time the two traders sell the animals.

This group represents Bedu traders who trade with a little capital and who rely on livestock as their main activity and source of income. Livestock trade in the Badia is one of the few options open to early retirees either from the Gulf states or from the Jordanian army forces. Thus, most of these traders interviewed were aged 40 and over. Friendship and co-operation are essential for their survival.

Group B

Three traders were interviewed in the north east Badia¹. They live in the same village and have been involved in livestock for many years. One of them is among the wealthiest people in the area. He has a large amount of capital and trades in all areas of the Badia with a large stock of over 300 animals at a time. He has lorries and one pick-up truck which enable him to move his animals if necessary. He practises sale on credit and once sold 500 sheep on a long credit basis for 2 years. He buys the stock and sometimes keeps it for 3-5 months. This trader has other economic activities in addition to the trading of livestock. He invests in many other businesses in Mafrag city, owns many shops dealing in building materials, and sometimes trades in animal feed. Since he has two households, the size of his dependent family exceeds 15 people.

The other two traders work as partners and travel using one car. They generally share the same capital, and are involved in cross-border trade, selling mainly to exporters in the area. They have a small number of animals, mainly sheep, to provide them with

¹ The interview arrangement for groups B and D was made possible by the assistance of one of the JBRDP's staff members, Mehesin Al-Sharafat, who lives in the same area and maintains relations with both groups. Pre visits were made and the researcher was introduced to group members on different occasions. One occasion was to pay condolences and the other to attend a wedding ceremony.

milk and milk products. The main reason for their partnership is to amass sufficient capital in order to be able to operate in such trade conditions. They have no other economic activities, but receive financial help from their sons serving in the Jordanian army.

A large amount of capital is essential for traders to operate in areas far away from outlet markets and to maintain trade with exporters. Cross-border trade requires a large capital base, with money usually having to be paid in advance to people in other countries. Again, traders have to rely on other sources of income, be involved in other business or rely on some other form of income support.

Group C

Three traders, cousins, who have been trading since the 1970s, were interviewed from the south west Badia. They trade jointly and are known to act as exporters to Saudi Arabia. They have strong links with farmers as well as traders in Syria and Iraq. Furthermore, since they have been in business for some time, they are well known to many Saudi traders. They are considered to be among the wealthier Bedu. As they originally migrated from an area close to the Syrian border where Syrian animals are brought over, they have managed to become the dominant cross border traders, assisted by relatives living there. They carry out other economic activities besides livestock trading. Since the early 1980s they have been known for their domination of the land trade in the Badia, with their financial capacity allowing them to trade on long terms in either livestock or land. They are also involved in crop and vegetable production.

This group collect animals from the Badia, Syria and Iraq. In 1994, during the pilot study, I came across their animals brought from Iraq and kept to the east of Ruwayshid close the Iraqi and Saudi borders. It was clear that this large flock of animals was being kept for sale to Saudis. They deal in large stocks of animals, often exceeding a thousand head. In addition, they have a good trade reputation, and are able to buy from most large-scale producers who have no need for immediate cash. They try to make use of every economic opportunity, and, for example, provide farmers and traders with feed. Traders' capital enables them to buy feed and store it when it is available at cheap prices in spring and early summer. When demand for feed rises in winter, they can earn some profit by selling it to farmers on credit. The date for repayment is usually agreed for spring when farmers will be able to raise cash from the sale of lambs. Despite there being no formal agreement, most farmers will sell their animals to the same traders from whom they have bought the feed. In the Badia, this is a common form of repayment for this type of favour where the trader has helped out a farmer's need for feed. Whilst it is not possible to assess such a transaction in terms of figures, it is clear that the trader is the one with the upper hand. Assessment was further complicated in the study, when one farmer mentioned that traders usually start demanding repayment at a time when the demand for animals is low, and so farmers have no choice, but to sell to the same traders.

Again, other economic activities such as trade in land, feed, animal production and crop production are carried out along with livestock trade. Financial ability is a key issue in such trade.

Group D

This group is located in the north east of the Badia, close to the cross-border station. A father, son and cousin work together and buy and sell in the same area. They do not buy or sell in outlet markets, but are on good terms with group C. They are well known in the area and are as wealthy as group C. They are viewed as large scale livestock producers, with the father having over 500 head of sheep. He and his son are heavily involved in cross-border trade from Syria. Livestock import records for 1992-1994 from the Mafraq Customs Office reveal that they were the most dominant traders in this type of trade. Both father and son have maintained trade in animal feed in the area. According to farmers interviewed in the same village, this trader and his son provide them with animal feed on credit during winter then buy animals from the same farmers as repayment for their debts. The son and cousin appear to work under the supervision of the father and follow his guidance. Discussion with them was more sensitive than in the other interviews.

Group E

Group E was interviewed in the Mafraq market and three traders participated¹. One was from a village located to the south east of Mafraq. One trader in the group has 15 head of sheep and 10 goats, and usually comes to the Mafraq market to buy and sell in the same day. Sometimes he has to take remaining animals back home if there is no opportunity to sell. The other two are government employees who try to make some money before they start work. Each has his own truck and this enables them to

¹ Arrangement for this interview was only made possible because one of these traders is known personally to me.

buy animals and keep them for some time before sale. They live in villages close to the Mafraq market.

7.2 Main participants in the market

The great rise in livestock trade in recent years is a result of the increased demand in regional markets for red meat in Saudi Arabia and the Gulf states. Bedu have been involved in the selling and trading of livestock to these remote markets. The system within the markets does not prevent any producer from selling or buying animals. Not only are they willing to sell or exchange livestock from their own flocks, but many of them make their living as livestock traders. Crossing national borders during migration, or camped close to regional borders, producers have become increasingly involved in the livestock trade.

These traders are not a uniform group of people-trading on different scales, in differing situations, and with contrasting reliance upon the activity as a source of income. As a result, estimating the number involved, and the proportion of the population drawing income from it, is extremely difficult and any estimates must be treated with caution (Oakeley, 1996a, p. 12).

Trade in livestock in the Badia involves a large group of people and it is difficult to categorise them. They cover a wide variety of market agents, ranging from large-scale livestock traders to small-scale traders. Their number varies according to different factors such as seasonal movement of animals and regional supply and demand. Some of them can be described as part-time and others as full-time traders.

According to the traders, the livestock marketing system is characterised by large numbers of traders varying from small traders to exporters. This trade includes local

producers, townspeople, local merchants, and exporters. Traders who collect animals from the area resell them in outlet markets to exporters or urban, butchers specialising in *Baladi* meat (see Oakeley, 1996a). Despite the many ways of categorising market participants, it is hard to adopt a particular definition as operational research concepts for the Badia, since the functions of, for example, wholesalers and retailers are often performed by many intermediary producers who may also carry out other functions. For these reasons, the main market participants are categorised in this study as follows:

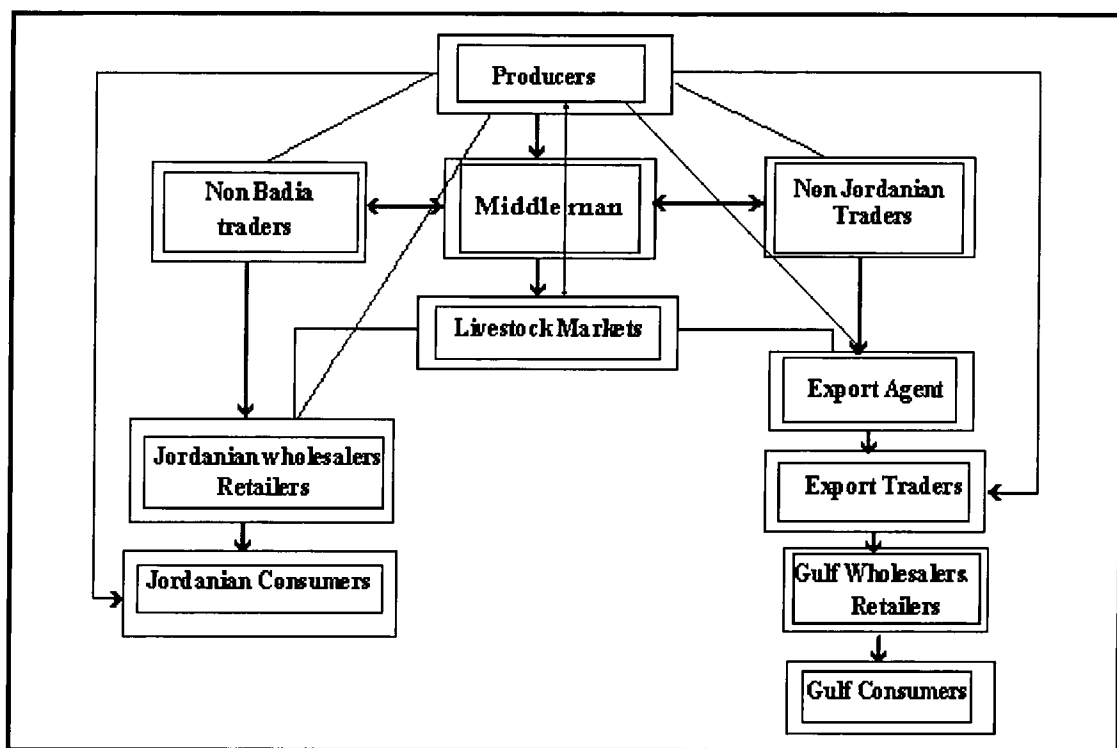
1. **Producer:** He is a part time trader who buys and sells occasionally, and benefits from the trade to generate additional income.
2. **Middleman:** He is a full time trader with a small trading capital base operating over a small range of markets and villages. He is often based in the area, but may also come from outside. He may either work alone when he buys a small stock, or share the purchase of more animals with other middlemen if there is a need for more capital or larger sums. Most of the time he travels in small pick-up trucks which can carry a small number of sheep. Due to the lack of access to investment in the Badia some women invest in trade by providing capital to middlemen. It is often the case that women in particular, provide this type of middleman with the capital for investment. Bedu women may have gold which is usually bought for them when they marry. Some women are given a female lamb as a gift from their father and over time become owners of a small flock, and are thus in a position to raise cash. This type of participation of women is found in villages, always requiring kinship and trust before they can take any kind of risk in trade. (Interview with traders Group A, 1995).

3. **Middlemen partnerships:** This is a group of traders who decide to go into partnership for the purpose of buying greater numbers of animals at each stage of the trading process.
4. **Agent:** This type of trader appeared as a result of the cross-border trade when some Bedu became agents for exporters from the cities of Amman and Zarqa. They act as buyers on behalf of the exporter and they do not hold any trade risk. They usually have their own vehicles.
5. **Exporters:** This small number of operators have a large capital base and often own their own fleet of trucks and transport purchased animals in their hundreds to markets from wealthier livestock producers. They may however need to sell animals within the region, depending on supply and price conditions.

7.3 Marketing channels

Marketing channels can be described in terms of the various combinations of market participants who promote the exchange of animals from sellers to buyers. The description of the major marketing channels which follows is mainly in terms of the co-ordination among the major marketing participants. The marketing channels for meat sales is illustrated in Figure 7.1.

Figure 7.1: Marketing channels



Source: Based on Oakeley , 1996b

1. **Producers to producers:** They are not strictly intermediaries, but principally farmers who perform some marketing functions such as a fattening policy. These traders rely on their production costs and the market for a reference price. They buy on the basis of their price expectations in the market where they will later resell. They face price uncertainty due to the relatively long time lag between purchase and resale, and have to develop risk-taking strategies and knowledge of local and temporal supply conditions. They normally buy in large numbers to economise on the travel time and operational expenses.
2. **Producers to middlemen:** This direct exchange is practised widely in the Badia with small numbers of animals. It is the most important link between producers and markets. Its importance stems from the fact that producers risk the transport costs associated with taking animals to outlet markets. Specialist traders therefore fulfil this role in the marketing chain both more economically and more effectively.
3. **Producer-consumers:** This type of exchange between producers and consumers is mostly found in villages. Social values, traditions and festivals are the most important factors accounting for this type of sale. For example, if a friend from outside the area were to pay a visit to the household, then tradition would demand that the host slaughter an animal. The household would then rely on either farmers or traders to meet this demand. Direct sales to consumers rise in summer when most weddings take place. In Jordan, but particularly in the Badia, social occasions such as these lead to an average consumption of ten animals per wedding, usually bought directly from producers. Furthermore, each wedding requires the participation of most households in the village and surrounding areas,

in addition to friends from remote areas. As tradition requires every guest to present the groom with a gift, people often bring live animals to help with the cost of the wedding. This type of transaction is closely connected to social behaviour and tradition, and so is not fixed in terms of time or place. The strength of Bedu tradition suggests that this type of sale and slaughter of animals will remain unchanged for some time to come.

4. **Producers-meat retailers:** Even though this link has become less important in the Badia, it is still practised in villages. In the past, meat retailers from cities used to carry out such activities, but since most cities have developed rules for slaughter houses, and all meat retailers are required to have all animals slaughtered and stamped, this type of trade has declined.
5. **Producers-exporter (Jordanians and Saudis):** Some large scale livestock producers have been able to develop direct exchange channels with both Jordanian and Saudi exporters. Small scale producers might sell to certain exporters who are known to collect animals and then export them to Saudi Arabia. According to information from traders interviewed in group A, there are some Bedu, admittedly only a few, who have started to carry out such business.

An examination of the marketing channels indicates that livestock producers have many alternatives for selling their animals. However, in reality only two marketing channels are dominant in the Badia, middlemen and exporters respectively.

The basic livestock marketing mechanisms in domestic trading are largely the same throughout the country, with most initial transactions starting at the producer's home.

Animals usually enter the marketing chain when producers sell either to traders in a terminal livestock market, and/or to traders in the Badia either on location of animals or in villages. Farmers interviewed in this study indicated that the vast majority of animal sales take place in locations of flocks rather than in markets. It was found that 81.4 per cent of sales take place at the site of the flocks or in villages compared to 18.6 per cent of animal sales occurring in the organised Mafraq market. The Badia trader may be working independently, working with others or employed by a major exporter as is the case in cross-border trade, to assemble animals for export.

Livestock traders buy and sell livestock either at the same market and on the same day, or for other market places or centres. The trade may follow one of several channels depending on the type of livestock and the use of marketed animals: local sale of breeding stock, sale of slaughter stock to urban markets or for local consumption and sales for export market centres.

The network of families and friends through which livestock marketing in the Badia operates is extremely complex. The marketing network involves physical supply, information, financial links and above all bonds of kin and friendship. Kinship, for example, is one of the main elements in livestock trade especially for those traders who have dominated the trade industry in the Badia. For example, the traders interviewed in Group C demonstrate the complexity of trade in the Badia. Their trading capability can be explained by tracing their history since the 1960s. This group came from a small clan which migrated from Syria in the late 1960s and created a new village in the north east of the Badia. They maintained relations and contact

with the rest of the family in Syria and the rest of their tribe in Jordan. In the late 1970s some moved to create a small village in the south west. Due to kinship links in Syria, this group of traders have managed to dominate all types of economic trade in salt, camels, land and livestock since the 1960s. It has the ability to strike up long term relationships with livestock producers and intermediaries in the Badia region.

Traders from Group A perform a type of trade which is unusual; they manage to share their loss with producers. Many cases reported that traders would go back to producers and complain that they made a loss in their trade with them, and then producers would repay some of the money. This only happens because trade is based on personal relationships and tribal links. Examining this type of transaction requires an awareness of the social implications surrounding such a sale. The willingness of sellers to repay some of the loss to traders is heavily influenced by the Bedu's social and religious beliefs. Due to the strong social relations in Badia society, the seller-trader relationship goes beyond the level of the transaction, and farmers try to avoid a bad reputation in order to secure future sales. Religious belief also influences sales, as well as the desire to help others in bad times as well as good.

Even though producers questioned obtain market information from traders, some producers seek out market information from relative traders such their cousins. They spend time ascertaining price trends before contacting a local middleman through whom business is transacted. Producers in villages usually seek advice from middlemen to whom they are related, before selling their animals. As a result of this kinship, the middlemen may act on behalf of the producer in the market free of

charge. The relationship between producer and middleman is therefore balanced and of benefit to both parties. Producers benefit from the trader's expertise, and repayment to traders is made at a later date, in the shape of, for example, sale on credit, money lending, and the supply of milk or milk products.

7.4 Livestock outlet markets

Much general information was gathered about the outlet markets during the course of the interviews with traders and producers. I visited three outlet markets, Amman market, Mafraq and Ruwayshid.

Livestock markets can be described as places which require the presence of a seller(s) and buyer(s) who are willing make the transaction of ownership of an animal from one to another. The existence of outlet markets is strongly related to the population, and so livestock markets in Jordan are only found in cities. Markets operate daily for a short period of time, starting early in the morning and lasting for three to four hours. Movement of traders between markets, especially from Amman market to Irbid market, is the only explanation for this.

Most of these markets are a few kilometres away from the city centres. The markets are on open ground and animals are either brought by vehicles or led to markets. Apart from Amman, all the other outlet markets are without government facilities. Government intervention is absent in livestock markets, and some of the facilities in Mafraq market for example, are provided by private owners who build fences or

building for their own investment. Livestock markets attract other types of business such as vegetables, feed, and farm equipment.

7.4.1 Main livestock outlet markets

The four main livestock markets in Jordan of importance to Bedu producers are: Amman, Irbid, Mafraq and Ruwayshid. These are the most distinguished livestock markets in Jordan and they operate all year round (Figure 7.2).

Functionally, as mentioned earlier, two classes of markets exist in the area: the grazing site of animals and major outlet markets. The total number of animals sold through the market channel was 39,247 (Field work, 1995). It was estimated that 83.2 per cent of farmers' sales took place in such markets in the Badia whereas only 16.8 per cent of sales were at outlet markets. The effect of transport on the marketing of livestock is therefore very significant.

Amman outlet and terminal market

Amman market is the largest market in the country and most animals are sold there for export purposes. Furthermore, animals are sold as live-weight or by kg. Sellers of animals on a kg. basis are assisted by brokers who help buyers and sellers agree on a price per kg. The broker provides enclosures for animals and the weight scale. The broker pays the money to the seller who has nothing to do with the buyer. Usually the broker pays by cheque, and this is mostly accepted by sellers. In return for these services, the broker is paid a fee by both parties. The amount of this fee varies over time. In 1995, brokers' fees were put at about 350 fils per head of animal from sellers

and 350 fms from buyers. Brokers usually facilitate the transaction by providing scales and fences, acting on behalf of the seller, and paying in cash (Visit to Amman Livestock Market, 1995).

Irbid outlet market

Irbid market is located in north west Jordan. It becomes important when mobile Bedu producers move their animals to the area in good seasons. It is only in the Irbid market that animals such as cattle, camels and horses are exchanged.

Mafraq outlet market

Mafraq market is the largest market in the north east Badia. It is well known among Bedu producers. Animals are mostly bought and sold on a per head basis. Mafraq market has the advantage over other markets, being located near the main concentration of sheep and goat production and near to the regional borders with Syria, Iraq and Saudi Arabia.

Ruwayshid market

Ruwayshid is a small market located in the far north east of the country. This market is known for being the major market of smuggled animals. It is the frontier market at the borders of Iraq, Syria and Saudi Arabia.

Anazah and Al-Ahbat Market:

These occasional markets are the result of unofficial trade practised in the Badia in the 1990s. Following the government decision on April 8th, 1992 to tax traders JD 5 per

animal, three places were named as locations where animals should be counted for taxation purposes: *Anazah*, *Mathnat Rajil* and *Al-Ahbat*¹. Only imported animals are exchanged in these markets, and there is no fixed time schedule. Groups of traders gather when animals are brought to this market.

According to the official figures up to June 1994, 346,349 sheep were imported through these areas. When this figure was mentioned to traders from the same area, they said the number of animals was well over a million. Oakeley (1996a) reported that the number of animals imported in 1995 in this area was about 21,482 animals.

Mafraq and Amman markets are found to be the most important to the Badia producers. Amman market is the main terminal market in the country where animals exported to the Gulf States through the official channels. Mafraq outlet market is important all year round because of its location in the Badia, whilst Amman market becomes important for early sales during late winter and early spring when most sales of lambs are based on weight rather than head.

¹ Mafraq Customs office; Livestock import records, 1992-1994.

Figure 7.2: Location of main livestock outlet markets in Jordan



7.4.2 Sale patterns in outlet markets

In the Badia, the sale of animals is mostly carried out by farmers themselves, but there are occasions when a farmer will ask for help from his town, especially from traders, if the sale is going to take place at outlet markets. The majority of sales taking place in outlet markets are for cash. Agreement on price and the transfer of ownership of animals is carried out without any paper work. For a producer to sell in a terminal market requires the preparation of special feed and watering for animals, knowledge of market information and allocating transport. Producers who intend to sell in such markets need to arrive before daybreak. They get the animals out of the truck and simply wait for buyers to come. In most sales, buyers will stop and request the asking price. Both buyer and seller concentrate on the price offered as a starting point for bargaining. Depending on the type and sex of the animal, a physical examination takes place before the bargaining starts. For sheep and goats, buyers mainly look at the teeth and the size of the udder, whereas for lambs they will look for sex and weight by lifting the animal. During the examination process, buyers do their best to undervalue by mentioning all kinds of weaknesses in the animal(s).

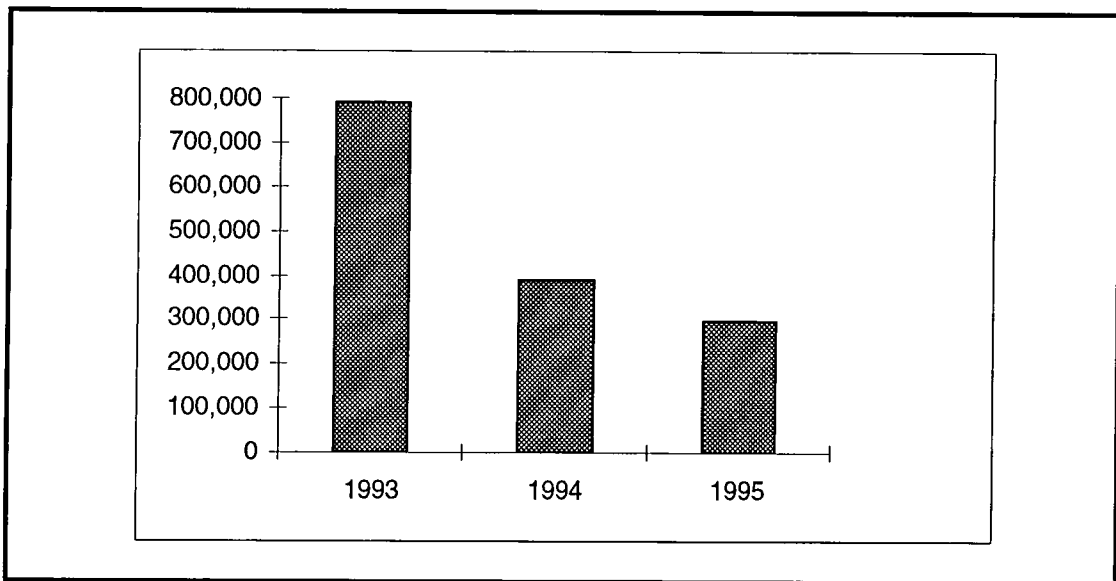
Physical contact between the seller and buyer(s) is inescapable. Usually bargaining involves many people who circle round a producer until one of them offers the final price. Sale action starts when one of the buyers will reach out and hold the seller's hand, shake hands, haggle and then offer a price. This process usually takes five to ten minutes with the price increasing until agreement is, or is not, reached. Other buyers will circle the sale action and usually participate in encouraging the sale to take place. It is hard for the seller(s) to know whether these people are independent

buyers or partners. The farmers' sale decision depend on their previous knowledge of market price gathered from friends or visits to the market. Farmers are usually accompanied by friend(s) who give advice on whether to accept or reject the final price offered. However, the physical contact, the intervention of many people and the rate of bargaining can work against a seller. Oakeley (1996a, p. 17) reiterates this when he concludes that farmers with less experience of trading are more nervous because of the crowds and the grouping of traders.

7.5 Export trade and the Bedu producers

The Bedu livestock production is strongly connected to regional markets in neighbouring countries. The higher prices of livestock in the Gulf markets have enabled the survival of the Bedu livestock production despite the higher cost of production. At present, livestock prices are high reflecting the high demand in the Gulf markets. The Jordanian livestock sector has grown steady from 850,000 in 1980 to 2.6 million today. Even though Jordanian exports to the Gulf have declined since 1991, the value of exports in 1995 was 14,908,515 JD(Figure 7.3). Export figures show that over 78,000 lambs were exported to the Gulf markets from Mafraq Governorate (Oakeley, 1996b). In addition to this is the unofficial cross border trade of animals from Jordan to Saudi markets.

Figure 7.3: Total live sheep exports 1993-1995



Source: Based on Oakeley, 1996a

Despite the effects of competition from Australian and New Zealand animals, Jordanian producers have been able to remain secure in the Gulf and home markets. Consumer preference has been the only factor enabling producers to maintain such markets. Jordanian and Gulf consumers prefer the *Awassi* red meat over both Australian and New Zealand animals. In addition, young animals are favoured when they are less than 30 kg. However, consumption patterns are shifting in domestic and regional markets toward cheaper white and alternative red meats (Oakeley, 1996a). The prices for Jordanian *Awassi* are high compared with Australian and New Zealand Merinos.

Prices in Saudi Arabia for Jordanian *Awassi* in 1996 ranged 70-92 JD (372-490 Riyals), while Australian Merinos, weighing more than *Awassi* were selling at only 41 JD (220 Riyals) in spring 1996, and New Zealand lamb at 47 JD (250 Riyals) (Oakeley 1996a, p. 47).

The effects of the competition from Australian supplies has been growing steadily in the domestic and Gulf markets. Oakeley (1996b) concludes that in the growing rural population, local meat is increasingly substituted by cheaper white meats and imported red meats. White meat production in Jordan increased from 92.8 thousand in 1990 to 181.8 thousand in 1996 (Central Bank of Jordan, Statistical Bulletin, 1997), and the country is now self sufficient. This leads to the conclusion that any instability in the Gulf market will lead to a crisis in the livestock production in the Badia.

7.6 Traders and their vital role

The importance of traders in the traditional production systems emerges when there are serious market infrastructure constraints. Livestock trade in the Badia is characterised by long distances between the areas of production and major outlet markets. Because of the distances involved, transport costs for livestock become important components of the price. Market facilities such as fences, pens, scales or auction rings and public services in livestock markets are also poor. Watering and feeding facilities represent another constraint in outlet markets. As Mittendorf (1993, p.208) reminds us:

A major cause of marketing problems often lies in defective infrastructure, particularly roads and transport services. It has been estimated that more than half the higher costs in Africa in comparison with those in Asia are due to inadequate marketing infrastructure.

Producers prefer to sell their animals on site in order to reduce costs and save time. Transport costs vary from 20 to 30 JD for a vehicle¹ per trip depending on the distance from the market. For example, producers in the north east of the study area pay more for transport than villages close to Mafraq market. The cost usually has less to do with the number of animals than with the length of the trip to the market. According to traders, most producers who hire vehicles are poor households. Producers do not favour sale in outlet markets, as they wish to avoid cost, save time and avoid having to take their animals back home. Bedu have also expressed a preference for sale on location of animals rather than at the markets. The role of traders in existing conditions is unique and vital for the continuity of such production. Their presence saves producers time, cost of transport and risks, and makes cash available on demand. Although producers do not rely entirely on the market information provided to them by the traders, traders remain one of the most important sources of information on demand and prices in the area. Oakeley emphasises this fact:

The large number of middlemen inevitably depresses producer prices, but they nevertheless play an essential part in the production and marketing systems. The mobility of traders adds considerable flexibility to a market otherwise inaccessible to those producers with limited time and transport resources (Oakeley, 1996b, p. 21).

7.7 Transportation and marketing costs

The use of trucks for transportation has enabled the marketing organisation to be more efficient by reducing the marketing costs and thus mortality and weight losses, and shortening the time for livestock to market between primary and regional and domestic livestock markets. Road networks have improved and now reach remote

¹ A vehicle carries less than 30 animals.

areas. Movement of animals on foot for marketing purposes is rare within the country and has become insignificant in recent years. However, walking large numbers of animals over long distances is still practised. Walking animals to and from regional markets remains significant as a result of the cross-border trade. The main reason for such traditional transport was to avoid taxes. The number of animals in flocks travelling this way varies, but usually exceeds 200 head of animals. Payment for shepherds is around 20-30 JD per day, and it can take 3-5 days to cover the distance from the Syrian to the Saudi border.

Official export trade is thought to favour large traders and the relationship between officials and traders would seem to benefit those whose large volume enables them to establish trust between themselves and customs officers. Government bureaucracy in the legal export trade is visible (Field work, 1995). The extraordinary amount of paperwork and number of different official fees and taxes tend to discourage new traders. According to Oakeley (1996a) there were six official procedures to the export of live animals to the Gulf.

An examination of estimated costs and returns on lambs to traders', exporters' and butchers' margins accurately accounts for capital returns. The analysis of current costs and returns, including the differences between producer prices and consumer prices is shown in Table 7.2. The transaction from producer to consumer consists of several costs. The contact cost is when traders have to find a suitable seller. Both buyers and sellers must have knowledge about which products the market is interested in, and so the contact cost is rather high because both sellers and buyers have to find

each other. At every transaction a new informal contract has to be confirmed, concerning price, quality, quantity and agreement on payment, causing high contact costs. Finally, when the contact is done the trader has to be certain that the other party observes the agreement or accomplishment cost. All three costs depend on imperfect information. Many farmers seem to be worried about opportunist behaviour on the part of the buyer, which is a consequence of imperfect information in that farmers do not know enough about current prices. The big difference between producer and consumer price could be explained as follows: Farmers live very vulnerable lives and cannot cope with a mistake or loss. For farmers, losing animals can be devastating, that is why the will to take risks is very small. The gap between producer price and consumer price also involves a high risk for traders. Livestock trade is in perishable products and so involves high costs. A comparison between estimated producer prices and estimated consumer prices in Table 7.2 shows that the price level for lambs is higher for butchers and exporters than traders and farmers.

The gross margin calculations in Table 7.2 are based on information obtained from butchers' shops, farmers and traders in 1995. Producers' prices were estimated according to the prices given by farmers. The final price is the price that consumers pay to purchase meat from butchers at 90 JD. Live lamb weight is assumed to be about 30 kg. Calculations of these figures are worked back from the consumers to the producers. The average lamb weight (net) is put at 15 kg. However, these figures cannot be strictly accurate because they are based on my expectations and figures of livestock production costs and revenues, calculated by Campbell and Roe as reported by Oakeley (1996b).

Table 7.2: Mean costs and returns on lambs to farmers, traders and exporter/ butchers, 1995

Farmers' cost¹	Farmers' price		Farmers' profit	Total price(%)
22 JD =24.4%	60 JD = 66%		38 JD = 42.2%	66.0
Trader purchase price	Cost	Sold price	Trader's profit	Total price(%)
60 JD = 66%	2 JD = 2.2%	70 JD =77%	8 JD = 9%	77.0
Exporter/Butcher price	Cost	Sold to consumer	Exporter/Butcher profit + cost	Total price (%)
70 JD =77%	? ²	90 JD =100 %	20 JD =22.2%	100.0

Source: Field study conducted by the researcher, 1995

Final price: The price that consumers pay to purchase meat from butchers.

Lamb sold in live-weight \cong 30 kg.

Lamb meat price from butcher's shops \cong 6 JD/kg.

Average lamb dead weight (net) \cong 15 kg.

Traders' costs: estimated at 2 JD/head.

¹ Based on Oakeley's calculation in 1996

² It was not possible to gain information on costs to both exporters and butchers.

7.8 Factors affecting livestock trade

7.8.1 Shortage of feed and animal health

Traders, especially small scale traders, stressed the risks involved in trading in areas under threat from shortage of feed or animal disease and how these factors adversely affect their style of trade. Traders' as well producers' fattening strategies for lambs have been ruled by these constraints. They tend not to keep animals for more than two days for fear of disease developing and to avoid the cost of feed.

7.8.2 Trust and Reputation

Trust and reputation are more concerned with credit arrangement both given and taken by traders. Availability of capital or payment arrangement can greatly influence the marketing channel and its ability to handle expanding volumes. In the Badia, sales on credit help a producer to sell at the right time if the payment of his/her stock has been deferred. This makes it possible for many people to act as traders, as they do not need that much capital. However, this type of sale requires a strong reputation for these newcomers in the trade organisation. Thus, in the past, trust in traders in the Badia meant a great deal to both sides. Producers were willing to finance traders by adjourning payment for the animals sold. This co-operation of sale arrangements enables both traders and producers to benefit from such deals. If trade on credit is accessible then traders strive to buy as many animals as possible during the year and sell when market conditions improve.

Certainly, the availability of credit given by farmer to traders allows them to operate with less capital than they would otherwise need, easing entry into trade, encouraging competition and probably helping to keep traders' margins down. From this it might

be argued that it makes sense for farmers to extend credit to traders, in that as competition among traders increases, their bargaining power with regard to the farmers may decline. Such an outcome is highly unlikely, however, whereas the risk and potential loss involved in selling on credit are very real.

The role of farmers in extending credit to traders is less frequent than often asserted. Thus, although most traders stated they have strong relationships with farmers from whom they buy, only 10.4 per cent of the 193 farmers interviewed claimed to have extended credit to traders. While traders extend credit to farmers in the form of selling them animal feed during late summer and winter, 24 per cent of farmers stated they made sales to pay debts. These debts are connected to purchases of animal feed, however it cannot be expected that all debtors were only traders. Even when credit sales occur, farmers require a down payment of the total purchase price, making credit purchase less attractive to traders. When small traders were asked directly about credit purchase, only a few reported having livestock bought on credit. Throughout the entire study, most producers and traders were hesitant about discussing their use of sale on credit. Not only has the extension of credit given by farmers to traders declined in recent years, but the length of their credit period has also declined because of the increase in buyers willing to buy farmers' animals on a credit basis. According to producers and traders interviewed, in the past, credit used to extend over several years, whereas today the normal period is reportedly one week. Interviews with several farmers and traders revealed that, in fact, credit is often not repaid by the agreed date, so that the actual period for which credit is taken is often longer than initially agreed upon. Despite the decline of credit sale between farmers

and traders or among traders themselves, some credit arrangements exist between traders and farmers in the livestock market. There are three types of credit arrangements which can be described as follows: short-term, long-term and buying on long term to raise cash.

7.8.3 Short-term credit sales

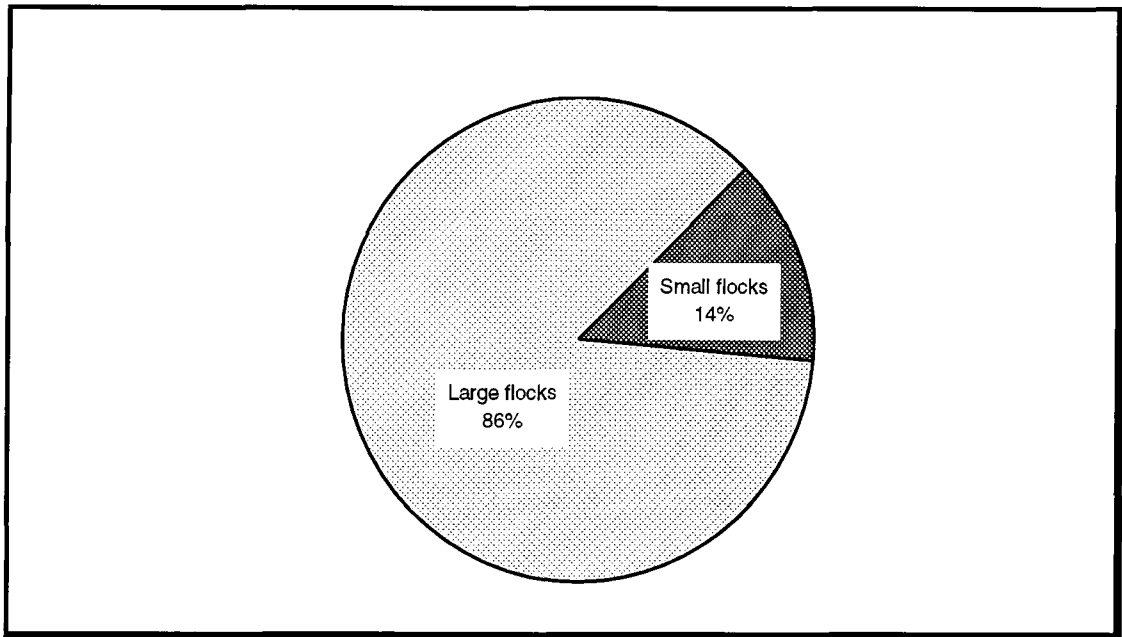
Some small scale farmers have access to cash from sources other than livestock sales. For example, employment opportunities away from livestock production provide alternative sources of funds enabling farmers to sell on credit. However, these represent a small number compared to large flock farmers (Figure 7.4). As mentioned by the traders interviewed, agreement on the repayment date has to be fixed in advance. Agreement of sale on short term credit will not necessarily affect the price arrangement. This type of sale is usually based on a very strong relationship between traders and farmers. Short credit arrangements usually work in the interests of both parties. Farmers will receive higher than current market prices for their animals whilst traders can benefit from the use of capital. Prices for credit sales are usually higher than market prices by 5-10 JD. According to both parties, a down payment might be required if the farmer insists or if the trader offers.

7.8.4 Long-term credit sales

This type of sale pattern is usually found to be common among large scale producers and livestock exporters as in the case of the traders interviewed in groups B and C. A down payment is not necessary for this type of arrangement. Repayment usually exceeds 3 months and sometimes lasts a year. Trust in and reputation of the traders

are very important elements in such exchanges and are usually marked by a long trade relationship and the experience of previous deals.

Figure 7.4: Sale on credit by small and large flocks (less and over 200 sheep)



Source: Field study conducted by the researcher, 1995

7.8.5 Buying of livestock on credit to counteract financial crises

The lack of choice in cash sources has resulted in credit transactions that tend to link credit to other obligations. Due to the difficulties of borrowed finance from institutional sources for agriculture or from the banking system or money interest prohibition according to Islamic rules, a new type of livestock trade has emerged. Some poor Bedu households have been forced to shift to private money lenders who are mainly wealthy traders. Arrangement for borrowing money takes the shape of animal exchange. Animals are usually sold by those wealthy traders for double their relative price in the market, based on a fixed date of repayment. People who buy at

such prices and under such circumstances usually sell the animals at current prices to raise the necessary cash.

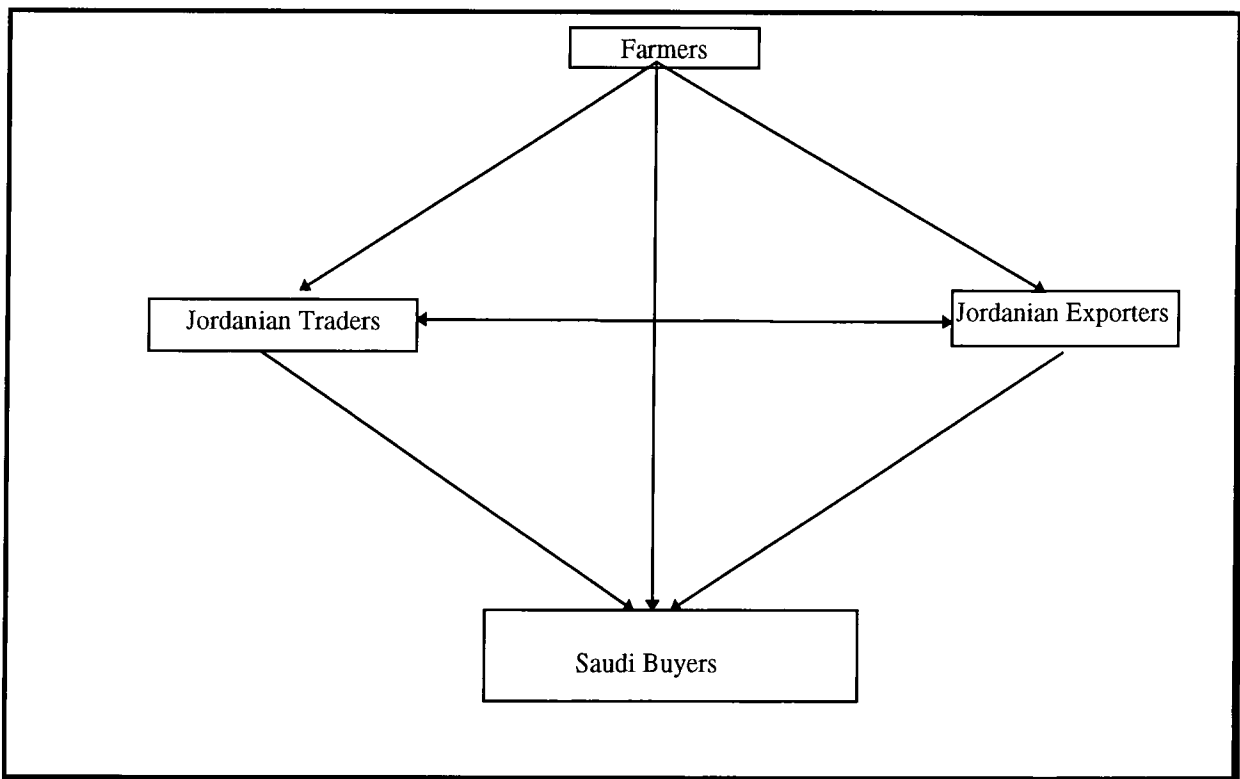
7.8.6 Reasons for the decline of trade on credit

Jordanian livestock market conditions are a reflection of Gulf markets, mainly the Saudi market, as the prices in the Badia are heavily influenced by Gulf livestock demand, with the difference in prices being about 40 per cent (Oakeley, 1996a). The Jordanian livestock market is also affected by any negative development in the Saudi market. Sale on credit extends through the chain of livestock marketing to the Saudi market (Figure 7.5). The following reasons might have contributed to the decline of such trade:

1. The long chain of sale on credit involving many Jordanians and Saudis.
2. The unofficial trade of animals from Jordan to Saudi Arabia over the border requires the payment of an export tax of 5 JD from Jordanian and Saudi traders. Some traders try to avoid such payment, but if caught by the Jordanian authorities could face a fine or the loss of ownership of their animals.
3. Many Saudi traders were suspected of bankruptcy after the Gulf War in 1991. Since animals have become a tool for smuggling drugs, many of those bankrupt Saudi and Jordanian traders were said to be involved in such trade, thereby putting themselves at even more risk.
4. Many Saudi and Jordanian traders were said to be involved in smuggling animals from Iraq. They usually pay money to Iraqis in advance, taking the risk that the animals will in fact be smuggled for them.

5. Due to the high unemployment rate in the Badia, it was claimed that criminal activity arose in the area, particularly the theft of animals. Many traders found themselves trading in stolen flocks.

Figure 7.5: Credit sale in the Badia



Source: Field study conducted by the researcher, 1995

Due to the great increase in the number of bankrupt Bedu traders who lost their capital in remote markets such as Saudi Arabia, sale on credit has collapsed. According to some farmers, repayment for their animals has never been met. Others indicate that traders did pay, but not the total cash, despite being given a written cheque as a guarantee by traders.

7.8.7 Bankrupt traders and their repayment style

Tribal and family kinship remains strong in the Bedu communities. Financial crises require help and assistance from tribe members to those in need in the tribe. Bankrupt traders, for example, seek financial help from their clan and then from the tribe. Because of pressure on tribal leader from debtors, those bankrupt traders will look for financial support. This support usually comes from wealthy farmers who will give sheep as help and assistance to such traders and consider it as charity, *Zaqha*. Repayment then takes the form of sale of animals to debtors, at a value over and above the real market value. For example, producers interviewed in this study reported many cases of traders who failed to meet their payments or who repaid in animals rather than cash. Some of these bankrupt traders were reported to have made visits to wealthy households asking them for help to make such repayments. Wealthy households usually gave animals to traders who then sold these animals back to debtors at higher than their market value and making partial payment. For example, debtors are usually trapped into accepting a ewe as a repayment at value of JD 150 where its current price in the market is 70 JD. Creditors accept unfair deals to get back at least part of their money.

Traders interviewed in this study did not deny the producers' claims. On the contrary, they agreed that this did happen and had affected them when some producers insisted on having cash for their stock. As mentioned earlier, a new generation of traders appeared and approached producers, and then suddenly disappeared in order to escape payment. Traders said as a result of the low opportunities of employment especially for young Bedu who had lost their jobs in the Gulf States following the

Gulf War in 1991, or who had retired early from the Jordanian army, a great number of them tried to enter into the livestock business. According to the traders interviewed, this group of people lacked the experience and the knowledge of trade necessary to avoid trouble and difficulties. Traders also claimed that the financial laws in the country enabled such people to abuse producers by writing them false cheques and then receiving no punishment for this kind of act.

Nevertheless, this type of marketing arrangement, i.e. sale on credit, is still practised, albeit not exactly as before. When those farmers who sold their animals on credit were asked how they made the decision to sell to one trader rather than another, they claimed it was usually because the trader was known and they had sold to him previously. Producers indicated that they were trusted because they were familiar, implying an acquaintance extending over several years. Continuity was also the reason why they gave credit. Moreover, in one case where one of these traders went to pay, the farmer asked him to keep it for the next year. Due to the fact that Bedu, especially the older generation, have no knowledge of or trust in the banking business, some of them have strong faith in wealthy traders. Furthermore, they know they can ask for their money at any time and those wealthy traders will raise the cash and return their money.

7.9 Discussion and conclusion

In this chapter the main investigation techniques used were open-ended interviews and general discussions with market participants in order to investigate different aspects of livestock marketing in the Badia. Additional information was gathered through visits to terminal livestock markets and customs departments.

In addition to variation according to seasonality and forage production, the organisation of livestock trade is affected by the cost and availability of feed, animal health, and demand from neighbouring countries. According to traders, grazing is a very important factor in determining the health of animals, especially in the lambing seasons. Grazing is important for ewes and lambs during weaning and this was confirmed by mobile Bedu receiving higher prices for these animals. The need for subsidised feed is important, but this does not exclude the need for fresh grass.

Producers who sell in outlet markets usually do so because of a financial crisis. Traders indicated that producers who have no immediate need for cash, keep their animals and announce them for sale. Sometimes traders from villages give advice to producers if they are related, which is often the case. Traders stated that most of the time weak and unhealthy animals, rather than good animals, found their way to outlet markets. This can be said about sales of unproductive sheep and sick lambs. Farmers tend to sell animals that can not be sold direct from the farm in outlet markets.

Traders with little capital deal with small farmers who tend to stay in or around villages. Those with larger flocks have their own deals with exporters and sell on

credit. Some arrangements are fixed and so larger flock producers are seen to sell to the same traders every year. Small traders buy from small flock holders and big traders from larger flock holders. Small traders with little capital usually have no access to buy on credit and if they do it will not be for more than a week.

The Saudi market has the greatest influence on the Jordanian market. In other words, if the price is good in Saudi Arabia then this will be reflected in Jordan. The price difference is usually about 20 JD higher in Saudi Arabia. Exporters from Mafraq and Zarqa usually employ Bedu from the area to collect animals for them and this was clearly the case in cross-border trade from Syria.

The peak of demand for lambs is centred around the *Eid* festivals and both traders and producers are aware of such demand. Sale of animals usually reaches its peak two weeks before *Ramadan*. *Eid Al-adeha* is the most important occasion for sale and prices usually rise before the *Eid*. The consumption and the export demand with the *Ramadan-Hadj* season has important implications for domestic prices. As these festivals have no fixed date, producers can not plan production to be at a particular time of the year.

The presence of the great number of middlemen linking production areas to consumers is a vital element in the Bedu livestock production. They provide producers with more marketing options, making the raising of cash accessible with less effort and lower transport costs. The large group of middlemen with little capital enables mainly small scale producers to maintain their marketing choices.

Export traders maintain control over the export of animals to the Gulf market, providing mainly large scale producers with marketing choices. Export traders have maintained strong relationships with producers through their long existence in the trade industry. Tribal links shape the organisation of trade, especially cross-border trade from Syria.

The presence of bankrupt traders, the loss of faith in finance systems, and the entry of newcomers, especially the younger generation, in the trade business, has resulted in the traders' lack of creditability and trust and this in turn has affected the marketing arrangements and has become a new pressure facing the organisation of trade in the Badia.

Chapter Eight

Findings and Discussion

Introduction

The main purpose of this study was to investigate and provide a better understanding of the processes of the Bedu livestock marketing system in Jordan, particularly farmers' market linkages and decisions. The stratified random sample covered 23.4 per cent of the total population of farmers in the study area and was carried out from July-November 1995. A questionnaire for farmers and interviews for traders was applied.

This chapter discusses the issues which emerged from the analysis of the data relative to the findings of the studies reviewed in earlier chapters. The discussion is divided into three main sections. The first section is concerned with the environmental factors affecting farmers' marketing behaviour, the second section with the functioning of livestock marketing, and the third with market performance.

It should be remembered that the objectives of this part of the study in order of importance were:

1. To explore, analyse and explain the marketing of livestock (sheep & lambs) in order to determine the external and internal factors that affect producers' marketing decisions;

2. To describe and analyse the livestock market channels and processes in terms of the organisation and role of major market participants;
3. To provide an analysis of farmers' market behaviour and problems;
4. To suggest policy recommendations and further research into livestock marketing problems in the Badia of Jordan and
5. To contribute to the whole body of research data and materials on livestock marketing and farmers' decision making in similar areas of the country and elsewhere.

Section One

8.1 Environmental factors and farmers' marketing decisions

This section aims to offer a general review of the environmental factors that affect farmers' marketing decisions in the Badia. These consist of physical and social factors affecting livestock production, welfare, and the interaction between production and marketing decisions. This study will firstly present the role of livestock and what it can provide for the household. Then, focus will be placed on the role of the market characteristics and their influence on the following issues: organisation of marketed livestock, sale strategies and preference, market conditions, and access to market information.

8.1.1 Role of livestock in Bedu welfare

Livestock production under a traditional system is not a profit maximising strategy, but rather concerned with long term security to the extent that decisions are taken to avoid risks involving the household. Since the Bedu economy does not produce all the food a household needs for basic subsistence, food requirements from livestock products can be considered as one of the main motives for herding animals, especially among poor households. Due to the absence of alternative sources of income, households rely heavily on milk and milk products. Bedu families consume more non-milk products in the summer and early winter than in the spring, when milk and meat are relatively plentiful. During the late summer, food supplements of milk products are limited and so food requirements are met by the exchange of animals in livestock

markets in the region. This makes the exchange rate between livestock and household requirements vital for the survival of many Bedu, particularly in the dry season.

Livestock production often remains the only option for Bedu society, due to the absence of investment alternatives that suit the Bedu attitude. Thus, Bedu families derive their livelihood mainly therefrom, utilising labour available within the household. Female participation in the household economy is limited to this type of production, as a result of cultural and traditional Bedu attitudes. Moreover, Bedu who retire from the army or jobs in towns from the age of 30 upwards, are left with no other option of employment in the Badia and are forced to secure additional income and become self-employed. Families respond to this new environment by adding new economic activities and by changing their approaches to traditional activities, partially engaging in input and output markets which are often imperfect or incomplete.

Household production under traditional systems is found to have a series of characteristics that differentiate it from commercial production. With the high cost of production in this sub-sector, labour allocation may be costly if it is hired. Consequently, family labour is the most important input in livestock raising, involving mainly guarding or herding animals, although this may force some families into making a choice between sending their children to school or limiting the number of animals they keep. The issue of schooling has been the main motive behind settlement and the reduction in animal numbers in many households. One aspect of the relationship between labour and household livestock marketing which deserves

mention is the residual time allocation of labour to herd lambs when they have to be separated from flocks. Limited overall family resources to meet financial obligations and the few alternative income opportunities available is a likely explanation for this phenomenon.

Cultural beliefs have remained one of the factors that attract households to livestock production, which is also a source of wealth, subsistence and occupation. Domestic animals are regarded as giving a family nobility and prestige, and Bedu identify themselves with their animals in an inextricable manner. Animal slaughter is an example of when Bedu rely on their self-production to meet social customs confined to community occasions such as acts of hospitality, marriage and death. Since Bedu have a basic knowledge of rearing animals, this sub-sector remains crucial for their employment. Animals are also seen as an important capital stock, largely secure, but a convertible asset. Even while basic structural traits of a society may appear to be unchanged, constant changes bearing considerable impact occur within it as well as in its physical and social environment.

While the Bedu subsist mainly on their income from livestock production, there are other sources of income such as wage labour, arable farming, trade and smuggling that cannot be neglected even when some are relatively insufficient. It is clear that in these circumstances livestock production is neither a commercial nor a traditional system, but one that can best be described as transitional. One must then ask the question as to what kind of factors have contributed to the changes taking place. Answers have to come from an examination of the present system under present

conditions. The description and analysis presented in Chapters 2, 5, 6 and 7 indicate the following:

- The cost of production is very high and many Bedu realise that raising animals may bring them little gain;
- Herding animals causes some constraints on Bedu families who may have to be mobile and so may leave their houses and even leave their children behind for schooling;
- Keeping animals within a village puts many Bedu into conflict with authorities, neighbours and farmers;
- Many Bedu practise arable farming, and livestock can cause damage to their farms and gardens;
- Their animals are usually exposed to risks such as extreme climatic conditions, disease, theft and shortage of feed;
- In winter, the need to feed animals may raise social obligations as Bedu are forced to rely on friends and traders in order to borrow cash; and
- Maintaining livestock production has created social problems within the Bedu family, as younger generations who provide the labour needed for such production develop a negative attitude towards their involvement in livestock rearing.

These factors raise the question as to why Bedu continue herding animals when it seems that economic and social circumstances work against such production. Educated Bedu often confront their family with this, forcing the family into giving up herding altogether.

The same question has also been asked by officials responsible for implementing the agricultural policy in the country. In an interview that took place during the field work for this research in 1995, one official considered such livestock production in Jordan "a waste", and added "the number of livestock we have here in Jordan will not meet the country's demand for meat for one day". The lack of comprehensive knowledge about the Bedu's life and their strategies and behaviour toward livestock production, means that such views will remain. Dahl and Hjort illustrate this in quoting Fransen et al.:

Compared with modern systems of animals production.../the pastoral ways of exploiting semi-arid regions/...are highly wasteful systems of resource exploitations.. There are vast differences in the efficiency of beef production between advanced and primitive /(sic!)/ economies. It takes 11 head of cattle to produce one metric ton of beef in the United States compared with 10 to 20 head for Australia and Argentina. By contrast, it takes 55-200 to produce the same amount of beef in Africa. The differences are just as dramatic in terms of dairy production. Exotic breeds can produce an average of 5000 litres of milk per year (e g Frizian) whereas the average for African cattle is less than 500 litres. (Cited in Dahl and Hjort, 1976, p.19)

Whilst the Jordanian official was not entirely wrong, he failed to recognise that Bedu livestock production not only contributes significantly to the gross national product of the country, but that it is also a major sector on which the welfare of many people, in terms of food, cash and labour, depends. One answer to the question raised by educated Bedu and government officials is provided by Sachs:

Observing a group of Indios who work in their fields in the mountains around Quiche, and seeing the barren ground, the primitive tools and the scanty yield, one might easily come to the conclusion that nothing in the world is more important to them than increasing productivity. Remedies could swiftly be found: better crop rotation, improved seeds, small machines, privatization, and anything else the cookbook of business management might recommend. All this is not necessarily wrong; however, the economic viewpoint is notoriously colour blind: it recognizes the cost-yield relation with extreme clarity, but is hardly able

to perceive other dimensions of reality. For example, economists have difficulty in recognizing that the land bestows identity upon the Indios since it represents the bridge to their ancestors...The outlook of the Indios is incompatible with that of the economists: neither land nor work are for them mere production factors waiting to be optimally combined (Sachs, 1992, p. 6).

8.1.2 Bedu marketing decisions and present environmental conditions

Production and marketing in the Badia are undergoing major transformations. On the production side, the effect of high costs is altering the composition of animals, their structure and distribution. More importantly, high costs have caused a redistribution of livestock, both geographically and in terms of ownership. At the same time, traditional livestock production is increasingly pressured by the expansion of agriculture and the harsh climatic conditions, reducing the availability of open rangelands.

In this study, Bedu marketing practices are found to some extent to be similar to pastoralists' marketing behaviour in other developing countries. Kerven (1992) argues that marketing decisions of pastoralists are the result of a range of factors which may either inspire or restrict farmer exchange. Even though sale decisions are more to do with individual motivation, other environmental factors such as harsh climatic conditions, government policy and economic and social changes must also be taken into account. Decisions are therefore the result of humans interacting with their environment. Cossins (1983) stresses that decision making concerning both production and marketing in most pastoralist societies is found to be deliberate decisions based on environmental and household conditions.

Generally, Bedu have to cope with a wide range of constraints which can be categorised as natural, changes in the feed subsidy policy, animal disease, government policy toward livestock marketing, labour allocation, and constraints arising from household characteristics.

8.1.2.1 Natural constraints

In the past, nomads' mobility allowed them to adjust to many constraints and profit from widely-dispersed resources whose availability varied from year to year. The Bedu's production management system for herding their animals suits their environment. Animals are herded eastward and westward, allowing natural vegetation to recover (Nesheiwat, 1991). Today, the increased fragility of the Badia due to soil deterioration appears to be one of the most disturbing effects on livestock development. The large extent of rangelands in the Badia is found where rainfall is low, variable and unreliable and where long annual precipitation averages below 75 mm. Pastures in the area have deteriorated and become incapable of maintaining the number of animals found in the country.

Moreover, government policies toward rangelands and livestock production are both shown here to vary widely over time. In several other spheres, government policy has had both major positive and negative effects on livestock production. This phenomenon is often encountered in many developing countries, such as Africa. Kerven (1992) points out that pastoralists have been blamed by government officials for the damage and the deterioration of rangelands because of extensive farming. On the other hand, many researchers, including Oakeley (1996b); Nesheiwat, (1991);

Salzman and Galaty, (1990); Livingstone, (1984); and Kay, (1978) confirm that pastoralists' traditional farming practices are more harmonious with the environment in that their mobility allows pastures to recover from grazing. Moreover, selling animals in response to droughts is another indication of their environmental sensitivity. However, political developments in the Middle East such as the creation of new states, has considerably restricted Bedu mobility. This has led Bedu to resort to overgrazing areas, and to remarkable disorder in the harmonious system they once had.

It is worth mentioning here that while government officials describe the practice of livestock production as a 'waste' and accuse the Bedu of damaging the environment, their own policies have aggravated the problem. In the past, the Jordanian government maintained a stable policy toward land ownership in the Badia in that the land belonged to the state, and the tribes held additional usufruct rights (Abu Jaber et al., 1987). In recent years, the government introduced a new policy by transferring the ownership of land to individual tribal members, which in turn encouraged the sale of land in the Badia. Government attempts to bring tribal lands under private title have ended up removing large areas of land from grazing because of the growing interest in using pastures as farms, despite this type of farming proving to be both uneconomical and harmful to the environment, particularly water resources. According to present estimates, forage production from rangelands has dropped 50 per cent during the last 15 years and will continue to drop by 33 per cent in the coming 15 years (Oakeley, 1997).

All the above factors contribute to the high cost of livestock production. Estimation of supplementary feed accounts for 68 per cent of production costs (Roe, 1996). Before the removal of feed subsidies, farmers were able to make profits from livestock farming, an estimated (13.5 JD) average profit per head. This figure then fell to 1.62 JD when the subsidies were removed, so emphasising the dependence of the livestock production system on such subsidies (Oakeley, 1996b and Roe, 1997).

The reaction of Bedu to overgrazing or degradation of pasture and the high costs of production is to alter their decision making to cope with the new circumstances. Extreme conditions have both a short and medium term effect on Bedu marketing. In the short term, as livestock are threatened and the price of feed rises, the market is flooded with animals being off-loaded and more expensive feed being bought (the so-called stress-sale syndrome). Livestock prices also drop rapidly. In the medium term, Bedu producers have to rethink and some give up production, as reported by Oakeley (1996b).

Despite this, many farmers have a reasonably good understanding of the most profitable times to market their animals, albeit they are often compelled to sell in response to farm input needs. In the study, farmers were asked why they sold at a particular time and what they intended to do with sales revenue. Their responses suggest purchase of feed to be the most important factor. Other farmers indicate that they sell livestock to pay off debts incurred through the purchase of feed on credit or cash borrowed for the purpose of purchasing feed earlier in the year. Some households have to sell their lambs to the same lenders as repayment of debts.

My field work revealed that small flock holders in the study area generally receive lower prices for their animals than full time farmers. Abdullahi (1990), supports this and reports that large-scale farmers are in a better position when they make their sale.

The marketing strategy of small-scale producers with a low commercial offtake potential differs markedly from that of herds who can afford a breeding policy which regularly produces stock in surplus to subsistence requirement (Abdullahi, 1990, p. 164).

In order to demonstrate the many factors which might cause this disparity among farmers in the Badia, a more detailed comparison between the two groups, in terms of their sale style, will be drawn.

Owners of larger flocks rarely take their animals to the terminal markets and most of their sales occur on location, leaving them with the choice to sell or not to sell and enabling them to escape transport costs. They also benefit from sale on credit, and sometimes sell without a down payment if they have trust in the traders. This sale pattern usually attracts traders who are willing to offer higher prices. Furthermore, their animals are in better condition, especially when they leave lambs suckling for a longer period, and their wealth enables them to keep their animals until the opportunity of a sale appears.

In contrast, smallholders wean lambs at an early age which results in poorer quality animals. This fact is underlined by a household's need for milk and milk products. Liquidity is a further constraint which limits their sale choices, and sometimes high transport costs force farmers to dispose of their animals in outlet markets and receive

low prices for their animals. The sale of sheep, especially ewes, is strongly associated with pressing cash needs for the purchase of feed.

8.1.2.2 Subsidising feed

One of the areas of greatest importance to this study is the relationship between interventions aimed at supplying subsidised feed to farmers and their impact on livestock sale. Feed is one of the major inputs in livestock production in the area, and although it is available for purchase by farmers, the withdrawal of government subsidy in late 1996 has made it expensive and less affordable to small-scale farmers. Positive government intervention in livestock production reduces the risks and uncertainty, and improves the quality and availability of livestock production throughout the year. This benefits livestock sales by relieving farmers of the need to reduce their flocks at the time when demand is not strong, or when the marketing system is not able to absorb them. Supplementary feed costs accounted for 68 per cent of production costs for producers in the Badia prior to price rises in August 1996 (Roe, 1996). They may now account for 74 per cent of production costs. The finding that the main factor forcing farmers to sell early is the high cost of feed, is further supported by other recent research findings, see for example, Blench, 1996; Campbell and Roe (1995); Campbell, Jones and Roe (1995-1996); and Oakeley, (1996).

8.1.2.3 Livestock disease

Livestock diseases such as pneumonia, parasitic diseases, enteritis, ectoparasites and viral diseases, which include foot and mouth, blue tongue and sheep pox have been commonly reported in the Badia. This clearly indicates that endemic and dangerous animal diseases are not effectively controlled. Viral diseases are endemic in Jordan,

and there is evidence that the incidence of blue-tongue is near 80 per cent and PPR is at 60 per cent and increasing. For example, the PPR infections weaken the animal's immune system and make it susceptible to a range of infections. This and other diseases are commonly found in village based flocks (Oakeley, 1997).

Livestock owners are becoming increasingly concerned about abortions and general ill health. According to survey figures, the kidding/lambing rate of herds stands at 0.41, (about half the normal level for goats in tropical countries under traditional management). One of the large livestock owners claims to have lost over 200 animals in a recent outbreak of disease. Others complain of high rates of abortion (sometimes up to 30%) undermining productivity. Usually poor health is attributed to bad supplies of feeds, while a few individuals blame general malnourishment (Roe, 1997, p. 6).

The fact that livestock disease is widespread is another constraint more directly related to human intervention and demonstrates the impact of disease control on livestock marketing. A further constraint concerning animal health arises as a result of plastic waste which is increasingly being used for industrial and agricultural purposes. For example, many agricultural areas and bordering rangelands are scattered with plastic bags and black plastic¹. This has resulted in a catch-22 situation for farmers. On the one hand, they want to reduce the cost of production by grazing on rangelands, but on the other hand, they face a great risk of losing the animal due to the toxic effects of this plastic on the animals which eat it (Blench, 1995).

The findings of this study reveal that disease is the main cause of stress sales among producers and traders. For example, animals sold because of disease fetch the lowest prices, with some farmers selling animals for a quarter of their expected price.

¹ Black plastic is used widely in agricultural areas, bordering rangelands, to reduce evaporation in fields under drip irrigation.

Furthermore, farmers and traders change their selling or trading strategies by practising early sales as a result of the increased risk of diseases.

Tribal links and kinship remain vital to the survival of the livestock trade for both farmers and traders. My study also indicates that the sale of unhealthy animals may cause some damage to trade organisation. Trade relations between farmers and traders have been negatively affected, especially on sale on credit which is considered to be a very strong motive for transaction. The continued presence of disease then necessitates policy measures designed to protect healthy livestock from the threat of disease from infected livestock.

8.1.2.4 Government policy toward livestock marketing

Apart from cross-border trade and bureaucratic procedures in export, government policy has a minimum intervention effect in the marketing structure. The Ministry of Agriculture and the Ministry of Supply are the main government bodies who deal with livestock production as there is no single department in the country which deals with livestock marketing. However, government policies concerning land ownership, animal feed, disease control, and the inefficient infrastructure of formal marketing have had a great impact on livestock marketing.

The absence of a clear government policy toward livestock production and marketing has also been pointed out by Oakeley, (1996b); Blench, (1995) and Randhawa, (1990). They assert that there is an absence or a lack of co-operation and sometimes contradiction in some government institution policies.

The Bedu livestock production system is under pressure. They are no longer allowed to adjust naturally to phenomena such as overgrazing, but are increasingly being brought into the mainstream of development by indirect forces beyond their control, and into situations where traditional pastoral strategies may become less efficient. These strategies then become less useful and so Bedu become vulnerable and left with no room to manoeuvre.

There is a positive relationship between infrastructure and livestock marketing. Government policy towards conditions of infrastructure has also had a minor impact on Bedu livestock to be marketed. Whilst it has improved in the Badia, some remote parts still suffer from poor infrastructure. Furthermore, the lack of facilities in formal markets has some impact on the sale of livestock and any improvement such as fences, pavement on the ground of markets, watering, feed, and public conveniences might encourage more producers to sell there.

8.1.2.5 Labour allocation

As pastoral households in developing countries are influenced by economic development and market integration, their lives change in a variety of ways. New technologies, new products, and new outlet markets all combine to create an evolving economic environment for the family. In many cases, families respond to this new environment by adding new economic activities and by changing their approaches to traditional activities. This area has been investigated by many researchers, among them Meir (1997); Ensminger (1992); Abdullahi (1990); Salzman and Galaty (1990); Marx (1981); and Kay, (1978), who undertook the task of investigating the shift of

labour in pastoral societies. Even though this issue was investigated from each researcher's area of interest, the majority assert that the younger generation are more oriented toward salaried jobs than livestock production, leaving the older generation with the responsibility of managing small numbers of animals.

8.1.2.6 Household characteristics

8.1.2.6.1 Bedu household decisions and income

Empirical evidence suggests that a large household is able to allocate labour and reduce the cost of production. There may also be an increase in household income if family members search for other types of employment. Cash spending shows that animal sale income is used for feed, food and school supplies. My field work shows that investments in increasing flock size are only found in wealthy households financed by lamb sales. Investment opportunities in the Badia are rare apart from livestock production, such that sheep have become an important factor in the process of the accumulation of wealth.

This present study brings to light the fact that income generated from the sale of ewes is consistently used for the construction of houses, for weddings, and for the purchase and maintenance of vehicles. From the information obtained in the field work, it could be said that families generally hesitate to sell sheep unless they are forced to do so. Many families also have to cope with the harsh environment that can affect their livestock production, and so find ways to compensate for these problems when they arise.

8.1.2.6.2 The need for cash

Households use cash for a variety of purposes. Buying food and consumer goods, paying for services, transport, rent, emergency needs and ceremonial expenditures all create cash needs for Bedu households over the course of the year. Additional cash expenses include hired labour, shepherds and other inputs. These production costs come at a set time of year and can be postponed or foregone only at the cost of reducing or endangering production. Some minimal cash needs can be described as fixed; it might be claimed that some amount of food and feed is a fixed minimum for survival, but beyond this, the need for cash is flexible over time. It helps to think of households as having a liquidity problem requiring a certain amount of cash on hand at various times of the year. Cash may be coming in from livestock produce, wage labour, and if these sources provide a sufficiently large and regular flow of cash then animal sales will not depend directly on the need for cash. An extreme case is the distress sale, where an animal must be sold immediately in order to pay off a debt.

Farmers who sell most or all of their animals early then have cash to spend as they see fit, but one must not be too quick to assume that money is the most liquid asset, as it is in developed market economies. In the Bedu area, the possibility of extreme scarcity or even a complete absence of lambs for sale before or after the lambing season months can arise.

Investment capital constitutes another major input that is difficult to acquire. Borrowed finance from institutional sources for agriculture is difficult to acquire due to high lending rates, the collateral security required by the banks and religious belief.

This has shifted attention to private money-lenders, who are mainly traders and wealthy farmers. The lack of choice in borrowing sources and the domination of the agricultural credit market by traders has resulted in credit transactions that tend to link credit to other obligations. For farmers, this takes the form of linking livestock inputs to future livestock output, and for some farmers this results in a limit on whom they can sell stocks to. In balancing cash needs against the desire for household security, the farmer must also consider the possibility of borrowing money if their livestock and income from other sources are insufficient. Interestingly, my interviews and discussions with farmers reveal that interest on borrowed money does exist. This interest takes different forms, such as selling to a particular subject, usually the money lender at a higher price, or purchasing animals at higher than their marketing value and selling them at the present market value.

Section Two

8.2 The functioning of livestock marketing

This section will discuss the findings from the interviews with farmers and traders in relation to the function of livestock marketing. The discussion is presented under the following headings: the marketing channels, organisation of marketed livestock, market information, sale strategies and preference and market facilities and infrastructure.

8.2.1 The marketing channels

Generally, the livestock marketing system consists of two main trades, the local and the export trade. The main participants in the former are mobile middlemen, butchers and some producers, while the latter is characterised by exporters and their agents who maintain trade links in regional markets, mainly in the Gulf. Local trade is dominated by a large number of participants, but the majority of these are mobile traders who roam the area searching for animals. In contrast, the export trade seems to have fewer participants because there are many restrictions such as official, capital and regional trade links in other markets.

The middlemen traders are relatively active in their procurement and distribution activities. They tend to operate with low capital and purchase from producers on a visual rather than a weight basis. They are also able to maintain an informal but effective communication link with the markets and livestock production areas in which they operate. Due to the mobility of production and the lack of affordable

credit, the traders tend to purchase on location and where farmers are willing to sell on credit. The degree of market power exhibited by export traders is determined by their financial ability. They are small in number and have more access to domestic and regional traders.

Functionally, two classes of markets exist in the area: the location of animals and major outlet markets. The field work indicated that the total recorded number of animals sold through the market channel was 39,247 during 1995. The location/village markets are generally connected by climatic conditions and location of producers. I estimate that 83.2 per cent of farmers' sales took place in such markets in the Badia, whereas only 16.8 per cent of sales were in outlet markets. The effect of transport on the marketing of livestock is therefore very significant.

The flow of animals to markets should be connected to price. However, it is evident that other factors strongly modify this effect. Most transactions take place where the animals are pastured, since the long distance to any market dissuades farmers from selling there. They also prefer to avoid transport costs, and fear that transactions might not take place at the market, thus placing them in a weak bargaining position. Family ties are important in trading channels, either easing entry for some or making obstacles for others, especially when such trade requires the availability of capital for traders. Co-operative arrangements among mobile traders are found to be common and can cause a lack of competitiveness in the livestock trade because market information is shared through their personal relationships rather than on purely business interest.

8.2.2 Organisation of marketed livestock

The composition of animals offered for sale is male lambs, female lambs, sheep and new-born lambs. The type and age of animals offered for sale varies among farmers. Better-off farmers tend to keep animals longer and then sell them at an older age. Early lambs come on to the market as early as November or December and sales continue until the following September. The sale of sheep and new-born lambs generally occurs in the early part of the year. The sale of lambs reaches its peak from late February until early May. With the intention of keeping their flocks healthy, some farmers sell new-born lambs together with old and weak sheep in order to secure the sale. The timing of livestock sales is usually a response to different constraints such as variations in the condition of the animals and the risk of holding livestock over time, the cash needs of the producers, and the demand for animals.

Since so many elements enter into the decisions on the sale of livestock, the timing of sales and the proportion sold may not appear to maximise profit purely in cash terms. In some cases the direct, measurable costs of fattening may not be covered by the revenue received at the margin in the short run; in others, potentially profitable fattening or sales may not be carried out because of indirect costs such as a loss of capital which is found to be caused by disease. Profit could be gained from various investment combinations and it is no surprise that some farmers are involved in trade patterns that result in the highest possible profit. The motives of farmers are numerous; increasing net income is one, but investment security or awareness to risk can also influence decisions. For example, the direct costs of fattening include losses due to diseases, feed, watering, and labour and can outweigh its benefits. Finally,

some farmers simply do not have as wide a range of options as others, and so find it necessary to take non-profit-maximising decisions because of their own economic circumstances, distress sales being a case in point. These are low income households that may have to borrow later in the year, and so are more likely to finish the year at a lower income level. Households with more resources have a wider range of choice, and so while most producers in the study area expressed the benefit of a late sale, only large farmers were independently able to do so.

The same constraints mentioned above, such as the economic, social, political, environmental, and demographic characteristics of a household influence the flow of animals to the market. According to Blench, (1995) the average weight for lambs sold in the market was estimated at 20 kg. The age of lambs at sale ranged from two to six months depending on the type of household. To alter this type of behaviour among farmers, to increase growth rates and convince farmers to fatten animals requires an understanding of the factors that lie behind such an attitude. For those who argue for higher sale weights in raising producers' profitability, the following forces that pressure an early sale have to be taken into consideration: the household and its dependence on milk, diseases, requirement for cash, consumer taste and avoiding risks and costs.

A combination of reasons account for the early sale by households in relation to milk demand. To obtain milk, farmers have to wean animals and this in turn requires weaning costs such as labour and feed especially among small scale farmers. It is evident when farmers can cope with such costs, as they tend to keep lambs for longer.

For example, farmers with large flocks let lambs suckle up to 4-5 months until the date of sale, whereas small stock farmers tend to separate lambs during the day and free them at night. This can be explained by the fact that small farmers rely on milk for household and commercial purposes.

Consumer taste, which can be considered as a positive rather than a negative factor, is driven by consumer behaviour when the market does not currently want heavier lambs. Red meat consumption is still classified according to age, sex and weight, with male lambs preferred over sheep for their meat. Consumer taste favours male lamb meat at age two months or less, and not yet weaned. Usually prices for these male lambs are high and it is considered to be the most expensive meat. Consumer preferences for meat from young lambs at no heavier than 39 kg. is one of the main elements in the present marketing forces in the Badia. This element will continue to encourage the bias of buyers toward the purchase of young animals and encourage early sales among producers, despite the economic argument that higher weights will increase producers' profitability.

8.2.3 Market information

The absence of relevant and appropriate information forces decision makers into sub-optimal decisions. To ensure the effectiveness and efficiency of marketing, it is of paramount importance that all parties should have access to relevant market information. Market information works equally and adequately to inform all buyers and sellers, and encourages honesty in market dealing. The absence of information can lead to high transaction costs. For farmers, this can put them at a disadvantage when bargaining with traders, and some farmers are tied to credit relations which

might prevent them from achieving a reasonable price. Some farmers might sell to one trader with whom they have a long relationship, thus limiting their choice between buyers and their chances of receiving a fair price.

Some households receive low prices when they are compelled to meet cash needs or to respond to a disease crisis. Marketing may also be affected by lack of information about the best time to sell or the ability to sell at a more opportune time (in terms of price and demand) because of certain market structure problems. These problems may be simply due to the isolation of the region or high transportation costs. But one can conclude that an increase in the price of lambs and sheep alone may not necessarily elicit a strong market response from these farmers. The 193 farmers interviewed were asked whether they acquired information on current prices, the source of information, when they sold, whether they sold to the same trader, and whether they were visited by traders before they made the sale. Most producers indicated their knowledge of market information, with almost 70 per cent stating that they collect price information before making a sale. Sources of information include other farmers, traders, friends and relatives, and visits to main markets. Accuracy of information is thus an important issue here when most sources of information are based on verbal communication through many people.

Information on market conditions is accessed in a traditional manner through personal relationships, observation, and expectation. Agreement on transactions between buyers and sellers is usually based on the last transaction that took place in the area on which they have information. In this study, farmers who were informed about current

prices before they made their sale obtained significantly higher prices than uninformed households. Traders are more able to maintain contact with other markets through their visits and mobility between markets, and so gain an advantage over farmers by weakening their bargaining ability. Even though traders are considered one of the main sources for market information, they do not necessarily share all their information with farmers.

The lack of market information is seen as one of the constraints inhibiting the smooth performance of livestock marketing, since it exposes farmers to abuse from other bodies and agents. In order to avoid this, the parties involved should co-ordinate their efforts to ensure that farmers have knowledge and access to a wide variety of marketing information.

8.2.4 Sale strategies and preference

Marketing strategies vary according to the type of animals sold, the season and the number of animals for sale. Several marketing options exist and can be outlined as selling per head or on weight basis, selling in location of animals or in outlet markets, selling on credit or cash and credit. Nearly 99 per cent of farmers favour selling livestock on a per head basis, and this method of sale has been standard practice in the area for years. One factor that can cause farmers to hesitate to sell is lack of trust, for example illiterate farmers fearing being cheated by buyers.

Farmers prefer to sell on location of animals, which indicates that they take into account the costs of taking animals to outlet markets. Moreover, this is facilitated by mobile traders who become very active when the demand for animals is high. Most of

the farmers interviewed indicated that cash shortage is by far the most widespread problem limiting decisions.

When buyers are scarce, farmers are forced to sell their animals on credit to traders. This allows traders to operate with less capital than they would otherwise need, easing entry to the market and encouraging competition. This involves some risk and potential loss. Sale on short term credit was observed in the study area. The common feature of the credit system in the Badia is where farmers extend credit to traders to facilitate transactions and to have higher prices. There are other types of credit which extend from traders to farmers, but have hidden implications. They cannot be considered as pre fixed sales because they involve other sales of commodities, mainly feed.

8.2.5 Market facilities and infrastructure

The existence of marketing facilities not only affects marketing costs, but also influences the market opportunities open to livestock producers and traders. Movement of livestock is mainly carried out through the road network. However, accessibility to producing areas depends on the quality and mileage of roads and the ability to reduce marketing costs. Whilst inadequate marketing facilities and services are partly responsible for high marketing costs, communication facilities and market information can reduce the effects of such constraints.

Section Three

8.3 Performance of the market

The main aim of this section is to examine the market performance by taking into consideration present and future environmental conditions. The observations made in this study, through the methods selected, reveal certain characteristics of livestock marketing in the Badia that could influence judgement of its market performance. In order to do so, the following areas will be taken into consideration: exchange arrangements, financial and credit practices, transportation, access to market information, the rules that regulate trade, strategies and preferences, and Bedu society being in a stage of transition.

Both nomadic and semi-nomadic Bedu society is patriarchal, with the relations between individuals and groups being tied to customs and tradition, either inherited from old practices or developed in response to changes in the environment. Moreover, present economic relations are regulated according to traditional customary Bedu law. Market performance in the Badia should therefore be judged not only in terms of its present state, but also within the context of its traditions.

8.3.1 Market conditions

The Badia livestock market thus functions largely on the basis of tradition. The sale of animals by farmers is influenced by the environmental forces surrounding both the production system and the household. Whilst trading still operates largely in a traditional manner, a household's decision making, including marketing decisions, has evolved and adapted in order to cope with present conditions. Moreover, the market

has responded to modern life to some extent through the use of trucks, cheque books and a less mobile market.

For example, the use of trucks in the transportation of animals has reduced the amount of time and space dedicated to trade, and has enabled some farmers and traders to reach a wider area and trade in remote outlet markets. However, the cost of transportation can be an obstacle to some farmers and traders from taking advantage of such facilities. Other farmers might not take advantage of transportation, maintaining the view that selling away from location puts them in a disadvantageous bargaining position. This attitude seems to be rooted in traditional beliefs which still heavily influence present marketing strategies.

The use of cheque books has had both a positive and a negative effect on the organisation of trade in the Badia. On the one hand they have made exchange easier, but misuse by some traders and a deficiency in the financial laws in the country have resulted in a failure of trust between market participants as some traders do not fulfil their contractual obligations.

As a result of settlement, Bedu are less mobile and their production is limited to one area. This reduces transport costs and brings farmers closer to outlet markets. However, the majority of sales still take place in location of animals, supporting the argument that the market is still functioning in a traditional manner.

8.3.2 Market arrangements

In the Badia, there are many sales arrangements that govern relationships between sellers and buyers, such as cash sales, sales on short or long term credit and exchange of animals. These arrangements take place in a traditional way, such that verbal agreements are commonplace. No paperwork is involved in the transaction, and there is therefore no guarantee that the seller or buyer will not cancel the sale, if he suspects that he might be cheated or receive an unreasonable price for his commodity. This raises the question as to why such agreements continue to take place with no government regulation. Transactions and contractual obligations are governed instead by a system developed over decades of tradition, personal ethics, reputation, tribal links and social standards.

8.3.2.1 Social regulations governing the exchange relationship

In Bedu society, honour, shame, and good and bad reputation have controlled and continue to control the behaviour of individuals. Even in present day Jordan, any kind of conflict arising involving the Bedu, is dealt with by “Bedu law” as well as civil law. Conflicts within the market are dealt with in terms of the above social values as well as the Bedu law, and often these rules and regulations have more power than laws imposed by the government. Examples of conflict include forged or bouncing cheques, where government laws alone were inadequate in dealing with this near crisis in the country.

Tribal links and personal relationships have played a major part in regulating exchange between buyers and sellers. In general, it is not possible to apply a particular Bedu law to a particular conflict in the market, since the same rule can be applied to other

social problems. According to some farmers and traders interviewed in this study, there were incidents where money was lost as a result of buyers failing to meet contractual obligations. It is interesting to note that they compared past and present conditions surrounding the enforcement of contractual obligations, and stated that previously failure to meet such obligations was rare.

Whilst it is true that the introduction of modern methods into the market has facilitated transactions, some negative effects have accompanied these changes. The problems with the use of cheques has resulted in a lack of trust, a fundamental element of the traditional market. Under Bedu law, complaints are addressed directly to the head of the tribe. If the conflict is not immediately solved then it will take on the appearance of a crisis, believed to undermine the honour of the family. The situation is more serious if it is between individuals from different tribes. Aware of possible consequences, the Bedu will pressure the individual(s) concerned to solve the conflict amicably and peacefully. If this fails, they will refer back to a similar case and implement the same solution.

The application of both Bedu and government law has weakened the power of the family and the tribe in solving such problems. Moreover, as a result of settlement and adaptation to modern life, individuality has become more prominent in Bedu society. It is interesting to note that most instances where transactions fail or contracts are not enforced, are because the buyers are of a younger generation and do not hold such strong family ties.

8.3.2.2 Trust

Trust is one of the main factors that has facilitated transactions in the Badia. There are many aspects of trade which depend on trust between participants:

1. Sales are based on verbal agreement;
2. Animals offered for sale are visually examined by the buyer, but the word of the seller is taken as final;
3. Trust is fundamental for sale on credit, especially credit extended from farmers to traders. Faith in traders or buyers to repay sellers has to be assured in order to encourage transactions to take place.

In the past, when the sale of animals was limited in both space and time, Bedu were able to trade easily because they were more informed about other traders. Today however, with the expansion of the market and the growing number of participants, Bedu cannot have information about every buyer. This does not mean that previously Bedu did not face lack of information about buyers, but it was easy to rely on other social aspects to carry out the transaction. In other words, Bedu have traded with strangers, but have relied on other social contacts to guarantee the contract. This requires the stranger to bring with him a third party both trustworthy and known to the Bedu, who, despite not being involved in the transaction, will agree to fulfil the terms of the contract if the stranger fails to do so.

The present market in the Badia seems to suffer, to some extent, from the growing lack of trust which arrived together with the trappings of modernisation. The main factors affecting trust are the trade in unhealthy animals, forged or bounced cheques

and the failure of some traders to repay farmers. Furthermore, trade links to remote regional markets have contributed to the lack of trust in the trade organisation. A single bankrupt trader in the Saudi market can cause many traders in Jordan to fail to meet their contractual obligations, due to a reaction in the chain.

8.3.3 Market information

Market information is also maintained and transformed through social channels. The historical and traditional characteristics of Bedu society have shaped the way and type of information exchanged between market participants. Since Bedu society is inter-linked by tribal and family relationships, members of the society maintain channels of communication between families in different areas. Bedu mobility has enabled them to be familiar with changes in market conditions. As mobile Bedu camp close to each other, they have the ability to maintain a strong relationship and each traveller or visitor serves as a source of information updating Bedu on any recent changes. Bedu are aware, to some extent, of market conditions, albeit not exact conditions, and so informal channels of information are useful when no other information source is available.

The informal channels of information on market conditions are based on the latest transaction having taken place in the area. Bedu farmers and traders try to extract information on all aspects of that transaction by asking about the type of animals sold, their age and condition, the method of payment and the buyers and sellers involved. The Bedu are always interested in such information, regardless of whether they themselves have animals for sale. Producers are expected to share information about

transactions, as they need to maintain good relationships with other producers in order to gain information from them for future sales. Traders are another source who are expected to share their knowledge. Trust becomes an important factor in this case, and according to Bedu tradition, each member of society should be honest in order to preserve his reputation. Individuals are aware that information can travel easily among the Bedu, and so any negative information might damage future business. A bad reputation might also affect a person's marriage prospects, and may even prevent a marriage from taking place.

Market information is still passed on in the traditional way, enabling market participants to maintain their trade. However, the expansion of the market requires an adoption of new procedures and sources of information. Traditional communication channels are insufficient to cope with present developments in the market, the expansion of the market and the growing number of participants.

8.3.4 Farmers' strategies and preferences

Farmers are still bound to their tradition when they sell animals. They are oriented toward one type of market, mixing weak animals with good animals, responding to emergencies rather than price. Their tradition and beliefs mean that they view animals as an asset that can be sold at any time. Ready cash is viewed as money that is easily spent, whereas animals are only sold when the household is truly in need. Due to environmental conditions, their action is justified by the lack of both banking facilities and faith in such systems. Illiteracy is very high among Bedu, and so dealing with

banks is difficult. Moreover, religion plays an important factor when dealing with banking, because according to Islam, interest on investments is forbidden.

8.4 The contribution of this work to the wider field of knowledge

In most food systems there are multiple performance goals, many of which can be specified only in the context of a particular society and culture. According to Acharya and Agarwal (1992) it is the role of society to choose the criteria for satisfactory market performance. Therefore, analysis of marketing systems and their role in the economic growth of developing countries requires an adjusted framework, guided in general by the organisation of this investigation. The question of how and why farmers arrive at certain decisions has led to several different explanations. One of these is that no decision can be taken in the absence of an objective. Objectives are understood as the end to which any activity is directed to achieve and obtain such objectives. However, individuals make their decisions according to their constraints as well as to their objectives. Whilst this makes the task of analysis more difficult, the ultimate aim should not necessarily be a perfect picture of the farmer's decision making process from a behavioural standpoint, since this would be without prescriptive content, but to understand the context in which farmers make decisions. In this sense, the study of food marketing, especially in traditional systems, has to extend its scope to anthropological, sociological, and geographical issues.

Adopting a comprehensive framework is required in order to desegregate the various factors which may influence the marketing behaviour of farmers. Farmers' marketing decisions influenced by external factors such as extreme weather conditions, livestock

disease, government intervention, demand and price, as well as factors within the household have to be considered. For example, certain circumstances can cause some households to make different marketing decisions; such factors are constantly incorporated into the management decision process and can have a significant impact on marketing decisions of all enterprises. Due to the complexity of the farming enterprise under traditional systems, different aspects of production and marketing should be covered to provide a better understanding of the marketing reality. Therefore, it becomes difficult for the researcher to limit the analysis to one particular approach. Moreover, there is strong debate within academia in that social research should be both integrated and in harmony with the real world. This does not mean a complete separation of research theory from the framework of marketing research, but rather to use what is suitable to the current research environment.

In traditional systems, circumstances and conditions restrict the market opportunities of participants and prices are no longer reliable as indicators of marketing conditions. The E-B-P represents a broader framework as it takes into account both price and non-price indicators in the assessment of performance, and so is liable to provide a more helpful evaluation of market conditions than price in isolation. Local conditions and information resources therefore require an adoption of this approach.

The study aimed to investigate the influence of the social and cultural environment on livestock marketing in the Badia with the focus on the following issues: present livestock marketing conditions, sales of livestock from Bedu households, and the importance of household needs for cash in relation to sale of animals. Attention in

this study is focused on the following: characteristics of the existing marketing facilities, the different types of market participants, producers' behaviour in relation to marketing alternatives, access to market information, social and economic relations, marketing arrangements, and present environmental conditions, especially the effects of disease and the condition of the rangelands.

When differences exist between farmers in terms of flock composition, when information is not available to producers when transactions take place, when the present marketing infrastructure is not serving the marketing system, and when the institutions governing livestock policy area absent, then the majority of marketing decisions are made on the basis of price and non-price considerations rather than price alone.

Since the focus of this study is on livestock marketing and farmers' decision making in relation to marketing issues in terms of family cash and income strategies in different groups of households, the whole farm perspective is taken into consideration here. This means consideration of environmental, biological, cultural and economic factors. An analysis of constraints should include a consideration of these interrelationships to produce a useful understanding of the system. Due to the environmental conditions found in the Badia, the study focused on the following areas:

1. Household characteristics

The household as a whole is an important element in the analysis, and attention should centre upon its characteristics, such as its pattern of production and consumption and

the size of the household as a unit of production. Family members have well defined rights and obligations towards the household economy, and outside these limits, cash transactions between family members are common. In Bedu farming, there is an inter-dependent relationship, since both resources and members are under household management. Labour capacity is an important factor in household production and does, to some extent, influence decisions concerning the number and type of animal species a household can actually hold and manage at a particular time. In order to evaluate household labour as a major input for Bedu production, an analysis of the household's demographic characteristics such as labour capacity, the age structure and age distribution of household members, is required. This information is fundamental in determining a household's capacity to generate additional income. Income source(s) of a household can affect the timing and place of sale. Some household members have other income from army salaries, crop production, hiring out labour and pensions. Because of the large size of a household and the integration between family members, Bedu tend to pool these different incomes. The study has found that the herding of animals causes some constraints on Bedu in that they may have to make a choice between settling in order to send their children to school or remaining mobile. Furthermore, a lack of labour might cause some families to reduce their flock size in order to maintain its management, and so the early sale of lambs before weaning is largely a result of labour shortage within the Bedu household. Moreover, my field work shows that a large household is capable of allocating labour thus reducing the cost of production. This study also brings to light the variety of reasons why families need cash. In addition to the purchase of animal feed and shepherding, households spend money on food, services, transport, rent, emergency and ceremonial

expenditure. Household characteristics elsewhere similar to the Badia environment remain valid and could provide insight and explanation of household marketing decisions.

2. Price and its nature

Applying a restricted model in traditional livestock production requires information on prices, albeit this can be difficult due to the complexity of the livestock business. Prices for livestock are reached through bargaining, and animals are sold either as a group, a mixed group, or individually. Animals are generally sold per head, and it is rare to find sellers who prefer sale by weight. In this study it is found that the majority of households make their sale per head basis where the sale per weight is, in principle, available as well. However, for different reasons either to do with the market structure or farmers' beliefs and attitudes, sale on weight basis has been ruled out. Collecting information on livestock prices is difficult as traders are often wary of discussions on this topic. Another problem is finding an appropriate standard on which to base prices. Analysis of the farm level is thus required to identify several key factors that contribute to a fuller understanding of the livestock system. In areas where farmers' marketing options are restricted by their low capital basis and inadequate marketing infrastructure, prices at the farm level are likely to be influenced by the nature of sale arrangements between farmers and wealthier, more mobile traders. For example, this study also shows that when demand for animals is low, small scale producers are forced to sell their livestock on credit to traders which usually results in different prices. The common feature of the credit system is that farmers extend credit to traders to facilitate transactions and to have higher prices.

Furthermore, other types of credit which extend from traders to farmers are found to exist, but have hidden implications. Moreover, society which is in transitional, relations between its members are likely to be tied to customs and tradition. This study shows that market arrangements are regulated according to traditional customs and Bedu regulation systems. One of the basic tenets of the Bedu market transaction, I should mention, is trust which is given serious value. However, the misuse by some traders and the deficiency in the financial laws in the country have resulted in a failure of trust between market participants as some traders do not fulfil their contractual obligations. In this connection, this study has shown that the market performance in areas similar to the Badia cannot be studied in isolation from the wider context. Therefore, understanding the nature of price formation at such initial levels is likely to provide additional insights into the operation and hence the marketing performance.

3. National policies and other environmental factors

Generally, Bedu have to cope with a wide range of constraints which can be categorised as natural, changes in the feed subsidy policy, animal disease, labour allocation, and constraints arising from household characteristics. Moreover, if the existing system is to be fully understood, then consideration has to be given to government policies which are capable of having positive or negative effects on livestock production and marketing. Policies concerning land tenure, rangelands, feed subsidies, infrastructure and disease control require careful examination. For example, the absence of a clear government policy toward livestock production and marketing in the Badia is untenable when the livestock system is under transformation. The Bedu have been brought in the mainstream of change by indirect

forces beyond their control, and into situations where their traditional pastoral strategies may become less efficient. The unstable policies toward rangelands and the removal of the feed subsidy have harmed and left them in confusion.

Farmers' marketing decisions can be affected by environmental factors, described as physical and social factors affecting livestock production, welfare, and the integration between production and marketing decisions. The role of livestock production under a traditional system is not a profit maximising strategy, but is more concerned with long term security and risk avoidance. Furthermore, livestock production often remains the only option for a pastoral society, due to the absence of investment alternatives that suit the Bedu attitude. Consequently, family labour is the most important input in livestock raising, compared to the high cost of other inputs such as animal feed.

Ilbery (1986) suggests that social factors such as a farmer's values and norms influence the decision making process, resulting in different behavioural responses from time to time and area to area. It is also argued that the influence of cultural values and religious ethics upon the decision making process will in turn influence the formulation and design of the information system into providing the right information. The research findings suggest that cultural beliefs draw households to livestock production, as domestic animals are regarded as giving a family nobility and prestige. Furthermore, in Bedu society, transactions between market participants and contractual obligations are governed and controlled by a system of tradition, personal ethics, reputation, tribal links and social standards, developed over decades. Trust is

one of the main factors in such transactions, largely because animals offered for sale are visually examined and sales are based on verbal agreement. Thus trust is fundamental to sale on credit, especially when credit is extended from farmers to traders.

4) Market Structure

The analysis of marketing channels verifies that farmers have many alternatives for selling their animals. However, in reality only two marketing channels are dominant in the Badia, middlemen and exporters respectively. The significance of this mobile trade is seen in the absence of transport cost of selling in outlet markets. Producers who sell in outlet markets usually do so because of a financial crisis. The study also found that the Jordanian market is largely influenced by the export trade. For example, the Saudi market has the greatest impact on the Jordanian market.

The study also found that the market structure suffers from the presence of bankrupt traders which led to the loss of faith in the finance systems. Due to the credit system which starts in the farm gate when the farmer extends credit to the trader and ends in the Saudi market, the risk of bankruptcy becomes higher. All of these factors have resulted in the traders' lack of creditability and trust, and this in turn has affected the marketing arrangements and has become a new pressure facing the trade organisation in the Badia.

The study reveals that the marketing system as a whole lacks standard systems, trust, formal regulation and outlet market infrastructure. It is evident that despite the

farmers' efforts to take advantage of market opportunities and sell at the right time and the right place, the majority of Bedu farmers in fact sell as a response to environmental constraints. Thus there are valid links between the marketing behaviour of farmers and the socio-economic conditions surrounding their production in the Badia.

8.5 Conclusion

The methodological approach adopted in this present study is largely based on the E-B-P model. It focuses on both price and local environmental aspects. This has provided a better understanding of the operation of the livestock market which is still functioning under a traditional system.

Regarding farmers' marketing behaviour, this study reveals that marketing decisions are related to a household's demand for cash, and environmental factors such as the high cost of production, disease, unstable government policy, household characteristics, and labour capacity. They sell for several reasons, the most important being to generate cash to buy feed or to reduce costs and eliminate the risk of disease.

The study shows that the marketing system as a whole suffers from the lack of a standard system, standard grades, trust, formal regulations, outlet market facilities, and a relatively small numbers of exporters. Traders have better and quicker access to market information than the farmers with whom they trade, and so are able to bargain on the basis of current market conditions. The private credit system, though appearing to be more unfavourable to farmers than any other category, remains a reliable source

of capital for the production of livestock. The low price for some animals seems to reflect the importance of other factors in explaining the sale behaviour of households.

Despite the afore-mentioned factors, the marketing system as a whole can be considered a stable one. The system is capable of responding to changes in supply and demand patterns and has adapted to the use of modern transportation and labour opportunities. Furthermore, the system shows low-cost of trade and low and narrow trade margins. An assessment of the efficiency of a marketing system is normally based on the measurement of the extent of total marketing margins in final consumer prices. Even though it was not possible to collect such data in this study, an estimation of margin is calculated in Chapter 7. The results show that the mobile traders' profit is low, but there are indications that high differences exist between mobile traders and exporters or butchers. The system has not been tested against real export embargo, competition, and shortage of feed supply. Negative signs of the system have emerged following government decisions to withdraw the subsidy system and to ease policy on imports of animals in late 1996. During this period the market was over supplied by local and foreign animals and farmers either delayed their sale or disposed of their animals at low prices¹.

The research sought to examine the marketing system of livestock with the focus on livestock producers and their marketing behaviour. Given the broad characteristics of the production and marketing of livestock described, it is evident that the marketing

¹ Information on such issues was obtained from informal discussions with farmers (different to the ones interviewed in 1995) during a visit to the Badia in March, 1997. This information was confirmed by Alan Roe, a researcher in livestock production in the Badia, in October, 1997 during a meeting at Durham University.

system is likely to be influenced to a significant extent by local environmental constraints. Analysis of the performance of the system or any sector therefore needs to be done within the context of these constraints and the solutions evolved by the system to overcome them. Middlemen perform the different post-farm marketing functions in various ways that may not necessarily correspond with conventional standards. Being the dominant marketing group, they have been able to establish their own standard operating procedure that links the production and the marketing sectors. It is evident from the preceding assessment of livestock production and marketing among Bedu households that livestock are important to the welfare of these households. There is clearly a statistically significant relationship between household livestock marketing and certain household socio-economic characteristics at the time of sale. Livestock sales are especially useful in smoothing out cash flow, critical to the survival of many semi-subsistence livestock producers. There is evidence from this study that the more secure (wealthier) livestock producers market more of their animals when demand is at a seasonal peak. Given the characteristics of the production and the marketing systems outlined in Chapters 5 and 6 and the trading activities of market participants examined in Chapters 7, it is unlikely that the marketing system can be efficient in a competitive sense.

Chapter Nine

Conclusion and Recommendations

Despite the high competition in the red meat market in the Middle East and despite the traditional marketing methods and regulations that govern market arrangements among market participants, livestock marketing in the Badia has shown a stability conditioned by the stability of the market. There are strong indications that this is changing, and that farmers' marketing decisions are strongly associated with current production conditions in the Badia. The high cost of feed and the spread of disease are found to be the main reasons for early sales by households. With regard to farmers' behaviour in relation to the timing and place of sales, the study shows that they are clearly aware of the benefit of a late sale, but due to production circumstances and household characteristics, are not able to achieve this. This is made more significant if one takes into account the facts voiced in a number of other studies. Campbell and Roe (1995); Campbell, Jones, and Roe, (1995-96); Oakeley (1996b) and Blench, (1995) argue that the high cost of production and disease are most notable in the Badia livestock production. These findings are of crucial importance to economic and social development planning concerning Bedu welfare.

Livestock production in the Badia is strongly connected to the Gulf markets, where high demand is reflected in high prices. Moreover, the higher prices for *Baladi* red meat in the local and regional markets have allowed the continuation of the Bedu livestock production. However, all signs indicate the decline in demand for Jordanian animals in such markets. As indicated by Oakeley (1996 and 1997), this decline is due

to the change in consumer taste in the Gulf toward imported animals from Australia and Eastern Europe. Jordanian animal prices and weight cannot compete with these imported animals. While consumer loyalty has, to some extent, enabled local production to compete with imported animals, Oakeley (1997, p. 46) confirms that "under such a massive price difference, it is only a matter of time before consumer loyalty to *Baladi* meat disappears". The changes in consumer demand and government policy require this type of production to be competitive to cope with new international trade developments.

Ambiguous government policies toward rangelands and livestock production have harmed farmers and left them in confusion. For example, the removal of the feed subsidy, which was partly due to pressure from the IMF to reduce public spending and to protect rangelands from deterioration, together with government attempts to bring tribal lands under private title, in fact caused large areas of land to be removed from grazing because of the growing interest in using pastures as farms, despite the fact that this type of farming has proved to be both uneconomical and harmful to the environment, particularly water resources. Moreover, little has been done to compensate Badia producers for the loss of subsidy. Assigning one government body to deal with livestock development in all its aspects will eliminate contradictions in present government policy toward this sector. Furthermore, there needs to be field oriented rather than office oriented contact between farmers, traders and policy makers if the situation in both production and marketing in the Badia is to improve. Moreover, it is important that before government policy designs and implements extensive changes in the livestock sub-sector, the policy makers should be aware of

Bedu behaviour, which can appear irrational to an outsider, but is based on solid economic beliefs. Any policy should be stable and should give farmers more time and space to plan in response to government policy changes.

9.1 Market structure

The existence of outlet markets is strongly related to the population, and so livestock markets in Jordan are only found in cities. Their operations start early in the morning and last for three to four hours. The four main livestock outlet markets in Jordan which are of importance to Bedu producers are Mafraq, Ruwayshid, Irbid and Amman. Location sales are becoming the major marketing channel for livestock in the Badia. Outlet markets also serve as principal sales for live animals, but tend to attract principal buyers, mainly speculators, dominating the markets. Farmers clearly expressed the view that the outlet markets are lacking in many areas, the major shortcoming being that they do not reflect, in any way, the needs and expectations of the farmers. Farmers would clearly like more freedom of choice in the place of sale. This gives us insight into the importance of addressing farmers' needs if the marketing system is to be deemed appropriate for them. It is recommended therefore that the improvement in infrastructure of these outlet markets would encourage farmers to market more animals through these channels.

The analysis of the marketing channels verifies that farmers have many alternatives for selling their animals. However, in reality only two marketing channels are dominant in the Badia, middlemen and exporters respectively. The significance of this mobile trade is seen in the absence of transport costs of selling in outlet markets. Specialist

traders, therefore, fulfil this role in the marketing chain both more economically and more effectively (Oakeley, 1996a). Export traders maintain control over the export of animals to the Gulf market, providing mainly large scale producers with marketing choices. Export traders have maintained strong relationships with producers through their long existence in the trade industry. Tribal links shape the organisation of the trade, especially cross-border trade from Syria. The livestock market provides labour opportunities mainly for mobile Bedu traders who occupy an important position in livestock marketing. They buy animals directly from farmers who can then determine the price of their stock rather than being price takers.

There is an absence of formal channels for market information, which can lead to high transaction costs. Some small livestock holders may be affected by a lack of knowledge about the best time to sell or the lack of opportunity to sell at such times. This can put farmers at a disadvantage when bargaining with traders, as some farmers are tied to credit relations which might prevent them from achieving a reasonable market price. The preference for selling on location also makes the need for information through formal channels important. A programme which educates livestock suppliers about daily and weekly prices in outlet markets would enable them to plan their marketing in the short term. The media should play a leading role in updating farmers and traders about changing conditions in the markets. The role required from the media as far as livestock production and marketing is concerned, is to revive market information. Reporting on arable agriculture through the media is already practised in Jordan and this can easily be extended to cover general trends in

livestock marketing. This would give farmers more freedom in choosing where to sell and to whom.

9.2 Farmers and traders' behaviour

Bedu farmers differ in behaviour and the extent of marketing livestock. The main reason for sale is an emergency, such as the need for immediate cash during the festive season and the start of the school year. Access to credit would provide families with a further source of income especially during critical cash flow periods. With cash available they can increasingly rationalise their livestock operations and market them more effectively.

Differences in marketing strategies exist between small and large scale producers. The latter are able to receive higher prices for their animals and can benefit from sale on credit. Larger scale-farmers can generate a net-cash-revenue surplus, and so will meet with few cash-flow problems. Greater wealth opens possibilities of access to purchased livestock input including veterinary drugs and water. In contrast, current levels of annual cash income of small flock-owners are very low and often insufficient to cover their main cash expenditure requirements. In this situation, these households are incapable of adopting new production technologies to any significant extent. The size of a flock in a household has been governed by the mobility of the labour force and the choice over the schooling issue. Small scale producers see mobility as profitable management, but are prevented from doing so for reasons of lack of cash, transport, labour, the small flock size, and the schooling issue. Due to the widespread distribution of small livestock holders, a greater number of farmers and more low

income households would benefit if the importance of livestock development policy is stressed to small livestock holders. Given the basic need to address food and income security among the Badia inhabitants, emphasis on small livestock producers seems appropriate, since they play an important role in the household.

Large-scale farmers extend credit to exporters and traders. These market arrangements are carried out on traditional contracts. Some farmers extend credit to traders to ensure the sale can take place, and so trust and good faith are vital to such transactions, although some negative signs concerning this type of arrangement are already appearing.

The Badia farmers suffer from a lack of finance from government institutions and banks, and so a new type of livestock trade has emerged. Some arrangements for borrowing money takes the shape of animal exchange. Animals are usually sold by those wealthy traders for double their relative price in the market, based on a fixed date of repayment. People who buy at such prices and under such circumstances usually sell the animals at current prices to raise cash. This has replaced attention to private money lenders, who are mainly traders and wealthy farmers.

9.3 Price relationship

Prices for livestock are reached through bargaining between seller(s) and buyer(s). Animals can be sold either as a group or individually, or sometimes in mixed groups; in most cases, prices are determined on the same basis. Buyers value the animal for the immediate return of meat production, and manually check the quantity and quality

of meat that each animal will yield. Traders also value the condition and health of the animal.

Price was found to be strongly correlated with age, information, payment, place, reasons for sale and type of animals sold, whereas date of sale, place of sale and type of buyer show no significant correlation with price.

The sale of high number of animals is believed to favour the exporter. Exporters have developed strong relationships with customs officials and government bureaucracy in the export trade is visible (Oakeley, 1996a).

9.4 Summary

The availability of financial resources, access to market information and the intensity of use of veterinary clinics and drugs, the introduction of regulations to keep rangelands free from plastic waste, are considered to be the most important factors according to which the development level of Bedu farm households can be differentiated. These factors are closely related, so that their interplay determines the direction in which pastoral households will develop. Development of livestock production obliges planners to approach this issue in a more widely-integrated manner, since livestock are found in nomadic and semi-nomadic hands. Livestock production is very complex and has many operations, such as breeding, raising, feeding and marketing young animals, which are all carried out on one farm. Moreover, livestock production location depends on the availability of production resources such as pastures, rangelands, feed and farm labour in the area. Livestock

are found in nomadic and semi-nomadic hands. It is evident that livestock production and marketing are major contributors to national income, including foreign exchange earnings, and play an important role in the lives of most Bedu and the welfare of these households.

There is clearly a statistically significant relationship between farm household livestock marketing and certain household socio-economic characteristics at the time of sale. Livestock sales, especially for small holders, are useful in smoothing out cash liquidity. This extends the market decision making process beyond just the monetary profitability of the livestock enterprise. Thus, one of the basic implications of the motives behind much livestock marketing in this area is that livestock development programmes should give full consideration to the integration of household activities and the role which livestock plays in the survival strategy of households. In addition to their economic importance, livestock production in the Badia still provides for social functions. The increase and the continuity of livestock farming in the Badia is connected to the lack of other economic alternatives. Despite its low productivity, Bedu consider livestock production a secure economic source for their families' survival. The association between household size and the number of animals was found to be positively related.

Although Bedu farmers try to take advantage of market opportunities and sell at the right time and the right place, the majority actually sell as a response to environmental constraints. The use of the Environmental-Behaviour-Performance (E-B-P) approach

in the study has established valid links between the marketing behaviour of farmers and the socio-economic condition surrounding their production.

9.5 Further research needs

This study has contributed to a better understanding of the livestock marketing system in the Badia of Jordan, in a way that will be useful comparative ground for livestock production in the Badia. As this can only highlight one issue pertaining to the Bedu production system, more research areas still need to be investigated. For example, there is a need for a better understanding of consumer behaviour and taste toward local red meat. Furthermore, there is a need for a greater understanding of the role of government institutions toward this system and for finding answers to explain why the agricultural policy lacks stability. There is a lack of co-operation among different institutions responsible for planning and implementing policy in the Badia. Research on intensive farming and how the Bedu's attitude would be toward such an approach is required.

The Jordanian government has been trying to increase the role of the private sector, to promote privatisation. Negative social effects of economic liberalisation are expected to have some effect on this livestock sub-sector, although there is little information on how the future of this sub-sector would be and therefore research into this area is clearly needed.

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Appendix 1: Number of households per village within the study area

	Village	Total Household	Number of sheep
1	Abu al-Farth	28	3145
2	al-Bishriyya	40	3375
3	al-Manara	46	6334
4	al-Mukayfita	74	10788
5	al-Munaysa	15	2358
6	ar-Rifa'iyat	29	2704
7	as-Sa'ada	2	955
8	ath-Thilaj	6	871
9	Dayr al-Qinn	18	3668
10	Dayr-al-Kahf	50	8810
11	Hulaywat al-Masariha	64	27759
12	Jubayia	40	3333
13	Mathnat Rajil	9	2091
14	Midwar al Qinn	22	2759
15	Nayifa	26	7669
16	Qasim	35	4139
17	Rahbat Rakad	11	4308
18	Safawi	178	42196
19	Tall ar-Rimah	14	2307
20	Umm al-Qutayn	158	9446
21	Umm Husayn	40	4580
22		922	155,225

Source: Directorate of Statistics, Amman, 1991.

Appendix 2: Sample distribution of households by village

	Village	Frequency	Per cent
1	Abu al-Farth	5	2.5
2	al-Bishriyya	9	4.5
3	al-Hashimyya	4	2
4	al-Jad'a	2	1
5	al-Manara	10	5
6	al-Mansoura	1	.5
7	al-Meraquab	2	1
8	al-Mukayfita	13	6.5
9	al-Munaysa	2	1
10	ar-Rifa'iyat	7	3.5
11	as-Sa'ada	14	7
12	as-salehia	1	.5
13	ath-Thilaj	4	2
14	Dayr-al-Kahf	11	5.5
15	Dayr al-Qinn	1	.5
16	Hamra al-Suhiam	8	4
17	Hulaywat al-Masariha	10	5
18	Jubayia	14	7
19	Mathnat Rajil	2	1
20	Midwar al Qinn	5	2.5
21	Nayifa	17	8.5
22	Qasim	5	2.5
23	Rahbat Rakad	6	3
24	Safawi	17	8.5
25	Tall ar-Rimah	4	2
26	Umm al-Qutayn	25	12.5
27	Umm Husayn	1	.5
Total		200	100

Source: Field work, 1995

Appendix 3: Farmers' questionnaires

Section A Interview Details

1. Village name:

--	--

2. Date of Interview:

/ /1995	
---------	--

3. Head of the household's name:

--	--

4. Respondent's Name and Relation to the head of the household:

--	--	--

5. Main occupation of the head of the household:

1. Farmer	2. Trader	
3. Shepherd	4. Driver	
5. Agricultural labourer	6. Shopkeeper	
7. Civil servant	8. Other	

6. Minor occupation of the head of the household:

1. Farmer	2. Trader	
3. Shepherd	4. Driver	
5. Agricultural labourer	6. Shopkeeper	
7. Civil servant	8. Other (specify)	

7. Land Area owned by the head of the household:

--	--

8. Location of flocks now, place distance from village:

1. Within village	2. Within 1-10 km of village	
3. Within 11-20 km	4. 21-40 km	
5. 41-80 km	6. 81-160 km	
7. Over 161 km.	8. Nomad	

Section B Livestock-background information

9. How many sheep do you look after?

--	--

10. Are you the sole owner?

1. Yes	2. No		
--------	-------	--	--

If (yes) go to question #14

11. How many animals do you own?

--	--

12. How many sheep have other owners?

--	--	--

13. Who is your partner?

Partner	Relation to head of the household	Number of animals	Payment	Management decisions	
1					
2					
3					

14. Which breed of sheep do you have?

1. Baladi	2. Nijdi	
3. Cross Bred	4. Kuio & foreign	

Section C Livestock production

15. When did your flocks begin to lamb?

1. October	2. November	
3. December	4. January	
5. February	6. March	

16. How many ewes lambbed?

--	--

17. How many lambs were born?

--	--	--

18. How many lambs did you lose (died) in the main season this year?

--	--

19. At what age do you wean lambs?

1. Less than 2 months	2. 2-3 Months	
3. More than 3 months	4. Other	

20. What factors affect your decision to wean?

--	--

Section D selling and buying of animals:

21. On what basis do you sell your livestock and why?

Type/Reason	price	No choice	Lack of trust	Habit	Quicker	Other (specify)	
1. Per head							
2. by weight							

22. Did you gather prices information before the last sale ?

1. Yes	2. No	
--------	-------	--

if (no) please go to question # 25

23. When did you gather information?

1. 2 days before	2. 3-7 days before	
3. More than 7 days before	4. Other (specify)	

24. Where did you gather information about current prices from:

1. Farmers	2. Traders	
3. Formal markets	4. Farmers & traders	
5. Other (specify)		

25. If you compare the prices obtained for livestock this year with last year prices, is this year?

1. same	2. better	3. worse	
---------	-----------	----------	--

if the (same) go question # 27

26. What factors do think account for this?

1. high rainfall	2. low rainfall	
3. high exports	4. low exports	
5. high imports	6. low imports	
7. other(s) specify		

27. When do you prefer to sell?

1. Early summer	2. Later winter	
3. Later summer	4. Early spring	
5. Early winter	6. Later spring	

28. Where do you prefer to sell?

1. Amman	2. At your village	
3. Mafrag	4. Flocks locations	
5. Other cities	6. Other (specify)	

29. Do you sell on credit?

1. yes	2. no	
--------	-------	--

if (no) go to question # 36

30. How do you decide which person you want to sell to, if sale is not in cash?

1. Price	2. Known personally	
3. Others guarantee him	4. Has good reputation	
5. Other		

31. How many buyers in search of livestock passed through this area in the month previous to your date of sale?

--	--	--

32. What prices were offered before you decided to sell your animals?

--	--	--	--

33. Why didn't you sell at any of these prices?

1. Price wasn't good enough	2. Because cash was not available	
3. You sell on credit but you didn't know him	5. other (specify)	
4. He was going to buy some of the animals		

Section E Members of the household main activities

36. Number of people in the Household over 15 years old:

--	--	--	--

37. Number of people in the Household less than 15 years old:

--	--	--

38. Main occupation of household members over 15 years:

Relation to head of the household	Occupation	Place	Frequency of payment	Level of payment	

Section F Income sources

39. What percentage of household income comes from the following sources:

Source of income	Percentage %	Order		
Government services				
Salary or pension				
Private sector				
Rents				
Remittance				
Livestock production				
Livestock Trading				
Crop sales				
Other				

Comments:

Section D selling of animals:

34. Sale of livestock since November last year?

Sale	Type of animals	Age/mont	number	date	place	Reasons	form of payment	transport costs	other cost	buyer

Appendix 4

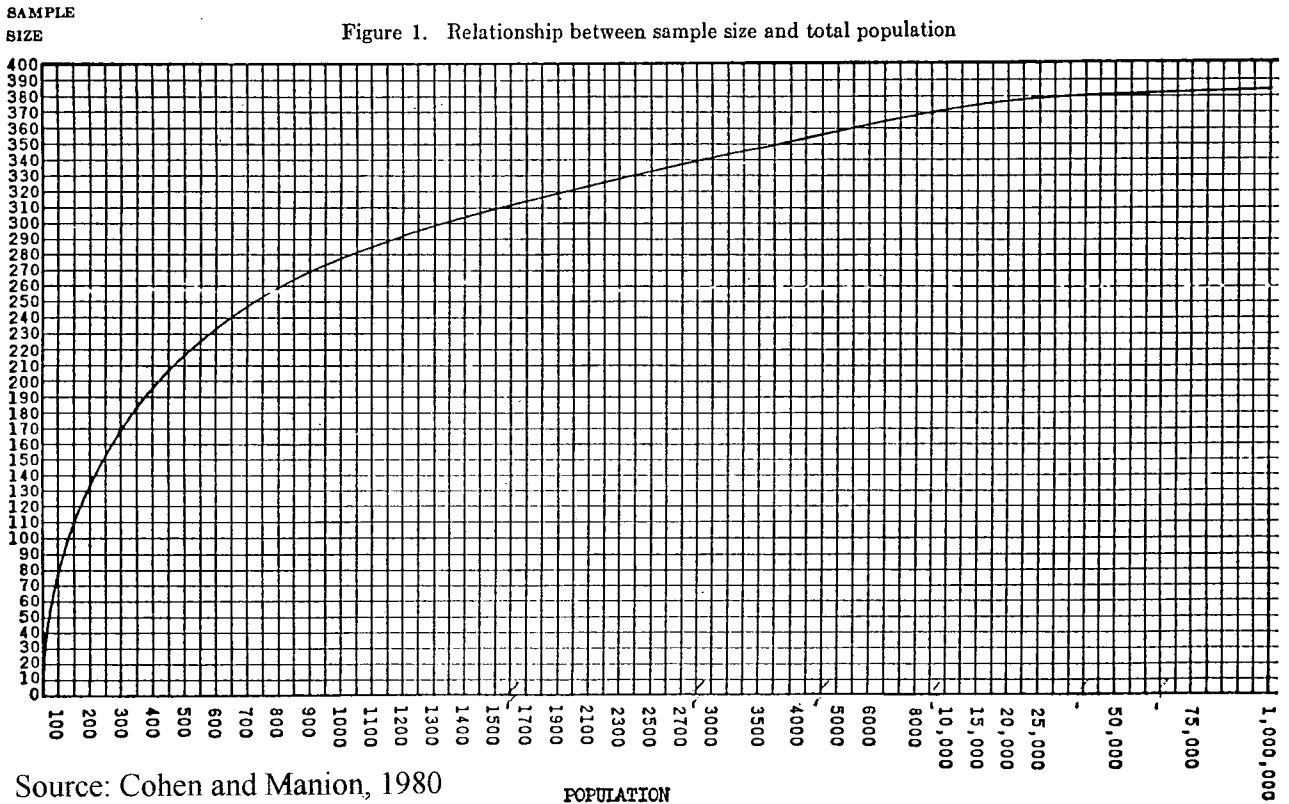
TABLE 1
Table for Determining Sample Size from a Given Population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—N is population size.
S is sample size.



Figure 1. Relationship between sample size and total population



Source: Cohen and Manion, 1980