

مركز التسويق الزراعي

PN ARX-976
91356



DRAFT

HIGH VALUE
HORTICULTURE
plc

Colne House, Highbridge Estate
Oxford Road, Uxbridge UB8 1UL, UK
Tel 0895 272911 Fax 0895 270049
Telex 919084 Euro G

OPPORTUNITIES FOR CUTFLOWER EXPORTS FROM THE HASHEMITE KINGDOM OF JORDAN

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Sigma 1 Corporation
Raleigh-Durham N.C.

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Prepared by:
High Value Horticulture
Colne House
Uxbridge
UB8 1UL
United Kingdom

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EXECUTIVE SUMMARY

Since 1985, cutflower production in Jordan has increased rapidly. The local market is well supplied throughout the year with a range of varieties. Some growers have started exporting to countries in the region, predominantly Saudi Arabia and United Arab Emirates. This study assesses the potential for further expansion of exports. The main market considered is Western Europe, the biggest flower market in the world. Opportunities in East Europe and the Middle East are also appraised. This study assessed Jordan's competitive advantage, reviewed market prospects recommended flower types that would be suitable for production and export and suggested a strategy for helping Jordan realise its potential.

In February and March 1994, when the field work for the report was undertaken, it was estimated that there were about 44 commercial producers, growing about 85 ha of cutflowers, of which about 40 ha were grown in greenhouses. The main flower crop was standard carnations. In general, the quality and yields were not of export quality. The poor quality and low yields resulted from inadequate technical knowledge and experience. However, some growers were producing good quality flowers, which proves that the climate is conducive to export quality production. In 1993, Jordan exported almost 140 tonne of cutflowers (about 3 to 3.5 million stems) with an estimated value of JD 382,000.

Jordan's international competitiveness

There are four main issues that affect Jordan's international competitiveness. These are climate, freight and other costs of production, import duty on cutflowers entering Europe and technical expertise.

a) **Climate.** The temperatures in the Jordanian winter are sufficiently mild for a range of temperate cutflowers to grow well in greenhouses. The quality and yields of some of the cutflower crops confirms this. The main disadvantage for commercial production for exports will be that as the temperatures rise in April and May, flower quality will decline. This will shorten the production season for exports, which puts Jordan at a disadvantage compared with producers near the equator who can produce all the year round, attain higher yields, and therefore spread their overheads over a larger crop. In an attempt to lengthen the production season, it is suggested that cutflower export projects should be located in the Amman region, where the spring temperatures are cooler than the Jordan Valley. It is also suggested that the greenhouse design is modified to help keep the crop cooler in the spring.

The disadvantage of the short production season is partly offset by having a reasonably strong regional export market. Therefore by exporting to the Middle East in the summer, it will give Jordanian growers a longer export season.

b) *Freight.* Air freight is the major cost associated with the export production of cutflowers. It can represent 20% or more of the gross selling price. The current air freight charge for cutflowers from Jordan is JD 0.55/kg (US\$ 0.78/kg). Compared with most other countries exporting by air to Europe, this is low. If perishable exports increase significantly, airfreight rates may rise. However, it is unlikely increase much beyond JD 0.60/kg (US\$ 0.85/kg).

Jordan imports more air freight cargo than it exports, indicating that there is spare capacity for exports. There are almost 40 scheduled passenger flights per week and a regular cargo service to Europe. The destinations of the flights include Holland, UK, France and Germany, which gives direct access all the major European flower markets. Freight capacity is not likely to be a constraint for flower exports.

Air freight connections to East Europe too erratic and too infrequent to facilitate serious, regular, exports to East Europe.

Other costs of production in Jordan are similar to many of its potential competitors. The quality of most of the inputs, such as packaging, are, in general, good. However, it was noted that the design and dimensions of the flower box currently used in Jordan is inappropriate for exports. The size needs to be modified to increase the weight that can be stacked on an airline pallet. The lid should be the same depth as the box, which will make the carton stronger.

c) *Import duties into the EC.* When exporting to the EC, cutflowers from Jordan are subject to an import duty of 15 or 20%, depending on the time of year. Under an arrangement called the Mediterranean Agreement, Jordan has a duty free quota of 54.5 tonnes of flowers. Because currently it exports less than 54.5 tonnes of cutflowers, cutflowers could be imported duty free. However, the quota is only the equivalent of about 1.5 million stems, or the produce of an hectare of carnations. Under the Mediterranean Agreement, Israel has a quota of about 19,000 tonnes, which represents about 80% of their exports to Europe. This gives Israel an effective average import duty of about 3 to 4%! Nearly all the main cutflower exporting countries do not pay a duty when importing into the EC. When cutflower exports from Jordan start to increase, this import duty will be a significant competitive disadvantage.

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d) *Technical expertise.* If Jordan is to realise its potential for cutflower exports, it needs help with technical knowledge and expertise. It needs this to improve the post-harvest handling of the flowers. There is virtually no on-farm cold stores, there are very few appropriate packing and grading sheds and there is very little use preservatives. If the post-harvest practices were improved, this would also improve the quality of flowers for sale on the local and regional markets. Potential exporters would also benefit from appropriate advice on varietal selection, plant densities, fertiliser and agrochemical usage and other agronomic inputs.

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In addition to agronomic and post-harvest advice, potential exporters would also benefit from help with marketing their produce.

Marketing

The European market for cutflowers is still increasing despite the recession. Flower production in Europe is declining. This creates the opportunity for the expansion of imports. Over the next five years, it is projected that flower imports will increase, on average, 7 to 8% per year. This increase has a value of about US\$ 40 million per year. Jordan only has the competitiveness to take a small share of this.

There are a number of channels Jordanian exporters could use for marketing their flowers. The three main ones are to sell on the Dutch flower auctions, to appoint agents to market the flowers in Europe or to use wholesalers in different European countries. All these channels have their strengths and weaknesses and the costs associated with them can vary enormously.

Holland is the most important country in Europe for marketing cutflowers. Most of the flowers it imports are re-exported. It is strongly recommended that Jordanian exporters try to grow flower types which can be sold direct to the target markets outside of Holland. This is because marketing costs are less and higher selling prices can be achieved.

Agronomic recommendations.

Jordan can grow a range of export quality flowers. However, it is recommended that the first phase of exports to Europe concentrates on only three flower types (1) standard carnations, (2) gypsophila and (3) roses. These crops can be grown well and produce good quality in Jordan. These crops would be grown in the Jordanian winter. In addition the market for these flower types is sufficiently large that importers will buy them as a single item. This gives much more flexibility for choosing marketing channels and target markets. ✓

It is also recommended that export production focuses on the Amman area rather than in the Jordan Valley. This has the advantage that it has a longer season for export production and it is near to the airport. Once significant exports to Europe have been established, it should be possible to introduce other flower types and use other locations.

If a grower wants to target the European export market, it will be necessary to plan production primarily for the winter season. It is recommended that multi-span greenhouses are used. These greenhouses should be high with good ventilation which will help keep them cool in the spring and early summer. It will be necessary to invest in emergency heating systems to ensure that greenhouse temperatures do not fall too low on the coldest nights.

d

It is important that growers have access to a reliable and quick soil analysis service. This service is necessary to ensure that the correct fertiliser rates are applied.

Financial analysis

Gross margin projections were made for the three recommended flower types. Where possible, a provision for capital costs was included in the gross margin projections. The margins varied from JD 40,000 to 100,000 per ha. These projections showed the importance of the regional market to the profitability, especially the carnations. If the costs of some of the inputs are increased by 10% or the selling price is decreased by 10%, the recommended flower types still produced acceptable gross margins.

It is estimated that the cost of establishing standard carnations for export would be about JD 150,000/ha, while roses would cost about JD 200,000/ha. Taking into account some of the other essential capital costs, it was estimated that it would cost about JD 500,000 to develop 4 ha of carnations and JD 800,000 for the same area of roses. It is estimated that the pay back time for such an investment in carnations would be three years and just over two years for roses.

Projections for the target level of exports were made. The demand of the European market for imported cutflowers is very large and will not constrain Jordanian production. The main constraint to exports are the number of farmers who have the resources to invest and the skills and expertise required to produce the necessary quality. It is projected that a sensible target for the value Jordanian exports of cutflowers should about JD 2 to 3 million in the 1996/97 season rising to JD 10 to 20 million by the end of the century.

Strategy for the development of cutflowers

Exports of cutflowers should initially be concentrated on a limited number of growers, who focus on a few flower types which can be marketed to European countries other than Holland.

It is important to concentrate on the larger growers who have the financial and management resources to develop exports. It is not recommended that small-farmers be encouraged to develop exports. They do not have the resources to invest in multi-span greenhouses and to build cold stores. In addition, small-growers will not have the size to be a significant presence on the market. Small-growers may be able to participate in exports after the larger producers have got the industry established.

It is recommended that these limited number of growers focus on growing only flower types which importers will buy as a single item. After exports of these crops have been established, then it will be possible to develop other flowers and market them with the original recommended types.

E

To optimise the returns to the grower, it is important to have a carefully targeted marketing strategy.

To help develop cutflower exports, it is recommended that an aid agency considers giving a limited number of growers technical assistance. It is suggested that the maximum number of growers that are helped in the initial stages be restricted to four. These growers should accept that their main target is to grow for export and not regard exporting as a method of marketing surplus production. This technical assistance would be focused on post-harvest techniques, improved agronomic management and help with marketing. As the production skills of the initial group of growers increase, the knowledge will percolate through to other growers. It is also recommended that a production manual is produced for the main flower types which would benefit all growers.

Effort should be made to increase the size of the quota of cutflowers Jordan can import in to the EC duty free. The Mediterranean Agreement is due to be renegotiated before November 1995, it is imperative that Jordan gets a much increased duty free quota.

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APPENDICES

ABBREVIATIONS

ACP	-	Africa, Caribbean and Pacific
AMO	-	Agricultural Market Organisaton
AMDP	-	Agricultural Marketing Development Project
EC	-	European Community
FOB	-	Free on Board
IATA	-	International Air Tramsport Association
JD	-	Jordanian dinar
KLM	-	Royal Dutch Airline
RJA	-	Royal Jordanian Airlines
UAE	-	United Arab Emirates
UK	-	United Kingdom
US	-	United States
ha	-	hectare
km	-	kilometre
kg	-	kilogram

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

In 1985, the Government of Jordan banned the imports of cutflowers as part of its efforts to conserve foreign exchange. This move rapidly stimulated local production of cutflowers. In fact, Jordan is now self sufficient and at certain times of the year the local cutflower market is over supplied. As a consequence, some of the growers have been exporting cutflowers to countries in the Gulf and region. There is now considerable interest in developing exports beyond these regional markets into Europe. Thus, the prime objective of this study is to assess the opportunities for cutflower exports to Europe. Opportunities for other markets will also be reviewed.

The Agricultural Marketing Development Project (AMDP), working within the Agricultural Marketing Organisation (AMO), has successfully helped to expand the export of fruit and vegetables. Recently, they have been approached by some growers asking for help to develop floricultural exports. As a preliminary step, this study on the potential for cutflower exports was commissioned. The Scope of Work for the study is shown in Appendix 1.1.

As the local market is now well supplied with cutflowers and the potential for the regional market is being realised, the main focus of this study was to assess the opportunities in Europe. However, the potential for exports to Eastern Europe and the regional market was also fully considered.

1.2 Objectives of the study

The objectives of the study can be defined as:

- a) to recommend the most suitable and profitable flower types for exporting to Europe from Jordan;
- b) to develop an appropriate strategy for the development of cutflower exports;
- c) to provide baseline data to enable prospective growers/investors to prepare an initial business plan for developing exports; and
- d) to make recommendations to help Jordan realise its potential for cutflower exports.

1.3 Approach to the study

This study was undertaken by Dr Andrew Sergeant (financial analyst and team leader) and Mr Ulf Feldt (floriculturalist). They spent two and a half weeks in Jordan gathering data, visiting existing and potential flower growers and exporters. They also met with freight forwarders, airline representatives and personnel from various Governmental ministries and departments. After the initial visit to Jordan both team members researched the major European market for imported cutflowers, Holland. Meetings were held with potential importers as well exporters to the Middle East.

1.4 Arrangement of the report

The second chapter describes the current production and exports of cutflowers and assesses the competitiveness of Jordan compared with its main competitors. This chapter also discusses the climate and soils, with specific reference to their suitability for cutflower production and details the airfreight cost and availability from Jordan.

Chapter Three discusses on the markets. The main market considered for expansion is Europe. However, the regional and East European markets are also described. This chapter also analyses the costs and suitability of the various marketing channels available to Jordanian exporters.

The fourth chapter describes the flower types recommended for export development. It also discusses the major inputs required to successfully produce high quality cutflowers. It focuses particularly on the technical improvements that should be adopted by the current growers to achieve quality and yields required to compete on the export market.

In Chapter Five, projected costs and revenues for each of the recommended flower types are presented. The financial analysis also includes the capital and production costs associated with establishing a cutflower unit. It gives the total investment required to establish a cutflower project and provides targets for the potential earnings from cutflower exports.

The final chapter develops a strategy for optimising cutflower exports and discusses the main issues that have to be addressed before Jordan's potential can be realised.

1.5 Exchange rates

Most of the financial data in this study are presented in the Jordanian currency, the dinar. The exchange rates used in the study were the average of the buying and selling rates for the Jordanian dinar (JD) on 9 February 1994, quoted by the Central Bank of Jordan; namely,

JD : United States dollar	0.71
JD : Dutch guilder	0.36
JD : Sterling pound	1.03

1.6 Acknowledgements

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In addition, the team is especially grateful to Dr Salem Al-Lozi, Director General of the Agricultural Marketing Organisation, and the staff of AMO and the AMDP. Finally, the support and encouragement of Mr Fakhri Nustus and Mr Raed Hattar enabled the team to complete their field work successfully, and enjoyably.

CHAPTER TWO

FACTORS AFFECTING JORDAN'S COMPETITIVENESS

2.1 Current production of cutflowers

Traditionally, there has been little production of cutflowers in Jordan. This situation changed with the banning of imports in 1985 which encouraged farmers to start growing cutflowers. Many of the current producers are growing primarily for marketing through their own retail outlets and selling the surplus on the local market. As they are growing for their own shops, the growers tend to grow a wide range of flower types rather than specialise. Recently, the domestic market has become oversupplied, especially in the summer, which has created a surplus for export. Currently, the main export market is in the Middle East.

Official data on current cutflower production in Jordan are very limited; therefore they have had to be estimated. There are currently about 44 commercial cutflower growers in Jordan, with a total production of about 85 ha, of which about 40 ha are grown in greenhouses. The average yields are low and quality is poor. This is due to a number of factors including inadequate technical knowledge, insufficient and/or inaccurate planning, diseased and/or inappropriate planting material and poor greenhouse designs. However, some of the growers are achieving reasonable yields and the quality of some of the flowers is very good. Before these better growers could become successful exporters to Europe, they need to achieve these yields and quality consistently.

The cutflower growing region is within a 30 km radius of Amman. There is also limited production in the Jordan Valley.

The main production season is in the summer. This partly because the local market demand is at its height in the summer and growers initially targeted their production accordingly. Also, the high summer temperatures stimulate production. However, these high temperatures also cause poor flower quality and shorten shelf life. The growers regard the summer as the main export season, although data presented in the next section will show that this is not entirely true.

In addition to marketing their cutflowers through their retail shops, producers can sell through a flower auction or the Flower Association's wholesale market. The flower auction is privately owned by the Soukhtian Group. It has an annual turnover of about JD 4.25 million. The auction system used is old fashioned, manual and slow.

The Flower Association is a co-operative which has a turnover in the region of JD 1 million. Neither of these outlets has any cold stores and spoilage is high, about 25%. With better cold stores and improved post-harvest handling, it should be possible to reduce these losses to about 1 to 2%.

To put Jordan's 85 ha cutflower production into perspective, it has about 40,000 to 50,000 ha of horticultural production. About 3,000 ha of this is under plastic greenhouses. The value of Jordan's horticultural exports, mainly to the regional market, is estimated to be about JD 100 to 120 million.

Greenhouses: The major type of greenhouse used for cutflower production is a locally manufactured tunnel construction. It consists of a galvanised steel framework covered with locally produced plastic sheeting. This design has no aeration vents, except opening the ends or lifting the sides. Neither of these methods is very effective and consequently the temperature and humidity control is unsatisfactory. The design of the tunnels only allows for 50% of the ground area to be productive. In addition, the tunnels are difficult for the workforce to operate in and there is a significant risk of mechanical damage to the flowers during harvest and transport to the grading shed.

A more appropriate design for the greenhouse is a multi-span construction with air vents in the roof. These are the most effective way to control aeration, and hence temperature and humidity. The net production area of a multi-span greenhouse is around 66%. One company in Jordan does manufacture a multi-span greenhouse, but unfortunately no roof vents are incorporated in the design. It would be relatively easy to modify the design to incorporate roof vents. Even though they are more expensive, if growers seriously want to enter the export market, it is recommended that they invest in multi-span greenhouses with suitable roof vents.

Another important advantage of multi-span greenhouses over tunnels is that it is relatively simple to collect rainwater. Given the high cost of irrigation water, this could help reduce the expense of irrigation.

Most of the greenhouses in Jordan are not equipped with emergency heating systems. A simple emergency heating system is essential for potential exporters to maintain quality in the winter.

Irrigation and fertilisation: Most growers are currently using a locally manufactured irrigation system of drip lines. Fertiliser is applied through the irrigation driplines. This locally produced system is inadequate for good quality production because the application rates

vary widely along the drip line. In addition, the rate of water application is much too high (12 litre/min when it should be about 3 to 4 litre/min), which causes runoff and wastes water. There are much better types of dripline which can be imported for about the same cost as the locally manufactured equipment.

If the application of irrigation water is variable, then the fertiliser applied with it will also be variable. Even with uniform irrigation, the current method of applying fertiliser, through a locally manufactured injection system, is totally inadequate. The current system consists of a closed cylinder, in which the fertiliser is mixed with water, connected to the irrigation system. When irrigation system is in use, the concentrated fertiliser solution is injected quickly into the irrigation water and relies on further irrigation to dilute it to levels accepted by the plant. There is no certainty that the fertiliser is spread uniformly in the crop and the highly concentrated fertiliser solution could damage the roots. There is need for improved fertiliser application systems.

Correct fertiliser application is made more difficult by the lack of a quick and accurate soil analysis service in Jordan. Without such a service, it is very easy to apply insufficient fertiliser, resulting in reduced yields, or apply too much fertiliser which will reduce quality and waste money. If growers wish to expand exports into Europe, it is recommended that they send soil samples to Europe for soil analysis. This could be arranged through their importers.

Planting material: Two problems associated with planting material are affecting crop production, ie poor quality plants and inappropriate varieties. Most of the planting material used for cutflower production in Jordan is originates from Holland. However, the plant quality received is often below that ordered. This is especially true with bulbs. There are a considerable number of unscrupulous exporters in Europe who send their reject quality planting stock to growers in developing countries. To compound this quality problem, the exporters often overcharge importers and sometimes an import duty is levied when the plants arrive in Jordan. This means growers are paying too much for poor quality planting material. To try to reduce the expense of planting material, Jordanian growers are multiplying stock themselves. However, given the nursery facilities, this is significantly increasing the disease risks. It is therefore imperative to identify good and reliable sources of imported planting material which can be used by growers to establish export orientated cutflower crops.

The second problem facing the growers is what varieties to grow. Some of the farmers have been supplied with inappropriate varieties. The use of correct varieties would give improved quality and better yields. There have been no serious variety trials conducted in Jordan to generate recommendations. However, with independent advice, it should be possible to choose more appropriate varieties.

Post-harvest handling: In general, growers are unaware of the importance of good post-harvest handling procedures and cold storage. Packing and grading facilities are, in general, very poor while the use of flower preservatives is virtually non-existent. The need for improved post-harvest handling and cold storage is imperative if European export markets are to be seriously targeted. Improved storage, packing and grading will also enhance quality for the regional and local markets. One reason for the lack of cold storage, grading and packing facilities may be that a number of growers only rent their farms. They are, therefore, unwilling to make significant capital investments on rented sites.

Assortment and cutflower quality: A wide range of cutflowers are grown in Jordan. The dominant species grown is the standard carnation. Other flower types grown commercially are spray carnation, rose, gypsophila, gerbera, statice (*sinuatum* and *latifolium*), chrysanthemum, mathiola, snapdragon, tuberose, gladiolus, aster, customia (*lisianthus*), iris, lily, freesia and liatris.

The flower quality varied considerably between growers. However, standard carnations were, in general, very good. In addition, the quality, especially the intensity of colour, of gypsophila was also good. The only rose plantings seen were relatively newly planted, but their growth looked promising. Present production is too small to accurately assess potential yield and quality, but they appear to be promising. In contrast, the other flower types were not of export quality. This could be due to, among other things, being grown in the wrong climatic conditions, diseased or inappropriate planting material, or lack of technical knowledge.

2.2 Exports of cutflowers from Jordan

Jordan already has a small and expanding cutflower export sector. The export data collected are by weight and destination. There is no breakdown into flower type but carnations are reputedly the main flower type exported. Total cutflower exports increased from 84 tonnes in 1992 to 136 tonnes in 1993 (Table 2.1). It is estimated that the 1993 exports are the equivalent of about 3 to 3.5 million stems. Data in Table 2.1 shows that nearly all

the exports are to the regional market and exports to Europe are virtually non-existent. The main importing country, Saudi Arabia, has received over half the exports in each of the past two years. The next most important country for Jordanian exports is the United Arab Emirates (UAE) which took about 25% of the exports. Therefore over 75% of Jordanian cutflower exports are to two countries. This is potentially an unstable situation.

Table 2.1: Cutflower exports from Jordan (kg)

Country	1993	1992
Saudi Arabia	83,439	43,721
UAE	28,590	27,394
Bahrain	11,220	4,240
Qatar	6,258	4,750
Lebanon	3,040	1,350
Syria	600	
Oman	60	
Holland	1,310	
France	640	
Austria	500	920
Germany	495	1,200
UK	60	680
Switzerland		100
Canada		25
Total	136,212	84,380

Jordan exports cutflowers throughout the year are shown in Table 2.2. Traditionally, most of Jordan's cutflower production is in the summer. The summer has therefore been the time of excess production and is the main export season. This pattern appears to be changing. In the last three months of 1993 exports rose to the mid-summer levels and in January 1994, 17.5 tonnes of cutflowers were exported. This was the highest ever monthly total of exports from Jordan. It would appear that the traditional export season is changing to the winter months. This is probably because the market prices are higher in the winter and the more commercially aware growers are re-targeting their production to increase their profits.

Data on the value of exports are less accurate. The Central Bank states that the FOB (Free on Board) value of exports in 1992 was JD 157,000 and an estimated JD 382,000 in 1993. However, assuming that most of the exports are carnations, this gives an approximate average value per stem in 1993 of about JD 0.11 (US\$ 0.15). Data supplied by the Jordanian flower association give the estimated export price for carnations at about JD 0.16 per stem.

Table 2.2: Cutflower exports from Jordan by month (kg)

Month	1993	1992
January	5,035	2,978
February	4,825	1,320
March	5,044	5,206
April	11,710	6,268
May	16,008	10,200
June	11,362	10,168
July	16,760	8,690
August	10,900	6,215
September	12,370	7,880
October	12,370	10,770
November	14,810	8,585
December	16,648	6,100
Total	136,212	84,380

To put the scale of current cutflower exports into perspective, in 1993 they represent the equivalent of about 3 ha of well-grown cutflowers.

2.3 Climate, soil and water

a) Climate

There is a wide variation of climate in Jordan, from the arid highland climate to the almost subtropical climate in parts of the Jordan Valley. The limiting factors for cutflower production are availability and cost of irrigation water and the length of the season with reasonable temperatures, ie day temperatures below 30°C. Other factors affecting the prospects for cutflower production are distance to both the local market (Amman) and to the airport. At present the major production areas are the Amman region and the Jordan Valley. However, the cutflower production in the Jordan Valley is low, due to high summer temperatures. Future expansion in this area will require a "fan and pad" cooling system (ie a simple form of airconditioning).

The climate around Amman (Table 2.3) is good for temperate cutflower production between November and April. This growing season could be extended into May and October with good production and post-harvest handling facilities. The summer is too hot for producing high quality temperate cutflowers but, according to local information, the markets in the Middle East accept a lower cutflower quality than Western Europe. It should be mentioned that sunrise frosts occur regularly during December to February. Emergency heating systems should be installed in the greenhouses for safe export production. Heating systems may also be necessary for

maintaining a higher night temperature for certain crops such as roses and eustomia (lisianthus) to achieve appropriate export quality. In the Amman area high quality standard carnations are being produced, as well as good export quality gypsophila. Roses should do well in this area, but heating would probably be necessary to maintain good winter production and quality. It should be mentioned that stem length is very important for export pricing and that emergency heating for cutflowers would result in longer stems and hence better prices.

Table 2.3: Meteorological data for Amman Airport (altitude 766 metre)

Month	Mean temp °C	Mean max temp °C	Mean min temp °C	No days frost	Rainfall mm	Humidity %
Jan	8.0	12.4	3.5	2.6	63.6	70
Feb	9.1	13.9	4.2	1.6	63.1	67
March	11.7	17.4	6.1	0.8	44.0	60
April	15.9	22.5	9.3	--	15.7	50
May	20.5	27.7	13.3	--	3.7	39
June	23.6	30.8	16.4	--	--	37
July	25.1	31.9	18.2	--	--	40
Aug	25.4	32.4	18.3	--	--	43
Sept	23.4	30.7	16.3	--	0.4	47
Oct	20.3	27.1	13.6	--	6.5	47
Nov	14.8	20.5	9.3	0.2	29.4	56
Dec	9.8	14.4	5.1	1.3	48.8	68
Mean/ Total	17.3	23.5	11.1	6.5	275.2	52

The climate in the Jordan Rift Valley is warmer than around Amman (Table 2.4). The higher summer temperatures will shorten the effective production season to December-March. This is too short for viable export yields. Frost does not occur in the Valley and night temperatures in the winter are suitable for temperate cutflower production. A number of different cutflower crops are currently grown in the Jordan Valley for the local market. However, only a few have the potential for

export during the short December to March season. These would include lisianthus, gypsophila and gladiolus. Perennial crops, such as carnations, roses etc, will not tolerate the high summer temperatures. These crops cannot be grown successfully as annuals because the planting material is too expensive. It may be possible to grow a short season cutflower crop in the winter and a fruit or vegetable crop in the summer. This sort of rotation should perhaps be investigated further once the cutflower export industry has been established. Given the greater potential for exports from the Amman region, this report will focus mainly on this area.

Table 2.4: Meteorological data for Deir Alla, in the Jordan Valley (altitude 224 metre below sea level)

Month	Mean temp °C	Mean max temp °C	Mean min temp °C	No days frost	Rainfall mm	Humidity %
Jan	14.8	19.1	10.6	--	61.6	61
Feb	15.7	20.6	10.9	--	51.9	61
March	18.0	23.7	12.4	--	46.2	58
April	22.0	28.8	15.2	--	18.1	49
May	26.0	33.8	18.2	--	3.5	43
June	29.3	37.3	21.3	--	--	42
July	30.9	38.6	23.1	--	--	44
Aug	31.0	38.7	23.9	--	--	47
Sept	29.7	36.7	22.8	--	0.3	48
Oct	26.7	33.0	20.3	--	8.1	48
Nov	21.7	26.7	16.7	--	35.7	50
Dec	16.4	20.5	12.2	--	52.0	58
Mean/Total	23.5	29.8	17.3	--	277.4	51

It must be noted that Jordan has no ideal climate for temperate cutflower production. Many countries in Africa and South America have greater potential for all year round cutflower production, especially those at high altitude in the Equatorial region. Israel, with a similar climate to Jordan, has developed a significant and important cutflower export industry. However, its

importance on the European markets is declining due mainly to high production costs.

b) Soil

The soils on most of the cutflower farms visited were rather heavy clay, but with acceptable natural drainage. It is not common to install a soil drainage system in Jordan, mainly because of the installation cost and the shortage of irrigation water. A drainage system combined with more frequent irrigation would increase yields and improve quality. Little is known about soil preparation before planting in Jordan, but given the clay soils, care must be taken not to cause a soil pan by using rotavators.

c) Water

Most of the irrigation water in the Amman area is pumped from artesian wells, often 300-400 meter deep. Most cutflower growers buy irrigation water from neighbours who have a licence to operate a well. These licences are difficult to obtain. The normal cost for buying irrigation water from a licence holder is about JD 0.35-0.85 per cubic meter, which is expensive. The present high cost of irrigation water is probably why farmers are under-watering their crops. It may reduce costs, but quality and yields will also be reduced. If multi-span greenhouses are built, rainwater could be collected. A hectare of greenhouses could generate about 2,500 cubic meters of rain water, worth about JD 1.5 million.

Most of the soils and irrigation water on the flower farms in Jordan have a high pH, frequently around 8.0 to 8.5. This may lead to trace element deficiencies and difficulties with phosphorous uptake. To overcome these problems, most growers are applying imported compound fertilisers with added chelated trace elements. These are expensive, but essential, to achieve good productivity. It will be necessary to apply acid to the soils regularly to prevent the pH rising even higher. Application of an acid, such as phosphoric acid, through the irrigation dripline is also important to prevent the build-up of calcium deposits which would block the nozzles. The application of phosphoric acid is also a good source of phosphate for the plants.

If growers are to optimise their productivity, it is essential that they have an accurate and quick method for soil and water analysis. This is especially true when growers have to produce crops in soils with a high pH and alkaline irrigation water. Such a service is not available in Jordan.

2.4 Cost and availability of airfreight

Normally, the major cost associated with the cutflower exports is airfreight. The availability of cargo space can also be a significant factor inhibiting the expansion of perishable exports. Competitively priced airfreight as well as spare cargo capacity on a regular basis are therefore essential for the establishment of a successful exports.

The Queen Alia International Airport, sited about 25 km from Amman, is well serviced by a wide range of international flights, both passenger and cargo, to many destinations. Cutflower growers prefer to export on the scheduled passenger services because they are more reliable than freighter services. Although in some of the major cutflower exporting countries, most of the exports are carried by freight aeroplanes.

This section reviews focuses on flights **direct** to the target market. Produce can be transshipped at an intermediary airport to another airline. However, this is not recommended for highly perishable produce such as cutflowers, because delays frequently occur at the intermediary airport with the subsequent loss of quality. Some companies operate a regular refrigerated trucking service from European airports to major towns and cities. These services can be used for cutflower exports although, inevitably, there are more risks involved than if a direct flight to the target market is used.

It is essential that the boxes of cutflowers should be carried either on airline pallets or in containers. If they are put lose in the hold of a aeroplane, they are liable to get badly damaged. An airline pallet normally takes between 1.5 to 2.2 tonnes of cutflowers. The lower weight is for pallets which are used on passenger aeroplanes. The higher weight is for pallets used in "combi" and freight planes because they can be stacked higher. The type of flower also has a significant effect on pallet weight. The pallet weight of some flowers can be very low, eg gerbera and chrysanthemum. The low pallet weights for these flower types make it extremely difficult to export them by air profitably.

a) Europe

The main airline operating in Jordan is Royal Jordanian Airlines (RJA). Their planes fly regularly to a number of European destinations including Amsterdam, London, Paris, Rome, Berlin, Frankfurt and Geneva. This airline has five Lockheed Tristars and four Airbus 310s which are used for most of the international flights. Normally these planes have two or three airline pallets available for freight, depending on the passenger loads. In addition to the passenger planes, RJA also has three

Boeing 707 freighters, which can carry 13 airline pallets and about 6 tonne of produce non-palletised. RJA operate a regular freighter service to Maastricht and London. It is possible to truck exports from Maastricht to other destinations. The freighters are also available for chartering.

In addition to RJA, other airlines such as KLM (Royal Dutch Airline), Air France, Alitalia and Austria Airlines fly regular passenger services to Europe. Most of these airlines also land in another country in the region before returning to Europe, eg Lebanon or Syria. Therefore, exporters from Jordan will be competing with these other countries for freight space. In fact, KLM currently do not collect any airfreight from Amman; they reserve the space for other countries. Most of these European-based carriers use either Airbus 310s or MacDonal Douglas M80s, both of which generally have about two pallets available for freight.

During the 1993/94 winter season, there were 12 weekly flights to Amsterdam, six to London, six to Paris, five to Rome, four to Frankfurt and four to Vienna. Further details of the flight destinations, carriers, type of aeroplane and frequency are given in Appendix 2.1.

It is difficult to calculate precisely how much freight capacity is available for expansion of perishable exports from Jordan because data on spare cargo space on each flight is not recorded. However, it is estimated that there is about half as much freight imported into Amman than that exported which would imply that there is spare capacity for exports. Airlines and freight forwarders were also asked if they thought there would be sufficient spare capacity to increase cutflower exports to 15 to 20 tonnes per week to the major European destinations. They all believed there was sufficient spare cargo capacity. Therefore, the expansion of cutflower exports in the medium term will not be constrained by availability of cargo space.

Other factors will also help potential Jordanian exporters of perishable produce. About two thirds of the airfreight out of Amman is non-perishable transit cargo. Cutflowers should have priority over non-perishable cargo. If the cutflower exports expand to well in excess of 20 tonnes per week towards 100 tonnes per week, then chartering freighters on a regular basis from RJA, or other airlines becomes a viable option.

The airfreight rate for cutflowers to Europe is effectively set by RJA. The rate published by RJA for consignments over 100 kg is JD 0.55/kg (US\$ 0.78/kg), which is considerably less than the IATA (International Air Travel Association) rate. RJA have indicated that they may even be prepared to lower this rate, to around

JD 0.50/kg (US\$ 0.70/kg), if the weight per pallet approaches 2 tonne. (These rates are slightly higher than for fruit and vegetables which are currently JD 0.46 to London, JD 0.42 to other European destinations). KLM are not collecting cargo from Amman but would probably charge the same as RJA for regular consignments of cutflowers. Air France do export perishable produce to Europe and would also charge the same rate as RJA.

It is reputed that the airfreight rates for cutflowers, fruits and vegetables levied by RJA are subsidised. However, compared with the rates charged by other carriers in other countries for flights of similar distances, the rates out of Jordan are competitive. For example, the commercial freight rate for cutflowers from Israel is between US\$ 0.80 to 0.85/kg (JD 0.57 to 0.60). Commercial airlines flying from West Africa to Europe which have a similar flying time as from Amman to Europe charge US\$ 0.65 to 0.92/kg (JD 0.46 to 0.65). Therefore, the rates charged by RJA for fruit, vegetables and cutflowers are reasonable.

It must be expected that airfreight rates will rise if perishable exports to Europe increase significantly. Freight rates are also affected by the laws of supply and demand. Airfreight cargo companies in Europe were asked to give indicative prices they would charge for regularly collecting freight in a dedicated cargo plane from Amman to Europe. They believed that a rate of about US\$ 0.80 to 0.85 per kg would be sustainable. Therefore, in the financial analysis, a freight rate of US\$ 0.85 (JD 1.20) per kg has been used.

In summary, from a freight cost and availability viewpoint, Jordan is in an excellent position. The range of destinations of passenger planes give exporters the chance to target a wide range of countries in Northern Europe. The frequency of flights should enable flowers to be harvested and shipped quickly to Europe, thereby helping maintain quality. There is sufficient spare airfreight space available for expansion of exports in the short to medium term. The rates charged are competitive.

b) Regional destinations

Exports by air to countries in the region can be carried on a range of airlines as well as RJA. These include Gulf Air, Middle East Airlines, Egypt Air etc. A wide range of planes are used for this regional market including Airbus 310s and 320s, Boeing 727s, 737s and 767s, and Tristars.

Again it is difficult to demonstrate how much spare freight capacity there is on flights to countries in the region. The airline operators note that on most flights

there is spare capacity and they estimate that cutflower exports could increase by a factor of four and there would be no problem with capacity. In addition, there is an extensive and efficient refrigerated road distribution to most of the countries in the region as virtually all the fruit and vegetable exports are transported by road. The journey time to most of the Gulf States is less than 24 hours. Therefore, providing the flowers have been properly cooled after harvest, road transport to these markets would be a viable option. Thus, there is sufficient freight capacity for a considerable expansion of cutflower exports to neighbouring countries.

Currently airfreight rates to the regional market for cutflowers are between JD 0.25 to 0.32/kg (US\$ 0.35 to 0.45/kg). These rates are expected to remain the same in the short to medium term.

c) Eastern Europe and other destinations

There are currently two flights per week to Eastern Europe, to Moscow and Bucharest. These flights are organised by Aeroflot and Tarom respectively. Both use planes with little freight capacity (about 1 tonne). The cargo is non-palletised. The flights are infrequent and irregular. All these factors make serious exports of cutflowers to Eastern Europe very problematic.

It may be possible to supply East Europe by transshipping in Western Europe. However, transshipping of perishable produce, either by plane or truck, is difficult. Most of the passenger flights from West to East Europe use small planes with limited freight capacity and often only take non-palletised freight. The limited freight space is often booked many months in advanced by European based exporters. Therefore, it is virtually impossible to achieve quick and reliable connections to Eastern Europe. Therefore, transshipping by aeroplane to Eastern Europe is not recommended. The trucking services to Eastern Europe are also unreliable, but it may improve with time.

RJA also flies to a number of cities in North America, ie Chicago, Montreal and New York. The freight rate for cutflowers to North America is JD 0.80/kg (US\$ 1.13). However, it is unlikely that North America will become a significant market for Jordanian cutflowers in the short or medium term.

In addition to the airfreight rates quoted above, exporters have to pay for documentation and some other costs. These extra costs are small and do not significantly add to the cost of airfreight.

2.5 Jordan's competitiveness

If Jordan is going to compete successfully on the international markets in the medium and long term, it should have significant advantages over most of the competition. It should certainly not have any significant competitive disadvantages. This section reviews some of the factors affecting Jordan's competitiveness.

a) Climate

Jordan's climate was discussed in detail in Section 2.3. For the majority of flower types required by the European market, summer temperatures are too warm for good quality production. Therefore, the main focus for exports should be from winter production. There are a number of other countries trying to compete on this market.

Jordan has a significant competitive advantage over northern European producers because it is warmer and sunnier in the winter. It can therefore produce cutflowers without expensive supplementary heating or lighting. Some southern European countries with warmer winters, eg Italy and Spain, are supplying Europe with a small range of cutflowers. Their main season is January to March, ie shorter than Jordan's.

Jordan is at a competitive disadvantage compared with growers in South America (eg Columbia and Ecuador) and Africa (eg Kenya and Uganda). These countries are situated near the Equator and have reasonably constant temperatures throughout the year. At altitudes of between 1,400 and 2,000 m, they grow a wide range of good quality flowers all the year round. This longer growing season gives higher exportable yields and enables the overhead costs to be spread further.

The high summer temperatures in Jordan reduce the length of the effective export season to Europe. However, one of the technical issues needing to be addressed by potential exporters is how to modify the environment inside the greenhouses to lengthen the growing season. Also, it should be noted that Jordanian growers can increase their effective export season by marketing their flowers to the regional market in the summer.

Jordan has a similar climate to Israel, a very successful exporter of cutflowers to Europe. However, in some ways the winter climate in Jordan may be better as it is less cloudy; the extra sun is beneficial for warming the greenhouses in the winter.

b) Water for irrigation and land availability

Availability and cost of water for irrigation are major constraints to the international competitiveness of the cutflower industry in Jordan. Most of the growers do not have their own source of water, but have to purchase it from a neighbour. In the Amman region, growers generally pay between JD 0.35 to 0.85 (US\$ 0.49 to 1.20) per cubic meter of water. It is estimated that in Jordan a square meter of cutflowers would require about 1.8 to 2.0 cubic meters of water each year. This high cost of water is causing some of the growers to underwater their crops leading to reduced yields and poorer quality.

The availability of land is not a constraint to the development of cutflowers.

c) Airfreight

The major cost associated with cutflower production is airfreight. Therefore, it can be a significant competitive advantage or disadvantage. The airfreight situation in Jordan was described in section 2.4. Data in Table 2.5 show the current airfreight rates to Northern Europe for some of Jordan's main competitors. This table gives the airfreight rates cutflower exporters are actually charged and compares it with the official IATA (International Air Travel Association) rate. The IATA rates are meant to be charged by airlines, but these only guidelines as freight rates become increasingly negotiable.

Table 2.5: Airfreight rates for cutflowers from Jordan and other countries (US\$/kg)

Country	Airfreight rate	IATA rate	
		To Amsterdam	To London
Jordan	0.70 - 0.75	2.04	1.75
Kenya	1.45 - 2.10	2.20	2.20
Uganda	1.35 - 1.50	5.64	5.97*
Zimbabwe	2.38 - 2.52	2.25	2.25
Israel	0.85	1.44	1.77
Thailand	3.05	3.04	3.16
Columbia	2.08 - 2.32	3.91	3.91
Ecuador	2.22	5.37	5.37
Mexico	2.40	4.01	4.01

* There is no commodity rate for cutflowers, therefore the general cargo rate applies

The data in Table 2.5 show that compared with other countries, Jordan has a significant airfreight advantage. The only country that has comparable airfreight rates is

Israel. Jordan has an advantage of between US\$ 1.00 to 2.00 per kg over most of its potential competitors. This advantage is the equivalent of US\$ 0.04 to 0.08 per stem for a crop such as carnations.

If exports of cutflowers and other cargo to Europe expand significantly and the demand for airfreight space intensifies, then freight rates will increase. However, it is unlikely that they will increase beyond the rate charged from Israel. Therefore, in the medium to long term, it is unlikely that airfreight rates will increase beyond US\$ 0.85/kg (JD 0.60).

There are almost 40 passenger flights per week to Europe as well as a regular cargo flight to Maastricht and availability of freight space should not restrict cutflower exports, at least in the short to medium term. Availability of freight space out of Amman airport is a major competitive advantage.

d) Agricultural labour rates and other production costs

The cost and efficiency of labour can be a significant expense in the production of high-value crops. For the cutflower crops projected for Jordan, the cost of labour is between 5 and 10% of the gross revenue. Quoted labour rates on cutflower farms varies considerably in Jordan. The most realistic rate for labour is about JD 3.00/day (US\$ 4.23). This rate is compared with Jordan's major competitors in Table 2.6. The cost of labour is expensive in Jordan countries, only Israel and Europe are more expensive. However, the higher cost of labour in Jordan is partially offset by its quality and effectiveness. For example, a Jordanian cutflower grower with a good crop employs one worker per 800 to 900 square metres. In comparison, in Africa one worker would be required per 400 square metres, while in Holland a worker could handle 1,200 to 1,700 square metres. Even allowing for the effectiveness of the labour in Jordan, labour costs are 30 to 50% more expensive than in competing non-European countries, with the exception of Israel.

Table 2.6: Approximate agricultural labour rates in Jordan and other countries (US\$/day)

Jordan	4.2
Kenya	0.8 - 1.1
Uganda	0.4 - 1.0
Zimbabwe	2.8
Israel	35 - 45
Thailand	2.5
Columbia	3.0 - 4.0
Ecuador	3.0 - 4.0
Mexico	4.0 - 8.0
Holland	90 - 100

The other major production costs associated with cutflower production are planting material, packaging and agrochemicals. A number of growers stated that the cost of planting material is very high. They claim this is due, at least in part, to import duties. However, the Ministry of Commerce and Industry claim that the importation of essential planting material for producing cutflowers for export should be duty free. Agrochemicals are imported duty free and are competitively priced compared with other countries. Similarly, the cost of packaging is reasonably priced. The quality and availability of most agricultural inputs, including packaging, required for cutflower production is good.

The cost of capital structures such as greenhouses and cold stores can be significant. However, the costs quoted for these items in Jordan are competitive. In fact, total costs of production in Jordan are similar to most of the other competing countries.

e) Financial incentives and economic environment

Many of the countries trying to establish a significant cutflower export industry are given financial incentives by their Governments to encourage investment and expansion. Growers and exporters in Jordan are also given a wide range of incentives. For example, they do not pay income or corporation tax. Dividends are not taxed. However, if the exporter is not the grower then he is liable for tax on his profit, but even then, 70% of the profit is exempted from tax.

As noted earlier, most of the imported inputs for a cutflower project should be duty free. According to the Ministry of Commerce and Industry, export orientated cutflower projects can be registered as an "economic project". This can be done by making a relatively simple application to the Ministry. This grants the project duty free status for most imported inputs. However, some local industries are protected, but if this protection causes more than a 10% price increase compared with the imported equivalent, then the protection would be waived for "economic projects". If the raw materials for locally manufactured inputs are subject to import duty, then the local manufacturer can import them duty free to manufacture inputs for the "economic project". These financial incentives are comparable with those being offered by most other countries competing with Jordan.

The general economic environment in Jordan is stable and conducive to investing in export orientated projects. Inflation for the last two years has been under 5% and the rate of exchange has been relatively constant. Most analysts believe that this stability will continue for the next few years. However, some people have suggested that the Jordanian dinar may be overvalued due to recent

inflow of capital into the country. If there is a devaluation, this will benefit exporters.

There is no lack of capital in Jordan. There are a number of banks who would lend to a well-structured cutflower project and a venture capital company which could put in equity. However, the lending institutions would require full collateral cover. The venture capital company would, quite reasonably, require the project promoter to provide about 35% of the total finance. Interest rates vary from a subsidised 7% from the Agricultural Credit Company (ACC) to about 11% from the commercial banks. The availability and cost of project finance are very competitive with the other countries Jordan is competing against.

f) Import duties on cutflowers entering the EC

Jordanian cutflowers imported into the EC are subject to import duty. The duty on flowers such as roses and carnations varies and is either 15 or 20% of the selling price. The higher rate of duty is levied between 1 June and 31 October, ie the main European production season.

Under an arrangement called the Mediterranean Agreement, Israel, Morocco, Cyprus and Jordan have a quota of flowers they can import into the EC duty free. Jordan's quota was initially set at 50 tonnes, with a small increase applied each year. For the 1993-94 season, the quota is 54.5 tonnes, ie the equivalent of about 1.5 million stems. Israel's duty free quota is about 19,000 tonnes. The Israeli quota represents about 80% of their exports of cutflowers to Europe. In other words they only pay duty on 20% of the imports into Europe, which gives an effective average import duty of about 3 to 4%! This quota only applies if the import price is 85% or higher than the average market price. Therefore, this quota can not be used for dumping poor quality flowers.

The current Mediterranean Agreement ends on 31 October 1995. It is anticipated that the Agreement will be re-negotiated and that fresh quotas will be established. To ensure that Jordanian cutflower exports are not put at a major competitive disadvantage, it is imperative that in bi-lateral discussions between the EC and Jordan, efforts are made to secure a large increase in this quota. Therefore, if exports expand, Jordan should at least be on an equal footing with Israel. Confirmation of the import levy arrangement on cutflowers from Jordan into the EC is given in Appendix 2.2.

The 15 to 20% import duty on Jordanian cutflowers (after the quota has been fulfilled) gives it a major competitive disadvantage when compared with African, Caribbean and Pacific (ACP) countries which can import cutflowers into Europe duty free. Also most of the

countries exporting cutflowers in South America can import into Europe without paying duty. Therefore, all the main countries exporting cutflowers to Europe do not pay import duty.

If Jordan exports to European countries which are not in the EC, eg Sweden, Norway, Switzerland, Austria etc, it will be subjected to the same import duty as other exporting countries and not be at a competitive disadvantage. However, given that Sweden, Norway and Austria are likely to join the EC within the next year or two, even this option for competing equally may not exist for much longer.

g) Alternative export markets

An alternative market or a profitable outlet for second quality can give a country a competitive advantage, especially during the start-up phase of a new industry. Jordan has an existing outlet in the Middle East. Its major competitors in this market are Holland, Columbia and Kenya. Jordan is competitive in this market because of its low prices. However, it is likely that Jordan will meet with increasing competition, especially from Holland. The competition from Holland is not from Dutch growers, but specialist exporters who are able to access cutflowers from a very wide range of sources. The major reasons for the increased competition in the regional markets are:

- i) The assortment of cutflowers which can be produced in Jordan is not as broad as can be offered from Holland, virtually every flower type is available any time of the year. Importing from Holland is also very simple.
- ii) The post-harvest handling techniques in Holland, Columbia and Kenya are superior to Jordan; they can supply a better quality product with a longer vase life.
- iii) The high summer temperatures in Jordan result in poorer quality flowers than those offered by the competition.

In the short to medium term, Jordan should continue to retain its market share in the regional market. In fact, if quality and post-harvest handling facilities are improved, their market share should expand. Given the likely increased competition in the future, it is important that exporters start to focus more on the much larger and more stable European market. However, the regional market will be a very useful outlet for some of the second quality flowers and a portion of summer production.

h) Technical expertise

The cutflower industry in Jordan is relatively new. The growers are currently producing quality and yields suitable for the local market. These yields and quality are obviously sufficient to give growers acceptable profit levels. However, if growers are to compete successfully on the European market, the consistency of flower quality and yields have to be improved. Post-harvest techniques also need to be strengthened. For example, small trial shipments of Jordanian cutflowers were sent to Holland and, unfortunately, quality on arrival was poor. Almost certainly, this poor quality was a result of inappropriate post-harvest handling techniques. In other words, the technical expertise for growing and handling of export quality cutflowers in Jordan is inadequate. This lack of technical expertise *is perhaps the biggest competitive disadvantage faced by the Jordanian cutflower industry.* Specific areas for technical support are described later in this report. However, it must be stressed that some of the current producers are doing a good and professional job and with careful, targeted help, they would soon be able to compete with other countries. The expertise required is to bring the growers more up-to-date with the best practices employed in other countries so Jordan is competing on a "level playing field".

There are no adequate facilities for analysing soil and water in Jordan. These services are necessary for managing a modern cutflower farm. Such services are available in Europe and growers should be prepared to send their samples there for analysis and recommendations.

There are a lack cold storage facilities on farms and at the airport. It is relatively easy for growers who are serious about exporting to Europe to invest in an appropriate on-farm cold store. It is obviously more difficult to invest and build one at the airport. It is appreciated that AMO/AMDP is hoping to facilitate the construction of a cold store at the airport for fruit and vegetable exports. However, cutflowers and most fruits have to be stored separately because fruit give off the growth regulator, ethylene, which inhibits flower opening. Therefore, cutflower exporters should not use this proposed fruit and vegetable cold store. If exports of cutflowers increase significantly, then it would be extremely beneficial for the industry if a cold room specifically for cutflowers was built. Most other countries that have established a successful cutflower industry have had a subsidised cold store built at the airport. These have generally been funded by Governments or aid agencies who recognised the importance of the cold chain to cutflower quality.

i) Summary of Jordan's competitiveness

As can be seen from the above, Jordan has a considerable number of competitive advantages and some competitive disadvantages for exporting cutflowers to Europe. These are summarised in Table 2.7. The main advantage is cheap airfreight capacity. This, coupled with reasonably cheap growing costs, means Jordan can grow and export cutflowers competitively. The financial environment is helpful to setting up export orientated projects. It has the advantage of another export market besides Europe, ie the regional market. This could be used either for the second quality or for increasing the marketing season when the European prices are low.

The climate in Jordan is both a disadvantage and an advantage. The temperatures in the winter are sufficiently mild that, in greenhouses, growers can produce export quality cutflowers. The warm summers will reduce flower quality and give a shorter production season than in some African or South American countries.

There are two significant competitive disadvantages. The first is the inadequate technical expertise and knowledge available in Jordan. This is relatively easy to overcome by buying in from reputable sources. However, actually finding the finance to pay for the expertise is more difficult. The second significant disadvantage is the import duty on Jordanian cutflowers coming into Europe. It is essential that the Government and the EC enter into discussions as soon as possible to ensure that when the Mediterranean Agreement is renegotiated, Jordan's quota is increased to reflect its potential for cutflower exports.

It must be appreciated that Jordan is not ideally situated to become the major exporter of cutflowers to Europe. It does not have the competitive advantages to become a significant player on the world markets, like Columbia or Kenya. However, it probably has the competitiveness to be on a par with a country such as Zimbabwe, which in 1992 exported US\$ 28 million worth of flowers to Europe. It will take at least ten years to reach this level.

Table 2.7: Summary of Jordan's competitiveness on the European market

	Jordan	Africa	South America	Israel
Freight \$/kg	0.70 - 0.75 spare capacity	1.50 - 2.50 Not much spare capacity	2.00 - 2.40 Competition for space	0.85 Room for expansion
Costs of production	Labour rates higher than some countries but still competitive	Cheap labour but imported inputs can be expensive	Very competitive	High cost of labour makes Israel increasingly uncompetitive
Financial environment	Good - low levels of inflation, stable foreign exchange rate. Project finance available at reasonable interests	Political instability in some countries leads to financial instability. High levels of inflation, unstable exchange rates. Investment capital is often external	High levels of inflation, variable exchange rates	Good
Alternative market	Local market is adequately supplied. Reasonable regional market	No significant alternative to Europe	United States - Europe is of secondary importance	None
Technical knowledge	Needs some help	Has recently received considerable help and is now at forefront of technical application	Good - receives considerable help from US and much R&D takes place in-country	Excellent
Climate	Warm summers means short growing seasons	Range of climates suitable for many flower types. Constant temperatures can give all year round production	Range of climates suitable for many flower types. Constant temperatures can give all year round production	Good growing conditions in Jordan Valley but the cloudy conditions in the north

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CHAPTER THREE

EXPORT MARKETS

3.1 The European cutflower market

The value and weight of total imports of cutflowers into the Western European markets for 1988-92 are shown in Table 3.1. Cutflower imports increased every year, from US\$ 1,898 million in 1988 to US\$ 2,899 million in 1992, ie an expansion of 53%. The weight of imports increased by 43%, from 350,000 to 501,000 tonnes over the same period. Indications are that, despite the recession, imports into Europe still increased in 1993.

Table 3.1: Imports of all cutflowers into Western Europe, 1988-1992

	1988	1989	1990	1991	1992
US\$ million	1,898	1,935	2,424	2,728	2,899
'000 tonnes	350	386	417	472	501

The small increase in the value of exports between 1988 and 1989 (Table 3.2) was caused by fluctuations in the exchange rate of the US dollar. This small increase in was balanced by a larger one in 1990 when the exchange rate fluctuations went the other way. The decline in the rate of growth of imports in 1992 was caused by the prevailing recession in Europe, which will also affect the growth of imports in 1993 and 1994. The rapidly growing markets in Eastern Europe and the Middle East have not fully compensated for the negative effects of the recession in Europe.

Table 3.2: Percentage change in the quality and value of imports into Europe, 1988-1992

	1988-1989	1989-1990	1990-1991	1991-1992
	%	%	%	%
Value	1.9	25.3	12.6	6.3
Weight	10.5	7.7	13.2	6.2

The biggest importer of cutflowers in Europe is Germany (Table 3.3). In 1992, they imported US\$ 1,333 million which was almost half the total imports into Europe. The next largest importing countries were France, UK and Holland. Over the last five years every country, with the exception of Finland, shows a significant increase in the value of imported cutflowers.

Table 3.3 Value of imports of cutflowers by country into Western Europe (US\$ million)

Country	1988	1989	1990	1991	1992	% change
Germany	856	838	1,044	1,241	1,333	55
France	232	242	315	337	321	38
UK	216	257	302	306	320	48
Holland	120	121	163	185	244	104
Switzerland	125	118	142	141	140	12
Italy	77	83	107	134	133	77
Austria	66	64	79	83	85	28
Sweden	58	55	70	79	83	45
Belgium-Luxemburg	54	61	73	78	83	53
Spain	11	15	27	38	47	341
Denmark	32	31	35	37	39	20
Norway	24	27	30	30	30	25
Ireland	9	11	15	16	18	101
Finland	15	13	14	13	11	(29)
Greece	NA	NA	8	9	8	7
Portugal	0	1	1	2	4	
Total	1,898	1,934	2,423	2,728	2,898	53

The major exporter of cutflowers to Western Europe is Holland. In 1992, Dutch exports to the rest of the EC were worth US\$ 1,843 million. In contrast, cutflower imports from non-European countries into Europe was valued at US\$ 521 million in 1992; a 78% increase compared with 1988. Israel and Colombia are the main non-European exporters in to the EC, followed by Kenya, Thailand and Zimbabwe (Table 3.4).

Table 3.4: Quantity and value of imports of cutflowers into the EC from non-European countries, 1992

Country	Value US\$ '000	Weight tonnes
Israel	122,874	24,005
Colombia	116,609	20,738
Kenya	56,157	19,985
Thailand	32,381	5,152
Zimbabwe	28,424	4,002
Canary Islands	13,914	3,020
Morocco	14,249	2,295
Turkey	12,686	2,037
South Africa	8,745	1,525
Peru	7,680	1,245
Ecuador	7,596	1,046

Import statistics into Europe are broken down into seven different categories of cutflowers, namely roses, carnations, orchids, gladioli, chrysanthemum, other fresh cutflowers and treated cutflowers. The two latter groups are very complex and consist of a wide assortment of different species. Data in Table 3.5 give the value of imports of these seven categories. "Other fresh cutflowers" is the dominant product group, followed by roses and carnations. "Other fresh cutflowers" dominates because it consists of such a wide range of flowers and all new flower types are added to this category. Gladioli imports are small, they are not as important a cutflower as they once were. Appendix 3.1 lists the 20 most popular cutflowers sold on the Dutch auctions.

Table 3.5: Value of categories of cutflowers imported into Europe, 1988 and 1992 (US\$ million)

Flower type	1988	1992
Roses	307	433
Carnations	323	414
Orchids	58	75
Gladioli	12	10
Chrysanthemum	169	209
Other fresh cutflowers	1,030	1,670
Treated cutflowers	67	89

Roses: The rose is the most popular species of cutflower on the Western European markets. Estimated market sales are in excess of 4 billion stems per year. Sales are increasing significantly each year. They are still grown on a large scale in many European countries. Holland is producing about 50% of the roses sold in Europe. Italy, France, Spain and Germany are also important growers of roses for supplying their domestic market; exports from these countries are relatively insignificant. The cut rose is a highly perishable flower with a short vase life. It is therefore important to supply the market frequently with freshly harvested produce.

The value of rose imports increased from US\$ 306 million in 1988 to US\$ 432 million in 1992; an increase of 41%. In 1992, 67,507 tonnes of roses were imported, an increase of 38% compared with 1988 (Table 3.6). The size and growth of the rose market is sufficiently large that new entrants can supply the market without having an adverse effect on prices.

Table 3.6: Value of roses imported into various European countries, 1988 and 1992 (US\$ million)

Country	1988	1992
Germany	175.6	256.5
Switzerland	39.5	46.3
Holland	10.9	39.8
Austria	15.4	23.4
UK	22.1	22.3
Belgium	7.2	11.3
France	19.7	10.0
Denmark	7.5	9.0
Spain	2.6	7.7
Italy	2.0	3.3
Finland	3.7	2.5
Total	306.2	432.1

Holland is the major supplier of roses to Europe, followed by Israel. Compared to Holland and Israel, non-European exporters are relatively small. However, both Holland and Israel have lost market share during the last five years. The market share from European growers has declined from 84% in 1988 to 77% in 1992. The value of this lost market share is about US\$ 27 million. Over the same period, Israel's market share has declined from 9% to 8%, worth about US\$ 6 million.

In 1992, Germany was the biggest importer of roses into Europe, accounting for about 59.2% of the total value of roses imported. Switzerland was the next biggest with 10.7%, followed by Holland with 9.2%, Austria with 5.4%, and UK with 5.2%. Sweden and Norway do not list roses separately in their statistics, but are significant importers of roses. In contrast, Ireland, Portugal and Greece are very small markets for imported roses. Holland showed the largest growth rate for rose imports in Western Europe between 1988 and 1992.

Most of the roses are imported in the winter months, when European production is low and the quality is poor. Importers find it more difficult to compete in the summer, although increasingly some countries are able to supply competitively further into the summer. If Jordan can grow good quality roses between October to May, there will be an attractive and expanding market opportunity.

Carnations: Carnations are the second most popular flower on the Western European market. There are two different types of carnation, ie standard and spray. Standard carnations for the European market are predominantly grown and exported from South America. Spray carnations are grown and exported in both European countries (eg Spain, Holland) and non-European countries

(eg Kenya, Turkey, Israel). Standard carnations are relatively hardy with a long vase life. Spray carnations are more perishable.

The value of carnations imported into Europe increased from US\$ 323 million in 1988 to US\$ 414 million in 1992, an increase of 28%. The volume increased by 19% over the same time to 71,792 tonnes. The slow market growth rate for carnations is mainly caused by the declining popularity of spray carnations, it is reported that the demand for standard carnations is increasing more rapidly.

The major suppliers of carnations to Europe are Holland, Spain and Israel. Together, these countries lost 17% of the market during 1988-92. The main beneficiary of this was Colombia, which increased its share by 14%. A large proportion of Dutch exports of carnations are, in fact, re-exports of imports. This is especially true of spray carnations sold on the Dutch flower auctions. Increasingly, non-European producers of carnations are becoming the dominant suppliers to the European markets. Colombia is increasing its output of standard carnations while Kenya and Turkey are expanding spray carnations. Spain, which traditionally was a spray carnation exporting country, is changing to standard carnations.

In 1992, Germany was the biggest importer of carnations in Western Europe with 44% of the total value of imports, the UK was second with 24%, followed by Holland with 20%, Austria with 4% and Spain with 3%. Holland had the highest increase of carnation imports between in 1988 and 1992. Norway does not list carnations as a separate species in its statistics but it is a significant importer.

There is an interesting market opportunity for good quality standard carnations supplied in the European winter. It is considered that Jordan could satisfy some of this market demand.

Orchids: The European market for cut orchids is small. In principle there are two different types of orchids sold in Europe; tropical orchids, almost exclusively imported from South East Asia, and temperate orchids imported mainly from Holland, New Zealand and Brazil.

Imports of orchids increased from US\$ 58 million in 1988 to US\$ 75 million in 1992, an increase of 29%. The rate of increase in the value of orchid sales is much less than the average for all cutflowers; this reflects their specialist nature.

Jordan has little opportunity to develop significant orchid exports in the short to medium term.

Gladioli: The European gladioli market is small. Imports are decreasing, from US\$ 12 million in 1988 to US\$ 10 million in 1992, a decline of 12%. The volume also decreased, by 34%, to 3,874 tonnes in 1992.

Holland supplies 90% of the total imports of gladioli to Western Europe. Other suppliers include Israel, USA, and Zimbabwe. Zambia and Brazil used to be significant exporters. Imports of gladioli from non-European supplies are small because it is a heavy flower, which can only be exported profitably from countries where the freight rates are low. Alternatively, the exporter can benefit from preferential pallet rates, where gladioli are mixed with lighter and higher value cutflowers.

Jordan could only export gladioli to Europe profitably if a firm purchase contract, including predetermined prices and quantities, was established before planting. Gladioli prices on the Dutch flower auctions tend to be low, but some direct importers (eg in the UK) will pay a much higher price to get a regular supply of good quality. In addition, it will be necessary to propagate gladioli planting material in Jordan to be competitive in the longer term.

Chrysanthemum: Chrysanthemum is the third most popular cutflower in Western Europe. This product also needs low airfreight rates and/or preferential pallet rates for non-European countries to compete profitably in Europe. The import season for this flower type is comparatively short. The market window for imports on the Dutch auctions is about three to four months, but this can be stretched by trading with direct importers. The young plant material would have to be propagated in Jordan if it is to be competitive in the longer term.

The value of imported chrysanthemums into Western Europe increased from US\$ 169 million in 1988 to US\$ 209 million in 1992, an increase of 24%. The increase of chrysanthemum imports is much less than the average for all cutflowers, another reflection of the lack of opportunity for exports from Jordan.

Dutch and Spanish growers have lost market share in the last five years, whereas Israeli and Italian producers have increased their share. Other countries supply little to Western Europe; much of Europe's requirement comes from domestic production.

Germany is the major market for chrysanthemum, with 63% of the total European imports in 1992, followed by UK with 25%, and Belgium with 3%. Switzerland, Sweden and Norway are significant importers but, as with Finland, do not list chrysanthemum imports separately. Other countries import very little.

Other fresh cutflowers: "Other fresh cutflowers" is a very large group of flower types accounting for 58% of the total value of imports into Western Europe. This category is expanding rapidly as new flower types are added into it. Expansion of flower production in this category is in both non-European and European countries. The major contribution to the assortment of flowers in this group was made by Israel at the beginning of the 1970s, when Israeli exporters started growing and developing a wide range of summer flowers. At that time, summer flowers were new to the market. This group of cutflowers still has plenty of potential for expansion.

The value of imported "other fresh cutflowers" increased from US\$ 1,030 million in 1988 to US\$ 1,669 million in 1992, an increase of 62%. This increase is larger than the average of total cutflower imports. The weight of imports increased by 59%, to 285,992 tonnes in 1992. The increase has been consistent over the last five years.

Holland dominates in the supply of "other fresh cutflowers", both from its domestic production and as a significant re-exporter. The re-exported flowers originate mainly from Africa and Israel and are sold through the Dutch auction and/or wholesale system. Holland has increased its market share by 3% over the last five years, whereas Israel and Italy have lost 3%. Other countries such as Kenya, Colombia and Zimbabwe have slightly increased their market position.

Jordan already grows a wide range of flowers in this "other fresh cutflowers" category. Given the rate of increase of imports of this category, there could be some commercial opportunities for Jordanian exports. These opportunities will be considered later in this report.

Treated cutflowers: "Treated cutflowers" has only existed as a separate Customs group since 1989. It consists of dried, dyed, bleached or otherwise prepared cutflowers. Market interest has increased significantly with the introduction of new products such as dried cut roses and wild flower types from non-European suppliers.

The value of imported "treated cutflowers" increased from US\$ 67 million in 1988 to US\$ 89 million in 1992, an increase of 32,5%. The quantity of imports expanded by 8% to 8,517 tonnes in 1992. Holland is the dominant supplier of treated cutflowers, followed by UK and Italy.

The major markets for "treated cutflowers" in Europe are UK, Germany, France and Italy. Imports are more evenly distributed between the countries than for other cutflower groups. Imports into UK and Holland declined, but increased into all other countries between 1988 and 1992. The market for "treated cutflowers" is sensitive to fashion trends, and market preference can change

rapidly. If Jordan aims to enter this market, a good market information service will be essential.

3.2 Projected growth in the European cutflower market

Consumption of cutflowers in Europe has increased over the last few years. The rate of increase of imports is greater than the increase in consumption. This implies that European production is declining. This is true, although in some countries, output is increasing. For example, Dutch production is increasing, although slowly, but southern European production is declining significantly.

The average annual increase in imported cutflowers between 1988 and 1992 was 16%. There were, however, significant variations between countries (Table 3.7). Between 1988 and 1992, there was an indication that the rate of increase of imports was declining. It should be noted that the differences between 1989 and 1990 were significantly affected by changes in the exchange rate of the US dollar to the Dutch guilder. In addition, the severe recession in Europe has reduced the average purchasing power which contributed to the slowing down in the rate of imports.

Table 3.7: Percentage change in the value of imported cutflowers into various European countries, 1990-92

Country	1990 %	1991 %	1992 %
France	30	7	(5)
Belgium	20	6	7
Holland	35	14	32
Germany	25	19	7
Italy	30	25	(1)
UK	18	1	5
Ireland	40	9	12
Denmark	12	7	4
Greece	NA	20	(11)
Portugal	47	82	51
Spain	76	44	23
Norway	13	(2)	4
Sweden	29	12	5
Czechoslovakia	11	(6)	(16)
Switzerland	20	0	(1)
Austria	24	5	2
Total	25	13	6

The market for cutflowers is not expected to recover fully from the effects of the prevailing recession until 1995; market increases in 1994 are therefore expected to remain small. However, the positive increase in demand for cutflowers is encouraging, since sales of most luxury items in Europe have experienced a decline. Cutflower sales will develop differently in each European country depending on how seriously their economy has been affected by the recession. In 1994 and 1995, the market for cutflowers is expected to expand significantly in Holland, Germany and Spain. The anticipated increase in Holland is due, in part, to the replacement of domestic rose and carnation production. Cutflower imports into Germany increased by more than 3% in the first six months of 1993; this is expected to continue. The Spanish market is expanding and local production is decreasing; this combination provides an excellent opportunity for imports. France and Switzerland are not expected to increase their imports of cutflowers in the short term.

By 1997, the cutflower market is expected to grow at a rate approaching that achieved in 1991. Domestic production of cutflowers is expected to continue to decline in southern Europe. Dutch production of the major cutflower types (roses, carnations and chrysanthemum) will also decrease. Table 3.8 shows the estimated growth rates for cutflower consumption in Europe between 1994 and 1998. It also gives estimates for the rate of growth of imports. These projections may be conservative because some experts predict a rapid increase in Dutch re-exports to Eastern Europe which will help stimulate imports into Holland. If Norway, Sweden, Finland and Austria become members of the EC, imports are expected to increase more rapidly.

Table 3.8: Projected growth rates for total cutflower consumption and imports for Western Europe, 1994-98

	1994	1995	1996	1997	1998	Average
	%	%	%	%	%	%
Total market	2-3	3-4	4-5	5-6	5-6	4-5
Imports	5-7	7-8	7-8	8-9	8-9	7-8

To put the increases projected in Table 3.8 into perspective, an increase of 5% in the total consumption of cutflowers in Europe would be worth about US\$ 145 million. This is equivalent to the value of flowers from 400-600 ha of roses, or more than the entire European imports of cutflowers from Colombia. A 5% increase of imported cutflowers is the equivalent of US\$ 26 million, or the value of exports from 75-100 ha of roses.

3.3 The Middle East markets

There are little import data available for the Middle East countries. Therefore, the analysis in this section is focused on imports from Europe, which is a good guideline to the development of the markets in this region. Table 3.9 shows the value of imports of cutflowers from Europe between 1989 and 1992. These data will exclude supplies from countries such as Jordan but, in comparison with exports from Europe, they are small.

Table 3.9: Exports of cutflowers from Europe to various Middle East countries, 1989 to 1992 (US\$ '000)

Country	1989	1990	1991	1992
Lebanon	46	24	290	684
Saudi Arabia	986	961	784	2,024
Kuwait	1,092	830	461	1,583
Bahrain	249	406	226	745
Qatar	212	268	168	247
UAE	397	477	357	892
Oman	754	2,120	1,279	1,756
Total	3,736	5,087	3,535	7,932

It is clear that the crisis in Kuwait affected the imports of cutflowers in the region in 1990-91. However, after this crisis, imports to the Middle East increased significantly. Dutch exporters claim that the market increase in the Middle East continued in 1993, especially in Saudi Arabia, Oman and Kuwait. The demand in the Middle East is expected to continue to increase over the next few years. But, as the region is unstable politically, great care should be taken to ensure that growers have alternative markets for their produce.

3.4 The Eastern European market

There are few accurate statistics available for imported cutflowers into Eastern Europe. Data on imports from Western Europe are available. These can serve as a good guideline to trends in the market. Table 3.10 gives the value of cutflower imports from Western Europe for 1989 to 1992. The civil war in Yugoslavia severely reduced imports in 1992. It is reported that imports of cutflowers into Eastern Europe as a whole continued to expand in 1993. It is difficult to predict likely market opportunities in Eastern European due to political conflicts and other factors. However, it is expected that Czechoslovakia, Poland and Hungary could develop into significant and stable markets for imported cutflowers. Dutch exporters claim that Russia imported

considerably more cutflowers in 1993. Before too long, it could become a significant market for cutflower exports. Other countries in Eastern Europe will be more unreliable.

Table 3.10: Exports of cutflowers from Europe to various Eastern European countries, 1989 to 1992 (US\$ '000)

Country	1989	1990	1991	1992
Yugoslavia	272	8,926	15,874	3,763
Poland	91	365	2,192	2,777
Czechoslovakia	14	85	6,163	10,194
Hungary	66	116	798	1,856
Bulgaria	14	25	NA	8
Russia	79	76	46	212
Croatia	--	--	NA	547
Total	536	9,593	25,073	19,356

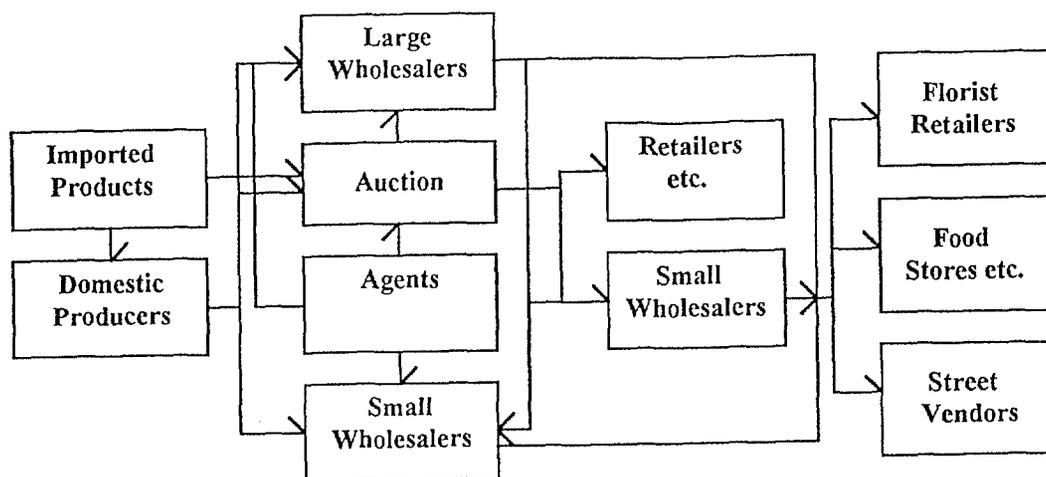
Eastern Europe represents an interesting opportunity for European based exporters to develop; however the market is much smaller than Western Europe and the marketing and distribution channels are not very well developed. It is extremely hard to break into this market, especially for non-European exporters.

Western Europe is the biggest market considered. The value of imports into Europe was US\$ 2,899 million, the value of imports into the Middle East was about US\$ 8 million and the value of imports into Eastern Europe was estimated to be about US\$ 19 million. To put these figures into perspective, the size of the Western European cutflower market is probably about 20 billion stems, the Middle East about 40 million stems and Eastern Europe about 100 million stems.

3.5 Marketing channels and selling costs in Europe

Various channels can be used for marketing cutflowers in Europe. These can be divided into three different groups, ie the Dutch flower auctions, agents and wholesalers/importers. The interaction of these groups and the retail outlets is shown in Fig 3.1.

Fig 3.1 Diagram showing the interaction of different marketing channels



a) Flower auctions

The European flower auctions are organised and controlled by the domestic growers as co-operatives. Their prime objective is to sell the members' products effectively and at as high prices as possible, and to defend the domestic growers' interests. This obviously clashes with the interests of importers and exporters which sometimes causes conflict between Dutch growers and management. There are seven flower auctions in Holland, three small ones in Germany and a very small one in Belgium. The three biggest auctions in Holland dominate the marketing of cutflowers in Europe. The Dutch flower auctions had a turnover of US\$ 2,873 million in 1992. It is estimated that they are responsible for marketing about 85% of Dutch floricultural output.

Most of the auctions sell imported floricultural products, mainly cutflowers and cut foliage. Their involvement with imports arises from their concern at the increasing levels of imports supplied directly to wholesalers and retailers, bypassing the auction system altogether. Therefore, the auctions accept some imported products to give continuity of supply to their customers. However, they charge a higher commission on imports than on domestic supplies. They often limit the import season and/or the assortment of flowers to protect the Dutch growers. Even though the auctions are starting to recognise the importance of imports, their restrictive trading policies caused their turnover to decrease by 2.3% in 1992 despite an increase in the overall trade of flowers.

It is simple for an exporter to sell via the auctions. Payments are made quickly and are secure. An exporter would be charged about 15 to 18% for selling at one of the main auctions. This charge would include handling and unpacking. This compares with a selling cost of about 7% for locally grown Dutch produce. Prices obtained at the auctions will nearly always reflect the market situation and flower quality. However, the price will be known only after the flowers are sold, but they are made public. In general, prices obtained at the major flower auctions are higher for good quality than the direct importers would pay. In contrast, prices are often lower at the auctions for average and poor quality. The major non-European suppliers to the flower auctions are Africa and Israel, whereas exporters in Central and South America and South East Asia tend to market directly to their target markets.

The buyers at the flower auctions are, in general, representatives from both small and large wholesale companies. However, retailers often buy at the smaller auctions.

Further details and costs of supplying imported flowers to the Dutch auctions are given in Appendix 3.2.

b) Agents

Many growers exporting to Europe sell through agents. The business relationship between the exporter and agent varies. Some agents are given considerable responsibility in deciding marketing strategies, others are just a representative controlled by the exporter. Some agents will offer technical advice and other services as well as opening the boxes and conditioning the flowers before selling.

There are two major types of agents. The first is characterised by a high degree of technical support and other services given to the grower and is very active in marketing decisions. These are often used by many African exporters because of the help and advice needed they need to establish a cutflower project. Most of these agents are based in Holland, where they have buildings for unpacking and preparing flowers for sale. Traditionally, they placed imports on the Dutch auctions. However, they are now starting to market more of the produce directly to the wholesalers in Holland and other target markets. These agents work on a commission basis; they pay the exporter the actual sales price less commission and costs. The commission is generally 8-10% of the sales price, but can be higher. The costs include auction charges, airport clearance, handling and transport. Total deductions depend on the secondary marketing channel chosen by the agent; selling through the auctions will be more expensive than direct sales.

If the agent sells through the auctions, the importer will have between 17 and 32% deducted, compared with 10 to 19% for direct sales. The differences in deductions can often depend more on which agent is contracted rather than the amount or quality of the actual work involved. It is difficult for an exporter to evaluate the performance of an agent, especially when the flowers are sold directly to a wholesaler because the selling prices are not made public.

The second type of agent is generally used by cutflower and live plant exporters in Central and South America. These agents split up a shipment on arrival and organise its distribution. They often sell the flowers and send out invoices and sometimes act as the exporter's representative in the target market. These agents assess the solvency of clients, inspect claims, produce market information and look for new clients. These agents are working on a commission of between 5-20%, depending on the workload. Exports to these agents are, in general, on fixed C&F or FOB prices. The produce is always sold directly to wholesalers or to growers in the target markets.

Large exporters in Africa, South America and Israel often establish their own distribution companies in Holland and/or in other target markets which take over the agent's functions. An example of this is Agrexco which is the central export and marketing organisation in Israel.

c) Wholesalers/importers

A wide range of wholesalers exists. Some are large and sell over a wide area, possibly a number of countries. In general, it is only the larger ones that are involved with importing.

Large wholesalers in Holland and other European countries obtain their supplies from a range of sources. They can import directly from exporters or buy direct from domestic producers and the Dutch flower auctions. Large wholesalers sell both to retail outlets and other wholesalers. When they trade with other wholesalers, they normally sell complete boxes, or cartons. Large wholesalers may be specialised in cutflowers but they normally also handle cut foliage and live plants.

Large wholesalers buy from exporters either at a fixed price or on a commission basis. They charge between 15 to 20% of the selling price for their services. Some of the major exporters in Central and South America and South East Asia market cutflowers through large wholesalers.

3.6 Distribution to retail outlets

In the last 10-15 years, distribution of cutflowers to retailers by public transport has declined. In contrast, selling and distribution from wholesalers' trucks has increased. This has weakened the position of domestic wholesalers in most European countries especially Germany, Belgium, Luxemburg and France. It has strengthened the position of Dutch exporters. They have access, through the Dutch flower auctions, to the largest assortment of floricultural products in the world at very competitive prices. They can buy on the auction and deliver directly to retailers throughout Germany, Belgium, Luxemburg, northern France, Switzerland, Austria, Italy, Spain, UK and Denmark. These Dutch exporters, who are often referred to as the "Flying Dutchmen", have taken a major share of the domestic wholesalers' market in much of northern Europe.

Retailers in the major European cities have traditionally bought their flowers from wholesale markets. However, the distributing wholesalers (eg "Flying Dutchmen") will become increasingly important because it is more convenient for the retailers. The "Flying Dutchmen" will not completely eliminate the domestic wholesale system in northern Europe, but it will continue to put it under considerable pressure. Domestic wholesalers will still buy locally grown cutflowers and complete the assortment with products from Holland and possibly direct imports. Imports from non-European countries are, in general, the major cutflower species such as roses, carnations, chrysanthemum, lilies etc.

3.7 Distribution time

An important consideration to be taken into account when deciding which marketing channel is to be used from Jordan is the time it takes for the produce to reach the end user. If this is too long, quality may suffer, which would give Jordanian flowers a poor reputation. It is normally quicker to distribute direct to the target market instead of via Holland (Table 3.11). The differences described in Table 3.11 may seem small, but are important for species with a short vase life, such as roses. Flowers grown in Holland also take a long time to reach markets in other European countries. For example, Dutch-grown flowers harvested on Friday will reach Sweden on Tuesday and the retailer on Wednesday, ie six days later. The distribution time for Dutch exports and direct exports from non-European countries to target markets, such as Sweden, UK etc is similar in spite of the difference in distance. However, Dutch products will be fresher if they are distributed by "Flying Dutchmen" due to reconditioning prior to selling at the auction.

Table 3.11: Comparison of time from harvest to market place for different distribution channels

a) Export via Holland

Activity	Day of the week	
Harvest	Saturday	Thursday
Export	Sunday	Friday
Arrive Europe	Monday	Saturday
Reconditioning		
Sell	Tuesday	Monday
Arrive client	Wednesday	Tuesday

[Time from harvest to wholesaler is 5-6 days and 6-7 days to reach retailer]

b) Export direct to target market

Harvest	Saturday	Thursday
Export	Sunday	Friday
Arrive Europe	Monday	Saturday
Arrive client	Monday/Tuesday	Monday

[Time from harvest to wholesaler is 3-5 days and 4-6 days to reach retailer]

The transport costs from non-European flower growing countries are generally the same to Holland as to most other European countries, provided there are regular and frequent direct flights. It is therefore recommended that exporters supply direct to their end market, because the flowers arrive at the client quicker. In addition, if they are distributed directly to target markets outside Holland and not via the Dutch auctions, agents or wholesalers, it saves a considerable amount of money. Nevertheless, selling via Holland is still the best way for small and medium volume species to reach the German and Belgian markets.

CHAPTER FOUR

AGRONOMIC RECOMMENDATIONS

4.1 Recommended cutflower species

There are a number of cutflower species which could be grown successfully in Jordan for export to Europe. However, the agronomic production techniques will need to be modified to achieve competitive yields and consistent quality. The flower types recommended in this study have already demonstrated that they will grow well and produce good quality in Jordan. Even then, it will be necessary to improve the present post-harvest handling systems and to modify some production techniques before serious exports can be made to Europe. The size of the market was also taken into account when recommending flower types for Jordan. It is important to grow flower types with a sufficiently large market demand that importers will buy them as a single item. Once exports of these large volume flower types are established, other species with a smaller demand can then be added. It is not possible to start selling small volume flowers as a single item unless it is to the Dutch auctions. The recommended species cannot be successfully produced in northern Europe during winter, which necessitates imports. The species recommended are:

- Standard carnations
- Gypsophila
- Roses

Roses and standard carnations are the two most popular cutflower species on the European market. Gypsophila is the fifth most popular, in terms of volume sold, on the Dutch auctions. There is a market opportunity to export these species all year round, provided production techniques and facilities are improved. However, given the hot summer temperatures in Jordan, a eight month export season to Europe is probably the maximum that should be expected.

Other cutflowers can be grown for export from Jordan, at certain times, including: lisianthus, gladiolus, caspia (*L. lathifolium*), liatris and alstroemeria. However, these crops will require more substantial changes in production techniques and plant material. They should only be considered for future development after the cutflower industry in Jordan is firmly established. It may be possible to add even more flowers to the list, but it will be necessary to undertake some simple adaptive research trials before the list could be expanded.

4.2 Recommended locations

In Jordan, the main cutflower producing area is around Amman. Some production also takes place in the Jordan Valley. Given that the Amman region will have a longer growing season than the Jordan Valley and it is much nearer the airport, it is sensible to promote export production around Amman. When Jordan has a well-established cutflower industry with a reputation for good quality, then it will be possible to expand export production into other regions.

4.3 Recommendations to improve production techniques

To achieve appropriate export quality of the three species recommended above for export to Europe, the following technical issues should be addressed:

Greenhouse construction: Most cutflowers are currently grown in plastic tunnels which have inadequate aeration. They are also inefficient in both labour and land utilisation. If growers are serious about competing on the export markets, it is recommended that they invest in multispan greenhouses with an adequate ventilation system. Good ventilation, coupled with a high roof, is essential for keeping the plants cool at the beginning and end of the season. It is recognised that multispan greenhouses are more expensive but they will provide a better environment for the flowers, giving better quality, higher yields and a longer productive export season. In addition, there will be a 14-16% increase in land utilisation and labour efficiency will increase by 20-30%. Rainwater can also be collected from the roof and used for irrigation.

A new greenhouse design will have to be developed for manufacture in Jordan, as the present designs are not appropriate. Alternatively, greenhouses could be imported from Holland or Israel.

Heating: It is recommended that potential exporters install an emergency heating system. This system would be used to prevent greenhouse temperatures falling too low during cold nights. Without an emergency heating system, flower quality could suffer and winter production would be erratic. It is recommended that night temperatures for carnations and gypsophila do not fall below 6-8°C. Roses would have to be kept slightly warmer. Observational trials will be needed to determine the optimum temperature regime required around Amman.

Varieties: The most suitable assortment varieties for Jordan need to be determined. This is crucial for carnations and roses. It appears that the Mediterranean assortment of carnation varieties is suitable for the

Amman region. It is recommended that potential exporters concentrate on these varieties. The Sim varieties of carnations are not performing well and should be avoided. It is recommended to plant the "Perfecta" variety of gypsophila. New varieties are being developed in Israel; it would be interesting to obtain some in order to assess their performance in Jordan.

It is more difficult to recommend which rose varieties to plant for export because the choice depends on the markets selected by the grower. However, varieties which are not too sensitive to low night temperatures should be selected. It is also recommended to use rose varieties grafted on R. Indica Major or R. Manetti. These root stocks will perform better than R. Canina in Jordan.

Plant density: Cutflower growers in Jordan are, in general, using a too high plant populations. This is caused by the lack of technical information available to the growers. High densities will lead to poor flower quality and are a waste of expensive planting material.

A correct plant density per gross square meter (ie the gross area of the greenhouse) would be 15-16 for carnations, 5.5-6 for roses and 1.6-2.2 for gypsophila. Growers in Jordan are often planting double these recommended densities.

Quality of planting material: The growers in Jordan are trying to reduce costs by propagating planting material from the old, flowering, plants. This is not recommended because, in the longer term, it will cause the build-up of diseases, reduce yields and decrease flower quality. There are a range of more practical solutions that could reduce the cost of planting material. For example, carnations and gypsophila could be propagated at one specialist plant nursery in Jordan, which could supply all the growers. Alternatively, if growers want to import their own planting stock, they should purchase unrooted plants, which could then be rooted in Jordan. Currently they are importing rooted cuttings which are considerably more expensive.

The cost of rose plants cannot be significantly reduced in the short term. However, better information about the suppliers would help the growers choose more reliable and better quality sources. Up-to-date prices of rose plants would increase the negotiating position of the buyers. Growers are recommended to seek independent advice on the reputation of the rose plant suppliers as some supply better quality than others. For roses, it is important to choose varieties which will remain popular for seven to eight years, as they will be productive for this long. If unpopular varieties are chosen, they will have to be replaced sooner.

One of Jordan's potential competitors on the European market, Turkey, has encountered serious problems of diseases in its carnation planting stock. The Turkish farmers have not bought good quality plants, preferring to continually multiply their own flowering plants. This has led to a serious disease build up and a decline in flower quality. But most importantly, it has got Turkish carnations a reputation for poor quality. Jordan must not fall into the same trap.

Soil sterilisation: It is recommended that Methyl Bromide is used to sterilise the soil before planting roses and gypsophila. In the longer term, it may be necessary to sterilise the soil before planting all cutflower crops in Jordan.

Fertilisers and pesticides: The present knowledge and expertise for fertiliser and pesticide usage and application needs to be improved. It is imperative that an accurate and quick system for soil analysis is introduced for potential exporters. It is preferable to send samples to Holland for analysis. Sulphur evaporators, which are used for mildew control, should be tested in rose greenhouses. It is strongly recommended that proper training is provided to ensure that the workers who use pesticides handle them correctly. This also includes the correct disposal of containers.

Post-harvest handling: Appropriate grading criteria and post-harvest handling methods need to be introduced to improve cutflower quality. Post-harvest handling in Jordan is totally inadequate. In addition to being essential for export to Europe, better post-harvest handling will improve flower quality for regional and local markets. Post-harvest handling involves grading, bunching, application of flower preservatives, pre-cooling, cold store handling, packing and also the long day treatment of gypsophila after harvest.

Packaging: The dimensions of the boxes currently used for exports are unsuitable for maximising the weight loaded on an airline pallet. The box size should be changed. It is recommended growers agree on a standard size and the local manufacturers start to produce it. An ideal size would be the same as that used by the Kenyan exporters, ie 100 x 33 x 20 cm. A carton this size would have a volume air freight rate of 12 kg, and should contain 350 to 400 roses or carnations. It is also important that the boxes have a fully telescopic lid, which will help to strengthen the box.

CHAPTER FIVE
FINANCIAL ANALYSIS

In the previous chapter flower types which will grow well in Jordan and have a good market potential are recommended, ie carnations, gypsophila and roses. This chapter projects target cost of production data, gross margins and national production targets.

5.1 Target selling prices for recommended flower types

a) Europe

The most important factor affecting the gross margins of a cutflower is the selling price. The price of flowers in Europe varies considerably throughout the year - from the highs associated with occasion days, eg Valentine's Day, to the lows often associated with over-production, eg in the European summer. Also, for a given flower type, some varieties are in much greater demand than others. Flower quality can have a tremendous bearing on the selling price. Until the quality of Jordanian production is known it is difficult to predict accurately the likely selling price. However, assuming that there is a sensible investment in improving the technical knowledge and the post-harvest handling, then Jordanian exporters should comfortably achieve "average" prices.

The only source of accurate and reliable cutflower selling price information comes from the Dutch auctions. At the auctions, the price of every flower sold is recorded. In contrast, price information given from nearly every other source is only estimated. Average selling prices on the Dutch auctions for the three recommended flower types are given in Table 5.1.

Table 5.1: Dutch historical selling prices, 1991-93

Flower type	1991	1992	1993
	Dfl	Dfl	Dfl
Standard carnation	0.38	0.30	0.32
Gypsophila	0.52	0.47	0.50
Rose - large	0.48	0.52	0.50
- small	0.44	0.43	0.37
Average price 1991-93	Dfl	US\$	JD
Standard carnation	0.34	0.18	0.13
Gypsophila	0.47	0.25	0.18
Rose - large	0.51	0.27	0.19
- small	0.33	0.18	0.13

The selling prices given in Table 5.1 are average price data and therefore only represent guidelines to anticipated pricing. Premiums of at least 20 to 30% can be gained by suppliers of good quality. Conversely, poor quality is sold for much less than the average price. Therefore, when a new supplier enters the market it is important that the initial quality is good, to build up a reputation of quality. It should also be noted that the Dutch auctions are probably one of the lowest price outlets for flowers. Direct imports to the target markets generally achieve a 5 to 15% premium above Dutch auction prices.

There can be a considerable price variation between individual growers. Even though the quality may look the same, and indeed may even be given the same quality grade, the price from grower to grower can vary widely. This depends on the reputation the grower, or country, has developed. This reputation can have a significant effect on the buyer's perception of quality. Therefore, it is important for a grower to start, and continue, exporting with top quality to establish a good reputation.

Selling prices for individual varieties within a flower species can also vary significantly. In general, a new variety may have a price advantage due to low market volumes, but in the longer term, prices will naturally adjust to reflect its productivity and transportation costs. It is very important that Jordanian growers have a regular and reliable source of market information so they can make the correct choice of varieties.

Some importers have predicted for a number of years that gypsophila is over-supplied and is facing stiff competition from crops such as asters. In short, they have been suggesting that the prices will collapse. As yet this has not happened. Israeli exporters are still planting large areas of gypsophila, which is an indication that they believe the market will hold. As always, if there is a problem with the market being over-supplied, it is the price of the worst quality that drops first. Good quality is more likely to hold its price.

In the financial analysis, the average selling prices for the last three years on the Dutch auctions have been used. These targets are conservative; if the exporter aims for, and achieves, good quality, higher prices should be made. Also, better prices should be achieved if the flowers are sold direct to target markets such as the UK and Sweden.

b) Regional markets

Projecting the selling price into the regional market is more difficult. The Amman Flower Association has published some export prices. These are US\$ 0.16 per stem for standard carnations, US\$ 0.25 per stem for roses and US\$ 7.12 per bunch of gypsophila. It can be argued that if exports from Jordan to Europe increase, there will be more cutflowers available for export to the Middle East and this may bring prices down. Conversely, if the flower quality by improve due to better post-harvest handling techniques, then prices could be higher.

The main competition to Jordan in the regional market comes from Dutch exporters who offer a wider range of flowers. However, the Dutch exporters purchase their flowers in Holland and add on the cost of airfreight to the Middle East. Airfreight from Holland to the Middle East is about US\$ 1.7 to 2.4 per kg. This gives the Jordanian exporters a major competitive advantage. To take full advantage of this, Jordanian exporters need to offer a wide range of quality flowers all year round.

In the financial analysis, the selling prices in the regional market are taken to be the same as the growers are currently attaining (JD 0.11 for standard carnations, JD 0.18 for gypsophila and JD 0.16 for roses). It is assumed the affects of increased production on selling price is offset by better quality.

5.2 Costs of production

The costs of production and revenues are presented on a gross per hectare basis. In a multispans greenhouse, it is normally assumed that about 67% of the area is taken up by walkways. Therefore, if the reader requires to convert the cost and revenue to a per net hectare basis, it will be necessary to increase the figure by about 33%.

When calculating the costs of production, it is assumed that the yields, labour output and other efficiency factors are those that would be achieved under good management. It is recognised that to achieve these productivity targets, the current growers will need some technical assistance.

It is assumed that all the planting material is imported, free of duty, from Europe. Planting material for carnations is written off over two years, the roses over five years and the gypsophila over one year. The cost of labour is a basic JD 3.0 per day, with an extra JD 0.50 per day to cover the cost of supervision, housing, food etc. The number of labour days required by each crop assumes good yields. Agrochemical costs are based on what growers should be using rather than current usage.

Irrigation water is a major cost, and it varies considerably from farmer to farmer; in this analysis, the cost is assumed to be JD 0.45 per cubic meter. The cost of packaging is based on using a smaller box (100 x 33 x 20 cm) than is currently in use. The box is assumed to have a fully telescopic lid and would cost JD 1.40/box.

The two major costs are freight and marketing. In the central case analysis, the freight rate used is JD 0.60 (US\$ 0.85) per kg and the marketing costs are assumed to be 20% of the selling price. It will be possible to obtain lower freight costs in the short term but a rate of JD 0.60 is thought to be more realistic in the medium term. Depending on the marketing channels used, the European marketing costs can vary considerably but, for this analysis, 20% is felt to be the most sensible. If the exporters are given good, independent advice, they should be able to organise for their flowers to be sold direct to importers on specific target markets outside Holland. This would mean cheaper marketing costs, and higher prices. The effects of different freight and marketing costs are analysed later in this report.

In addition to the direct costs of production, some of the capital costs, eg greenhouses, irrigation equipment and plant support have been allocated on a per hectare basis. It is assumed that multispan greenhouses are used which would cost JD 58,000 per ha and would be written off over ten years. The plastic to cover the greenhouse structure costs JD 6,000 per ha and would need to be replaced, on average, every two years.

5.3 Gross margins

The costs of production, allocatable direct costs and revenues, and gross margins are given in Table 5.2. These demonstrate the potential profitability of the recommended cutflowers grown for export. The margins range from about JD 40,000 per ha for carnations to almost JD 100,000 per ha for roses.

It is assumed that when serious exports to Europe start, the main crop will be standard carnations. The projected gross margin, after some of the capital costs have been allocated is about JD 40,000 per ha. This could be increased if there is no import duty levied in Europe and if lower freight rates are negotiated. Both these situations could occur in the first one or two years. Even then, the profitability of this crop is dependent on sales from the regional market. This is not surprising as most of Jordan's competitors will have a longer production season supplying Europe. As noted earlier, the improved quality needed for the European market will help maintain the prices within the region and help guarantee the profitability of standard carnations

TABLE 5.2

PROJECTED GROSS MARGINS FOR CUTFLOWERS
EXPRESSED IN JD PER HECTARE

REVENUE PER HA	CARNATIONS GYPSOPHILA ROSES ROSES ROSES				
	STANDARD		Large	Medium	Small
Sales price - US\$ (Europe)	0.18	0.25	0.27	0.23	0.18
Sales price - US\$ (Regional)	0.16	0.25	0.27	0.23	0.18
Sales price - JD (Europe)	0.13	0.18	0.19	0.16	0.13
Sales price - JD (Regional)	0.11	0.18	0.19	0.16	0.13
Total Yield	1,600,000	1,200,000	1,200,000	1,660,000	2,210,000
Exportable yield to Europe	1,200,000	900,000	900,000	1,245,000	1,657,500
Exportable yield to Region	400,000	300,000	300,000	415,000	552,500
Revenue from Europe	153,360	159,750	172,530	203,309	211,829
Revenue from regional markets	45,440	53,250	57,510	67,770	70,610
Total revenue (US\$)	198,800	213,000	230,040	271,078	282,438
EXPENSES PER HA (US\$)					
Planting material	6,035	5,680	17,040	17,040	17,040
Land preparation	1,775	1,775	1,775	1,775	1,775
Labour @ Ush/month	13,348	9,656	11,857	11,857	11,857
Agrochemicals and fertiliser	5,400	3,600	5,200	5,200	5,200
Methyl Bromide	3,550		1,420	1,420	1,420
Water at JD 0.45 per cub metre	8,100	8,100	8,100	8,100	8,100
Packaging costs@JD 1.4	6,400	4,200	4,200	5,164	5,157
Freight @ JD/kg 0.60	28,800	14,850	18,900	23,240	23,205
Marketing costs 20.0%	39,760	42,600	46,008	54,216	56,488
Import duty (15%) 15.0%	23,004	23,963	25,880	30,496	31,774
Contingencies (10%)	11,317	9,046	11,450	12,801	13,024
Total expenses	147,489	123,470	151,830	171,310	175,040
GROSS MARGIN	51,311	89,530	78,211	99,768	107,398
Number of flowers per box	350	400	400	450	600
Average weight per box	14	11	14	14	14
OTHER ALLOCATABLE COSTS					
Greenhouse metal (10 years)	5,800	5,800	5,800	5,800	5,800
Plastic for greenhouse (2 years)	3,000	3,000	3,000	3,000	3,000
Irrigation dripline (5 years)	1,000	1,000	1,000	1,000	1,000
Wire plant support (5 years)	2,400	600	600	600	600
Total	12,200	10,400	10,400	10,400	10,400
MARGIN AFTER ALLOCATION OF SOME OF THE CAPITAL COSTS	39,111	79,130	67,811	89,368	96,998

NOTE The planting and establishment costs of roses have been written off over 5 years - carnations over 2 years

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The projected profitability of gypsophila is about double that of standard carnations, ie about JD 80,000 per ha. It must be noted that this crop is perhaps the most vulnerable to over-supply. The key to its success in Jordan is to make sure that quality is maintained. Technical support for this crop must be targeted towards maintaining the excellent field quality and installing good post-harvest handling techniques.

The rose gross margins are much higher, between JD 70,000 to 100,000 per ha depending on the varieties chosen. The higher gross margins are needed in part to offset its more expensive establishment costs. Also, the profitability of roses are less dependent on the regional market. There would certainly be a strategy for a grower to start exporting standard carnations and then with the retained profits to invest in rose production.

The central gross margin model has been re-run with some of the major inputs varied (Table 5.3). The sales price and yields were increased and decreased by 10%. The change in sales price had a larger effect than the change in yield, but even with 10% lower prices, cutflower exports still exhibit acceptable margins. If the freight rates are varied by 10%, the margins change by less than JD 5,000 per ha.

Table 5.3: The effect of varying some inputs on the gross margins

		Gross margin (JD/ha)		
		Carnations	Gypsophila	Roses (medium)
Central case		39,111	79,130	89,368
Sales price + 10%		54,618	95,744	110,513
- 10%		23,605	62,516	68,224
Yields + 10%		48,445	91,253	104,338
- 10%		29,777	67,008	74,399
Freight + 10%		35,943	77,497	86,812
- 10%		42,279	80,764	91,925
Marketing + 15%		50,045	90,845	104,278
costs - 25%		28,177	67,415	74,459
No import duty		62,115	103,093	119,865

It was noted earlier that the marketing costs can vary enormously depending on the channel selected. If the marketing costs are changed from the central case of 20% to 15%, the margins increase by JD 10,000 to JD 15,000. This demonstrates the importance of choosing the most appropriate method of marketing the cutflowers. Because of the importance of the choice of marketing outlets and the selling price to the profitability of cutflower exports, it is essential that the growers have good and reliable contacts in Europe to help them monitor the markets. When growers start to develop exports they are normally too busy with day-to-day production issues to give the markets the attention they require. Also, in the early years, growers can not afford an independent person to help with the marketing. For this reason, in a number of countries, aid agencies who are trying to help promote new export industries provide marketing services and up-to-date market information.

The removal of import duty into the EC has the biggest effect on margins. The removal of the duty would increase margins by between JD 20,000 to JD 30,000. This demonstrates the importance of increasing the quota of flowers Jordan can import into the EC duty free. The importance of getting the rate of duty reduced, or preferably removed cannot be over-emphasised.

5.4 The cost of establishing a cutflower project

One of the main concerns for potential flower growers in Jordan is the level of finance required to establish a cutflower project. The actual establishment costs will vary significantly from project to project depending on the specific capital costs associated with the site etc. This section will give some guidance to the total establishment costs of an **export orientated** cutflower operation. It therefore includes the cost of multi-span greenhouses, imported irrigation systems and imported planting material.

Table 5.4 lists some of the costs associated with establishing a cutflower venture. These establishment costs were simply calculated by adding all the first year's outgoings that have to be expended before significant revenues would start to accrue. In other words, it represents the maximum cash deficit the grower will have to finance to grow a hectare of cutflowers.

Table 5.4: Cutflower establishment costs (JD/ha)

	Carnations	Gypsophila	Roses
Planting material	12,070	5,680	85,200
Production costs	30,361	15,092	29,042
Packaging	6,400	4,200	5,164
Freight	4,800	2,475	3,873
Contingencies	11,317	9,046	12,801
Greenhouse (inc plastic)	64,000	64,000	64,000
Wire support	12,000	3,000	3,000
Irrigation	5,000	5,000	5,000
Total	145,948	103,493	208,080

In addition to the costs shown in Table 5.4, there are other costs associated with establishing, or expanding a cutflower venture. For example, it is necessary to have a suitable grading and packing shed and an appropriate cold store, and supplementary heating would be recommended to prevent the night time temperatures from falling too low.

The prompt removal of field heat is essential for exports. It should be removed within an hour or two of harvesting; therefore the cold store should be situated on the farm. On-farm cold stores are not too expensive; a modified refrigerated 20 foot container would cost about JD 6,000 to JD 9,000. A purpose-built cold store of sufficient size to handle about 4 ha of cutflowers would cost about JD 25,000. For a cold store to work efficiently, it is essential to have mains electricity.

Supplementary heaters would cost about JD 24,000 per ha. In addition, another JD 2,000 to JD 3,000 per ha would be required for other equipment such as sprayers etc.

Other capital expenditure would depend on the size of the planned operation and the proposed site. It could be necessary to purchase vehicles for the management and for transporting the produce to the airport. It may be necessary to have a refrigerated truck if the farm is too far away from the airport.

Given that the total capital expenditure will vary from farm to farm, it is difficult to predict accurately what would be the rate of return of an investment in a cutflower project in Jordan. However, it is estimated that the total expenditure for establishing a 4 ha cutflower carnation project is about JD 500,000; whilst a similar sized rose project would cost approximately JD 800,000. Therefore, assuming the margins in the central case in Table 5.2, the pay back time on capital expenditure for carnations would be about three years.

The equivalent pay back time for roses would be just over two years.

5.5 Target export production levels

Table 5.5 shows the number of flowers traded on the Dutch auctions over the last three years for the recommended flower types. The number of carnations have increased by 25% over the last three years. It must be noted that most of the carnations sold in Europe are direct traded and not marketed through the auctions. The number of roses sold on the auctions have increased dramatically, a 70% expansion over two years. Most of this expansion comes from the increased production from Africa. It is interesting to note that this increased supply of roses has not had a significant effect on average prices (Table 5.1), which is an indication of how the demand for roses is increasing. The volume of gypsophila traded on the auctions has decreased by about 30% in the last three years, mainly as a result of reduced production in Holland. The suppliers who replaced Dutch production do not sell as much on the auctions, but concentrate more on direct sales.

Table 5.5: Number of stems of certain flower types traded on the Dutch auction (millions)

Flower type	1991	1992	1993
Standard carnation	89.5	106.0	113.1
Gypsophila	72.8	63.6	52.9
Rose - large	46.5	54.4	94.5
- small	107.5	113.2	170.2

Given the volumes traded of the recommended flower types, it must be concluded that the market is sufficiently large that exports from Jordan in the short to medium term are not going to affect the prices in Europe. The exception may be gypsophila, which will face stiff competition from Israel. However, the Jordanian gypsophila should be better quality and will therefore be sold first and at a higher price. The expansion of this crop should be gradual and carefully monitored.

The main factor affecting the expansion of cutflower exports from Jordan to Europe will be the number of growers with sufficient technical and management skills as well as financial resources. There are a number of growers who would like to enter the European export market, but probably only a maximum of four who have the skills and resources to succeed. Given that they need to refocus their production techniques towards the European market, invest in multi-span and import new planting

material, it is unlikely that even the best growers will be seriously exporting before the 1995-96 season. However, it is hoped that some of these growers may be able to export some trial shipments in the 1994-95 season.

It is more realistic to expect commercial quantities to be exported in the 1995-96 season. It is assumed that four growers plant 2 ha in this season, which would be a realistic target. If the first season was successful, it would be reasonable to expect the growers to double their production to 4 ha each in the 1996-97 season. This would give a total area of 16 ha. Assuming that 70% of the area is carnations, 20% gypsophila and 10% roses, the area would produce about 18 million stems for export to Europe which would be worth about JD 2 to 3 million.

Once Jordan has an established cutflower export industry, it will become much easier for other growers to enter the market. By the end of the century, there could be between 10 or 20 export producers with, on average, about 6 ha of cutflowers. These figures are speculative and will only be achieved if the first exporters are successful and if technical assistance, advice with marketing, help with the removal of import duty into Europe etc. If these projections are achieved, this would produce between 90 to 180 million stems exported annually at the end of the century. This would generate a sales value of JD 10 to 20 million.

If these projections are considered in terms of freight capacity, this would be about 25 to 30 tonnes per week in the 1996-97 season. It would rise to about 120 to 240 tonnes per week by the end of the century.

CHAPTER SIX

ISSUES AND RECOMMENDATIONS

In the previous chapter, cutflower export targets were established. These targets are relatively modest but achievable. However, but a strategy needs to be developed to ensure that these goals are achieved. This chapter presents such a strategy. It also describes some of the "issues" that must be addressed to allow Jordan to realise its full potential for exporting cutflowers. It is not the intention of this report to produce a long list of "problems" facing exporters, because many of them can be solved by good, determined managers. However, it focuses on the main issues that give Jordan a competitive disadvantage when compared with other countries competing on the export market.

6.1 Strategies for development of cutflower exports

The current growers of cutflowers have sold most of their produce on the local market. As imports were banned, some of the growers made a lot of money satisfying this local demand. These profits encouraged others to start growing flowers which has resulted in over-production at certain times of the year. The growers have started to look at the export market for selling their surpluses. The evolution for entering the export market is similar to the fruit and vegetable exports to the regional market. However, it must be stressed that cutflowers are a more perishable crop than most fruit and vegetables; it is a higher priced product and is regarded as more of a luxury than fruit and vegetables. Therefore, to optimise cutflower exports it is necessary to have a different strategy and approach than for fruit and vegetables.

Another factor that must be appreciated before an appropriate strategy can be developed is that growers will probably make more money per unit ground area, at least in the short term, by selling their flowers on the local market than by exporting. Similarly, they will probably make more money on the regional export market than the European market. The stimulus for entering the European cutflower export trade should be to sell much larger volumes of product to a more stable market. Therefore, growers must be aware, before they start developing European exports, that they will make their profit by marketing larger volumes rather than by making a greater margin per unit ground area. Perhaps later in the medium to longer term, when more smaller producers are attracted to cutflower production for the local market, the margins will be squeezed further, and the exports will be more profitable per unit ground area.

It must also be appreciated that to develop exports, growers will have to invest more money and be more technically advanced than the farmers who are growing for the local market.

In the long term, the European market represents the largest and most stable export opportunity for Jordanian exporters. The most appropriate market window for selling Jordanian produce in Europe is the winter, ie when prices are higher and import duty is lower. The regional market offers good short to medium term opportunities, but in the longer run, Jordan may find it difficult to compete with Dutch exporters. If growers adopt the quality and agronomic standards required for the European market, it will increase their competitiveness, and profitability, in the regional markets.

It has been suggested that exporters should target the Eastern European market. However, the airfreight connections to Eastern Europe are very limited and erratic, while the market is volatile and competitive. Jordan has no real competitive advantage selling to this market. However, if Jordanian exporters focus their production and quality towards the European market, then they could sell some of their production in Eastern Europe on an opportunistic basis. It is not recommended that they target Eastern Europe as a prime market.

Considering that cutflower production in Jordan is a new industry, good progress has been made towards achieving export quality and competitive yields. However, if the growers are to compete effectively on the export market, they will need appropriate technical advice. Without this, they do not have the expertise to produce good yields and quality **consistently**. It is advised that technical assistance is made available to help growers establish a cutflower export industry. It is strongly recommended that this help is targeted to the limited number of growers who have the financial and management resources to become successful exporters. These initial potential exporters must have the resources to grow at least 4 ha of cutflowers. Also, these growers must be aware that their prime market is in Europe and all technical decisions are made with this in mind. If growers regard exports to Europe as a method of selling production that is surplus to the local market requirement, then they should not receive technical support.

It is very important for the long-term development of cutflower exports that the first growers who target their production for the European market are successful and establish a reputation for good quality. If the first exporters are successful, it will create further market demand for Jordanian produce. This, coupled with the

"trickle down" effect of technical advice and experience gained by the first serious exporters, will enable more growers to enter the export market. In the short to medium term, small growers will not have the financial resources, technical skills nor sufficient presence in the market place to export successfully. They may be able to export later.

The strategy for helping establish a cutflower export industry must focus on a limited number of growers. It should also focus on a limited number of crops which have a good market potential and can be grown well in Jordan. The recommended crops are standard carnations, gypsophila and roses; but the main emphasis should be on the carnations. Once Jordan has established cutflower exports to Europe, it will be possible to increase the range of crops exported. However, it must be stressed that the best way of establishing the industry is to focus on crops which have a large market. In addition, it is suggested that export production should initially be concentrated in the Amman area. Later, it will be possible to grow export crops in a wider range of locations.

It is important to develop an effective marketing strategy. The recommended crops were chosen partly because of their suitability to the Jordanian climate, but also because they can be sold directly to the target market and not via Holland. This will result in higher prices and smaller marketing costs. If crops with a smaller market share are grown, the only practical method of marketing them is via the Dutch auctions. Once the channels direct to the target markets have been established, crops with a smaller market potential can be exported directly as an "add on" to exports of the larger volume crops. The advantages and disadvantages of the marketing channels were discussed in Chapter Three. However, if Jordan adopts the recommended choice of export crops, it has an opportunity to establish direct sales.

It is recommended that trial shipments should be made during the 1994-95 growing season. If these trial exports are less than about 1.5 million stems, then no import duty will be levied, which will help maintain profitability. If trial exports are made in the 1994-95 export season, it will strengthen the Government's negotiating position to have the duty-free quota significantly increased. Assuming these trial shipments are successful, then commercial production could be established in 1995-96 growing season. This would be further expanded in the following season. Expansion after 1995-96 would be both in terms of area and the introduction of other flower types and possibly the inclusion of other locations.

To summarise, the proposed strategy for the development of cutflower exports is to

- a) target production for the European market. Sell opportunistically into the regional and East European markets;
- b) concentrate on three main flower types to establish the industry;
- c) give technical advice to a limited number of growers, about four, to ensure that the first exports are successful. These growers must be dedicated to producing for the European market;
- d) target the marketing towards direct selling in countries other than Holland, and
- e) develop trial areas for the 1994-95 season. If these trials are satisfactory, then commercial levels of production would be introduced for the 1995-96 season.

6.2 Technical assistance

The most beneficial input aid agencies could make to help establish a successful cutflower export industry would be to give technical assistance. It is recommended that regular consultancy visits to Jordan are financed to help potential exporters achieve competitive yields and high quality flowers. As noted before, it is recommended that this assistance is concentrated on a maximum of four farms. It would be necessary for at least four visits per year of about 10 days each. These visits would focus on improved greenhouse construction, irrigation and fertilisation, establishing an appropriate system for soil analysis, ensuring good quality supplies of planting material, good agronomic management techniques, disease control etc. During the early visits the consultancy input would help with designing appropriate cold stores and packing houses and advise on the operation of heating systems. It is also necessary to have a consultancy service available to assess the quality of the produce when it arrives at the marketplace and to inspect plant material before it is despatched from Europe.

If Jordan is to realise its potential in the European cutflower market, it is essential that the first growers are successful. This will make it considerably easier for subsequent exporters to enter the market. It has already been noted that two small trial shipments have given Jordanian flowers a bad reputation at one of the major Dutch auctions. If the exporter had received better advice on post-harvest handling, and acted on it, this poor reputation could have been avoided.

Improved knowledge on post-harvest handling would be of particular benefit to the current producers. The use of cold stores, better packaging techniques and the correct use of the preservative Silver Thio-Sulphate would improve the shelf life and flower quality dramatically. If the standard box size was changed to the same as the Kenyan box, it would facilitate a much better packing rate on airline pallets. The Kenyan box is 100 x 33 x 20 cm. Demonstration samples can easily be obtained.

Improved greenhouse construction could help all growers improve productivity. Also, given the high cost and scarcity of water, better designed greenhouses could help recycle rainfall into the irrigation system.

It would be hoped that after two years, production manuals would be produced for all the targeted crops to help other growers to enter the export market. These manuals would be written based on the practical experience gained from working with the first batch of exporters. It would be expected that much of the experience gained would be disseminated, both formally and informally to other growers.

There is a considerable variation in the costs, and effectiveness of different marketing channels. It is important that the growers have an opportunity to meet some of the importers and understand the different marketing systems. They would then be in a position to decide their own marketing strategy. In addition, an organised visit to the marketplace will show growers the quality standards of their competition. It is recommended that a study tour is organised to meet potential European importers. Ideally, this should be arranged for the end of October to early November 1994, when the growers should be able to have samples of their flowers available to show importers. The visit should include Holland, the UK, Germany and Sweden. It should also be organised to coincide with a major flower exhibition in Holland during the second week of November.

It has been noted earlier that market preferences for colour and qualities change quickly. It is often very difficult for new produces to keep up with the latest market information. Therefore, it would be extremely beneficial for the exporters if a regular market information service could be provided.

If the above technical assistance is not provided, it will be extremely difficult for the exporters to develop Jordan's potential to supply the European market. If carefully targeted assistance is given, it will enable Jordan to compete more effectively with other countries.

As a first step towards assisting some of the more serious growers with establishing exports to Europe, the

consultants involved with the production of this report will assist them in producing an action plan. This document will be a logical guide to help them address some of the issues associated with setting up an export industry to Europe.

6.3 Import duty

Perhaps the major financial impediment to the large-scale expansion of exports to Europe is the small duty-free quota allocated to Jordan. When this quota is fulfilled, a duty of 15 or 20% will be levied. It is essential that the quota is increased so Jordan can compete on an equal status with African and South American countries and neighbouring countries such as Israel. The Mediterranean Agreement, which regulates the size of the quota should be renegotiated by November 1995. It is imperative for the cutflower export industry that the Government negotiates a significantly increased quota. Using the projections given in this study, AMO should be able to provide useful information justifying a significant increase in the quota.

6.4 Cold storage at the airport

If the cutflower export industry does expand and the growers invest in good on-farm cold storage, it is essential that there is an efficient and effective cold store at the airport. The current plans for building an airport cold store for fruit and vegetables is inappropriate for cutflowers. This is because most fruit and some vegetables give off ethylene. Cutflowers must be kept in a different room and preferably in a different building. It is recommended that when cutflower exports from Jordan start to expand, an aid agency considers building a separate cold store at the airport. To become a serious competitor in Europe and to improve market share in the regional market, it is essential to have an efficient and appropriate airport cold store to help maintain the quality standards. It is anticipated that it will be necessary to build this cold store in 1995, when the first season's trials have proven successful.

APPENDICES

SCOPE OF WORK

APPENDIX 2.1

Destination	Carrier	Plane	No/week	Comments
a) Europe				
Amsterdam	RJA	L15	7	Non-stop
	KLM	310	5	2 x non-stop 3 x one-stop
Athens	RJA	727	2	Non-stop
Berlin	RJA	310	2	Non-stop
Brussels	RJA	310/L15	2	via Paris
Bucharest	Tarom	B15	varies	route varies
Frankfurt	RJA	320/L15	4	2 x non-stop 2 via Paris
Geneva	RJA	310	2	Non-stop
Istanbul	RJA	727	2	1 x non-stop
	TA	DC9	1	Non-stop
Larnaca	RJA	727/310/320	3	Non-stop
	CA	320/B111	2	Non-stop
London	RJA	310	6	4 x non-stop 2 via Berlin
Maastricht	RJA	707 freighter	3	
Moscow	Aeroflot	various	1	Variable and erratic

af

Destination	Carrier	Plane	No/week	Comments
Paris	RJA	310/L15	3	Non-stop
	AF	310	3	One-stop
Rome	RJA	727/310	3	Non-stop
	AI	M80	2	Non-stop

Key:

RJA	Royal Jordanian Airlines
KLM	Royal Dutch Airlines
AA	Austria Airlines
AF	Air France
AI	Alitalia
TA	Turkish Airlines
CA	Cyprus Airways
Tarom	Air Rumania
L15	Lockheed Tristar 10/15
310	Airbus 310
320	Airbus 320
707 freighter	Boeing 707 freighter
727	Boeing 727
M80	MacDonald Douglas M80
DC9	MacDonald Douglas DC9
B111	BAC 111

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Destination	Carrier	Plane	No/week	Comments
a) Regional market				
Abu Dhabi	RJA	320/310/727	5	Non-stop
	Gulf	320/767	2	Non-stop
Aden	RJA	320	1	Non-stop
Bahrain	RJA	L15	3	2 x non-stop
	Gulf	320	3	2 x non-stop
Beirut	RJA	320	4	Non-stop
	MEA	707/310	4	Non-stop
Cairo	RJA	727	7	Non-stop
	EA	737/320	6	Non-stop
Casablanca	RJA	310/320	2	via Tunisia
Damascus	RJA	727	4	Non-stop
Dhahran	RJA	310	2	Non-stop
Doha	RJA	727	3	via Bahrain
Dubai	RJA	310/L15	6	3 x non-stop
	Em	310/AB3	3	
Jeddah	RJA	310/L15	4	Non-stop
	Gulf	L15	1	Non-stop
	Yem	L15	2	Non-stop
Khartoum	Sud.A	310	1	Non-stop
Muscat	RJA	320/310	2	Both one-stop
	Em	310	1	Non-stop

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Destination	Carrier	Plane	No/week	Comments
Riyadh	RJA	310/320	2	Non-stop
Sana'a	RJA	L15	2	Non-stop
	Yem	727	3	Non-stop
Tunis	RJA	310/32	2	Non-stop

Key:

RJA	Royal Jordanian Airlines
Gulf	Gulf Air
MEA	Middle East Airlines
EA	Egypt Air
Em	Emirates
Yem	Yemani Airlines
Sud.A	Sudan Airlines

310	Airbus 310
320	Airbus 320
727	Boeing 727
737	Boeing 737
767	Boeing 767
L15	Lockheed Tristar
AB3	Airbus 300

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APPENDIX 2.2

DUTIES AND TARIFF QUOTA ON CUTFLOWERS IMPORTED INTO THE EC



EUROPEAN COMMISSION

DIRECTORATE GENERAL FOR AGRICULTURE
INTERNATIONAL AFFAIRS
VI-H-3

Brussels, 4.3.1994

By fax :To : Mr Andrew Sergeant, High Value Horticulture
44 225 48 06 55JORDAN

Nomenclature No 0603.10 - Flowers and buds of fresh flowers

Initial tariff quota 50 T

1992	50 + 3%	= 51,5
1993	50 + 6%	= 53
1994	50 + 9%	= 54,5
1995	50 + 12%	= 56 Tonnes

- Within the framework of the customs tariff 0 as from 1.1.93
- For quantities imported outside of the quota the common customs tariff rights apply, i.e :
 - from 1st June to 31st October 20%
 - from 1st November to 31st May 15%
- The level of the import price (for roses and carnations) should be at least equal to 85% of the price level applied within the European Union during the same periods (Official Journal L297 - 21.10.87, p.27).

Appendix 3.1

The 20 most popular cutflowers sold on the Dutch auctions in 1991

	Value (US\$ million)	No of stems (millions)
1. Rose	427.6	2,223
2. Chrysanthemum	350.9	1,175
3. Tulip	144.7	851
4. Lily	130.5	307
5. Freesia	95.9	569
6. Carnation	94.2	1,002
7. Gerbera	80.8	318
8. Cymbidium	61.8	60
9. Alstroemeria	37.8	203
10. Gypsophila	38.9	209
11. Iris	31.9	209
12. Aster	22.1	110
13. Anthurium	22.1	21
14. Daffodil	14.5	162
15. Gladioli	13.3	111
16. Amaryllis	12.7	55
17. Bouvardia	11.9	59
18. Statice	10.5	163
19. Lisianthus	10.3	31
20. Matricaria	8.6	39

APPENDIX 3.2

APPLICATION FORMS AND CONDITIONS FOR SUPPLYING A DUTCH AUCTION



Aalsmeer

General information
=====

Aalsmeer, Januari 1993

Page 1

How to become a supplier of imported cutflowers to the V.B.A.

1. Apply to the Management for a permit

Conditions:

- a. The products to be supplied must form an interesting supplement to the V.B.A. package
- b. The supplier must ensure regular supply, so that auction can take place four times a week
- c. The products should be of good quality
- d. The V.B.A. imports on consignment basis only
- e. The V.B.A. imports only on the basis of pre-paid freight costs.

2. An application for the auction of imported flowers should be submitted to:

The Management of the V.B.A.
Attn. Import Department
Postbus 1000
1430 BA Aalsmeer - THE NETHERLANDS
tel.: 31.(0)2977.32055 fax: 31.(0)2977.22498

3. Dispatcher (clearance agent)

The dispatcher deals with the financial and administrative aspects of import duties and Customs facilities. He also takes care of any transport from Schiphol to the V.B.A.

The dispatcher advised by us is:

J. v.d. Put
Postbus 75556
1118 ZP Schiphol-Zuid - THE NETHERLANDS
Tel.: 31.(0)20.6555100 fax: 31.(0)20.6532646

4. Bank account

The supplier will inform the V.B.A. in writing as to his bank (address in full) and his account number.

The result will automatically be transferred to your account once a week, after the costs have been deducted.

5. Auction Costs

The V.B.A. charges the following costs:

- a) Auction commission 6,5 %; 7,5 % or 9,5 % (depends on the relationship)
- b) Lot levy of Dfl. 4,00 per lot
- c) Trolley charge of Dfl. 4,00 per Trolley
- d) P.V.S. levy (for promotion), 0.45%
- e) Yearly subscription-fee (at this moment dfl 150,-)
- f) Any other costs like auctionlists, use of information-office or tele-VBA and rental of buckets and transportmaterials.

6. Handling Costs

The costs for unpacking import flowers are calculated per stem. On request we will send you a survey of these costs.



Aalsmeer

APPLICATION FOR THE AUCTIONING OF IMPORTED PRODUCTS, SEASON 1993/1994

The undersigned:

Name Supply nr.

Address

Postal code and city

Country

Phone nr Fax nr

(in case the applicant is not the same as the grower of the products, name, city and country of nursery must be state and the grower have to sign as well):

Name nurseryCity and country.....

request the Cooperatieve Vereniging "Verenigde Bloemenveilingen Aalsmeer" (V.B.A.)B.A. (Cooperative Flowerauction Aalsmeer) -hereafter to be referred to as "VBA"- permission to auction the products mentioned below and upon condition according VBA import-auctionrules:

Product	HA in culture	Quantities to VBA in stems	% of total production to VBA	period
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk

For Roses, Standard/ Spray Carnations and Alstoemeria, a separate list as featured above must be enclosed for each variety.

Place and date:/.....

Signature of applicant: Name of applicant.....

Signature of grower:..... Name of grower

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Aalsmeer

General information
=====

Aalsmeer, Januari 1993

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Aalsmeer

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Name Supply nr.

Address

Postal code and city

Country

Phone nr Fax nr

(in case the applicant is not the same as the grower of the products, name, city and country of nursery must be state and the grower have to sign as well):

Name nurseryCity and country.....

request the Cooperatieve Vereniging "Verenigde Bloemenveilingen Aalsmeer" (V.B.A.)B.A. (Cooperative Flowerauction Aalsmeer) -hereafter to be referred to as "VBA"- permission to auction the products mentioned below and upon condition according VBA import-auctionrules:

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.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk
.....	wk/wk

For Roses, Standard/ Spray Carnations and Alstoemeria, a separate list as featured above must be enclosed for each variety.

Place and date:/.....

Signature of applicant: Name of applicant.....

Signature of grower:..... Name of grower

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