A View of International Competitiveness in the Flower Bulb Industry

February 1992
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Contents

Reading guide

To enable you to grasp the essential facts in this report quickly we would advise you to read the following chapters:

1.3 Research method
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6. International competitiveness
7. Strategy

If you are interested in a particular country read the summary and prospects relating to this in section 5.

Foreword

The Dutch horticultural industry is continually confronted with new challenges. The nineties will be dominated by a change from product-based to demand-oriented thinking. This will have consequences for every branch of the sector: for the breeder, the grower, the auction business, the trader and the shopkeeper. Against this dynamic background and the explicit presentation of the Dutch horticultural industry at the Floriade, Rabobank has asked the Agricultural Economic Institute (LEI) to chart the country's competitive strength in the flower bulb sector.
This report also indicates what strategic options are available for expanding the position. The object of this report is to give you some insight into the significance of market-oriented thinking and action. In addition, it aims to offer some pointers to help you shape your ideas about the near future. Everyone will have to fill in the details for themselves.
The research and analysis were carried out jointly by the LEI-DLO and Rabobank.
We are grateful for the active contribution of the following organizations in compiling this report:

- Bond van Bloembollenhandelaren (Flower Bulb Traders Association), Hillegom
- Bloembollenbureau Cebeco (Flower Bulb Agency), Lisse
- CNB (b.a.), Lisse
- Hagelunie, Leidschendam
- Hobaho B.V., Lisse
- IBC, Hillegom
- IKC, flower bulbs department, Lisse
- KAVB, Hillegom
- PVS, The Hague

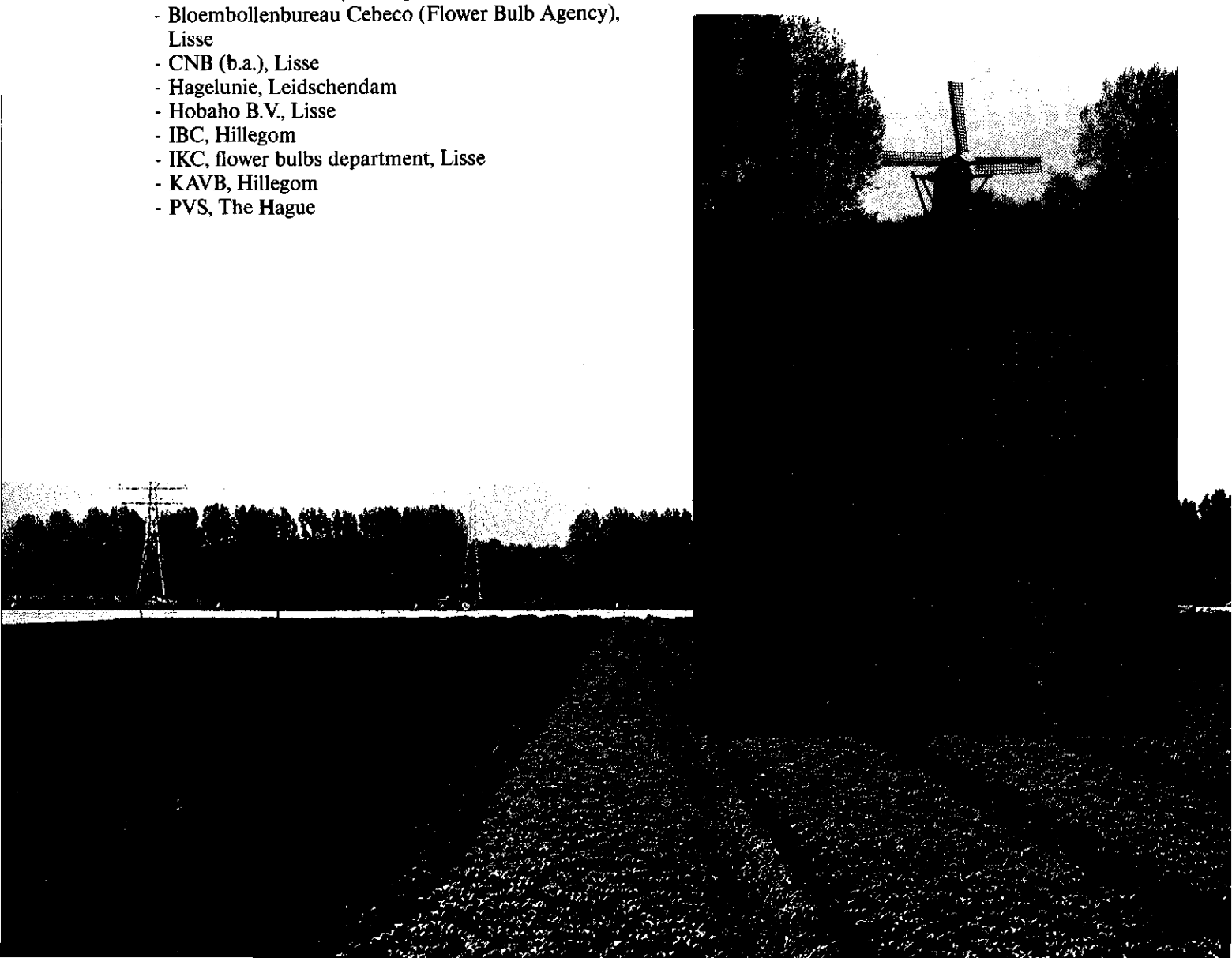
We would like to thank all concerned sincerely for their contributions.

Eindhoven,
Rabobank Nederland

H.H.F. Wijffels

The Hague, April 1992
Agricultural Economic Institute-DLO

L.C. Zachariasse



1. Introduction

1.1 Positioning

The flower bulb sector comprises the production and trade in bulbous and tuberous plants, rhizomes and root tubers. The main representatives are: the tulip, lily, narcissus, iris and hyacinth; of the tubers: the gladiolus and begonia; of the rhizomes: lily of the valley and of the root tubers: the dahlia. Flower bulbs account for 10% of the total international export value of all the ornamental plants cultivated worldwide.
There are two segments. In the dry sales segment bulbs are sold for planting by the end user and in the forcing segment flower bulbs act as the starting material for the flower nursery. Both segments are investigated in this study. Because of the great significance of forcing, the developments in the flower bulb sector are also included.

1.2 Competitive position of flower bulbs

In the worldwide production and sale of flower bulbs, significant changes are occurring in the competitive relationships. European integration, democratization in Eastern Europe and the liberalization of world trade in connection with the GATT negotiations will inevitably have consequences. A number of 'traditional' markets are displaying signs of saturation. This affects profit margins and the power relationships in the production chain.
In the Netherlands, in particular, new environmental legislation will influence the current methods of production.
The many changes make it difficult to obtain a good insight into the prospects for the bulb-growing industry. Insight is essential for making a timely response to opportunities and threats. Within the context of the Floriade International Horticultural Exhibition we have examined to what extent various forces affect the competitive relationships in the bulb-growing industry in the world.

1.3 Research method

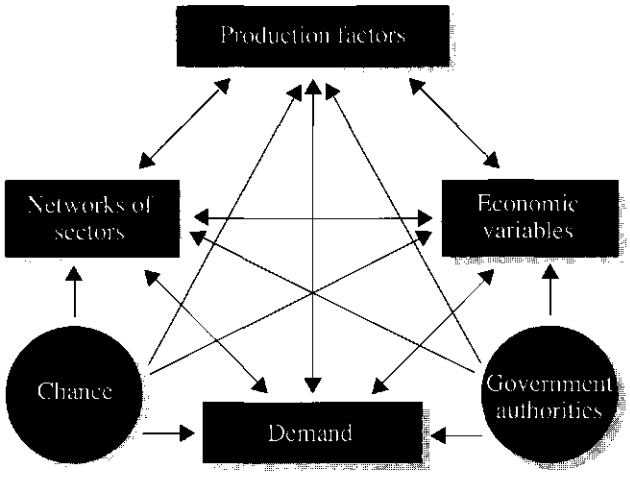
The theories of the American economist Porter have been used in assessing the competitiveness of the Dutch bulb-growing sector. The strength of a sector is not only determined by a low cost price, but by a variety of aspects.

The following have been examined in this study:
- Production factors such as raw materials, climate, unskilled labour and capital. These factors are basically present and have a great effect on the cost price. The infrastructure, skilled labour, research, education, information, telecommunication structures and so on are also important. These factors have to be created by man and influence efficiency.
- Domestic demand. The nature, scope and development of the domestic market have a great influence on the strength of a sector. A critical domestic market strengthens competitiveness; it keeps the sector alert and constitutes the basis for a high level of innovation.
- The network of sectors, which means the extent to which the various links in the chain utilize each other in order to achieve an effective approach to the market. The use of ideas from other sectors is also examined.
- Government authorities. Here we examine what part is played by government authorities in developing (or curbing) competitiveness.
- The economic variables, such as the entrepreneurial

spirit, international orientation, ability to cooperate, management culture, etc.
- Chance. Unpredictable factors such as changes in exchange rates, political decisions, technical breakthroughs, wars, etc. In evaluating a sector it is important to distinguish whether its existing position is due to its own merits or whether it has become strong as a result of chance events.

Analysing sectors or countries on the basis of these aspects results in a picture of their international competitiveness. In this respect, it is conceivable that certain aspects will reinforce each other, but also counteract each other.
The report as a whole gives an insight into where the bulb sector is strong and weak and thus offers avenues for improvements.

Figure 1: Porter's determinants of national advantage



1.4 Structure of the study

The first chapters provide a brief overview of the development of demand (chapter 2), supply (chapter 3), and the trade (chapter 4) in flower bulbs at world level. Next, chapter 5 analyses the international competitiveness of the main countries concerned with flower bulbs and which play a part in international production and trade.

The positions of the various countries described are weighed against each other in chapter 6. Finally, in chapter 7 conclusions are drawn and possible strategic options are presented which could result in the strengthening of the competitive position of the Dutch sector.

The investigation was concluded in December 1991.

2. World demand

2.1 Introduction

On the basis of the data for the nine main consumer countries the production value worldwide is estimated to be a minimum of 1.6 billion guilders at wholesale level (1990).
The worldwide range is derived from exports from the Netherlands. This gives a fairly good picture for most countries because the Netherlands has an 89% share in the world trade in bulbs. Here, there is a slight undervaluation for the lily, narcissus and gladiolus, because in some countries - in contrast to the Netherlands - domestic production mainly relates to these products.

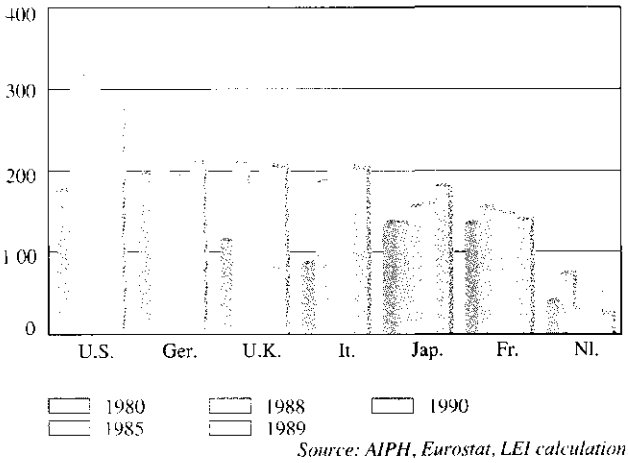
2.2 Development of consumption

Expenditure (measured nominally at wholesale level) on flower bulbs in the nine main countries has doubled in the past ten years from *f* 600 million to *f* 1250 million.
These expenditures relate both to dry sales and sales for forcing purposes. Generally speaking, the range has become wider and the consumption of varieties with a large market share has become smaller. The United States is the largest consumer of flower bulbs. Germany, the United Kingdom, France and Italy are also important users for both forcing and dry sales. (See figure 2.)

In the early spring, it seems that flower bulbs, with their colourful blossom, have little competition from other plants in the gardens. Despite this, dry sales slowed down at the end of the eighties (a recovery occurred in most countries in 1990), while in that period sales efforts clearly increased.

Figure 2: Flower bulb consumption in the main countries

mill. guilders

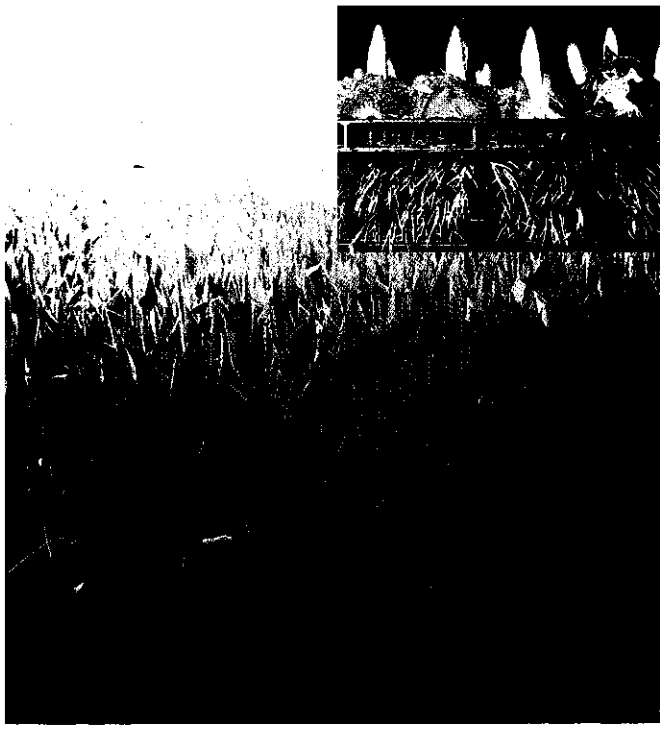


Source: AIPH, Eurostat, LEI calculation.

This slowdown is still noticeable in Germany and may be attributed to the following causes:
- greater competition from other products
- short flowering period compared with other plants
- the short time for which bulbs are available and
- sometimes failure to bloom.

Thus for example, the value of Dutch tree nursery exports has risen by 74% in the past ten years and that of flower bulbs by 34%. The market share of dry sales compared with that of the tree nurseries fell from 47% to 39% in this period.
Flower bulbs are bought in over 100 countries, the EC countries being the main sales area with 60% of all expenditure on flower bulbs in 1990. The market share in 1980 was still 65%.

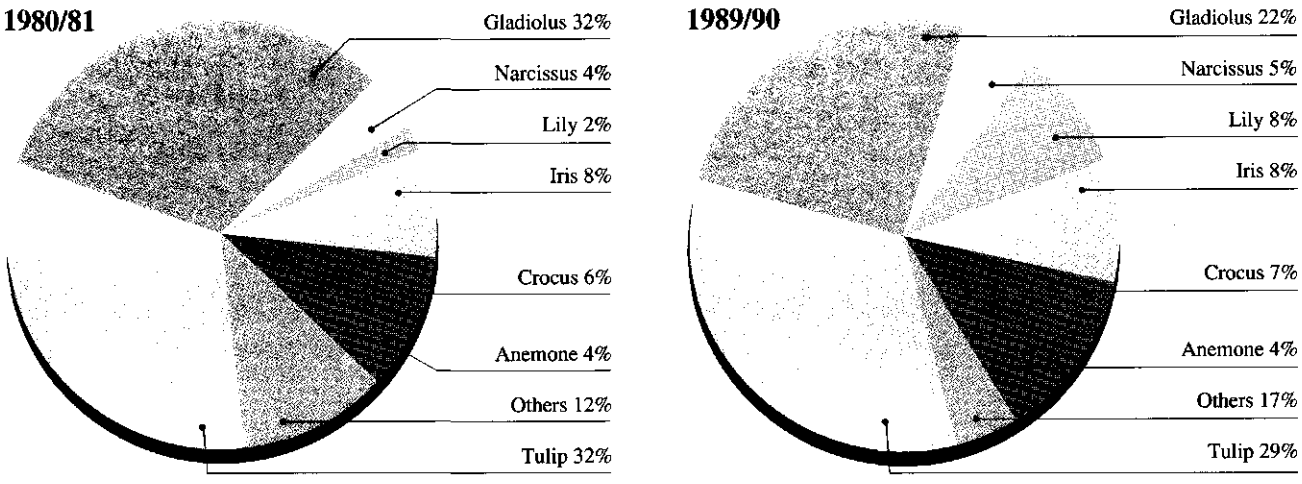
In most countries the bulb is a fairly unimportant product, however. Its share in shop sales on an annual basis is low. Important sales channels for flower bulbs are supermarkets, mail order firms and garden centres. The supermarkets' share is progressively increasing. Partly because of this, the number of points of sale is rising sharply. A disadvantage of selling through supermarkets is that up to now their employees have little knowledge of bulbs and the keeping conditions are relatively poor.
Forcing is an essential part of the flower bulb sector. Depending on how this is defined, the share in most countries is several per cent (if only the protected and forced crops are counted as part of this) to often more than half of the number of flower bulbs offered for sale. The share of bulbs intended for forcing has become increasingly important in recent years. Worldwide demand for flowers is rising (3.5% per year) as a result of the increasing prosperity in a large number of countries. Bulb flowers have an important share in the cut flower market (e.g. in the Netherlands 15% by value), particularly in view of the short bulb season, especially in the case of the tulip and narcissus. Although the spread of the supply over the year is increasing, the share of bulb flowers in the cut flower range is decreasing except for the lily. In the past ten years auction turnover in the Netherlands has increased as follows: cut flowers by 126%, the narcissus and tulip by 116% and the lily by 144%. Turnover in other bulb flowers has dropped. This development is mainly caused by the vigorous innovation in the floristry world.



2.3 Developments in the range

Tulips, lilies and gladioli are by far the most important products. The share of gladioli is decreasing. The lily is the main grower. Its share in Dutch exports has increased from 2% to 8% in the past ten years (on a unit basis).
The tulip has a strong and almost unvarying share. The seven main bulb varieties have a share of over 85% in the world consumption. The other plants, including the dahlia and lily of the valley (Convallaria), are becoming more important, however.
Their share increased from 12% to 17% in the period 1980/1981 - 1990/1991. (See figure 3.)

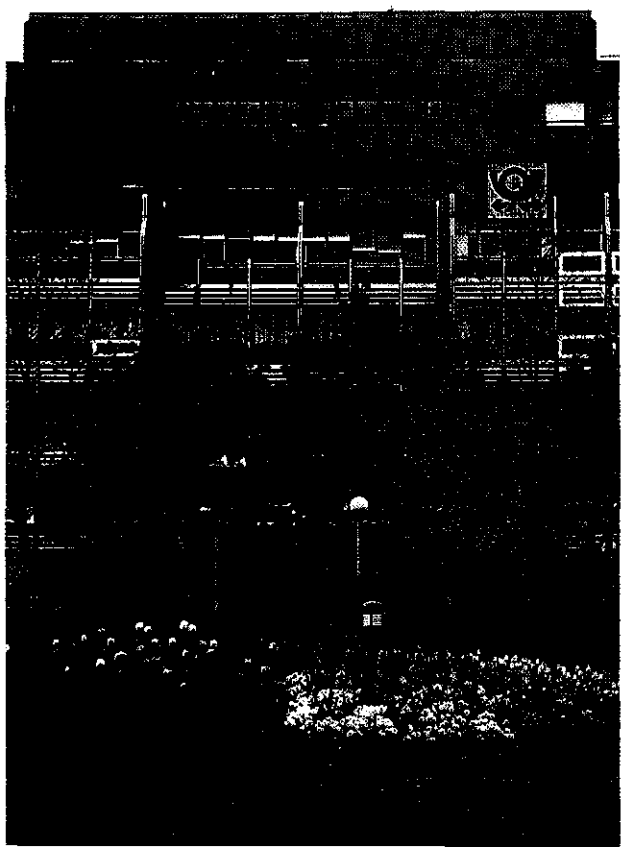
Figure 3: Shares of the various species in the world consumption of flower bulbs (in units).



Source: P.V.S.

2.4 Trends and market segments in the main consumption centres

The growth in turnover in the flower bulb sector in the eighties was mainly generated by the lily and in a limited number of countries (USA, Italy and Japan).
In various markets the rise in sales was accompanied by lower prices for products other than the lily.
The USA, UK, Germany, Italy and Japan are the main international demand centres for flower bulbs in terms of size.
The USA, UK and Japan are dealt with in chapter 5, as are other large exporting countries.



Germany
For a long time, Germany was the main consumer country, 36% of the consumption being used for forcing and 64% for dry sales. As a result of a slowdown in both market segments the country has increasingly lost in importance. The possible cause of this is the shift in demand to products other than those in the ornamental plant sectors. The point is that the German consumer is satisfied with the supply, the range and the pleasure it provides, but is only moderately satisfied with the end result and the price. The shift to other sales channels, such as the chain store business, which requires different marketing techniques, also has an influence. This calls for adjustments which cannot be immediately achieved.
After the reunification of the two Germanys the sale of bulbs from abroad again rose in 1990 (Dutch exports went up by 13% in the 1990/91 season). The demand for dry bulbs in the former East Germany increased sharply. Domestic production could not satisfy this higher demand because bulb production was geared to the forcing segment. It is still not clear whether the increased demand in the former East Germany is structural. In the former West German part of the country consumption is still declining.

85% of all the bulbs in the dry sales segment go to families and 15% to companies and government authorities. About 30% of families buy bulbs every year. This percentage has fallen slightly in recent years. Important purchasing locations are mail order firms, supermarkets and garden centres, which together account for over 50% of the sales. The supermarkets' share is increasing and that of the mail order houses is falling.

Most of the bulbs are planted in the garden (73%). They are also planted in cemeteries (11%) and balcony flower boxes (7%). All households spend an average of five guilders per year on bulbs, paying about twenty-five Dutch cents per bulb.
The main plants exported from the Netherlands to Germany are the tulip (39%), the gladiolus (12%), the crocus (10%) and the narcissus (8%). The share of these plants has not changed in recent years.

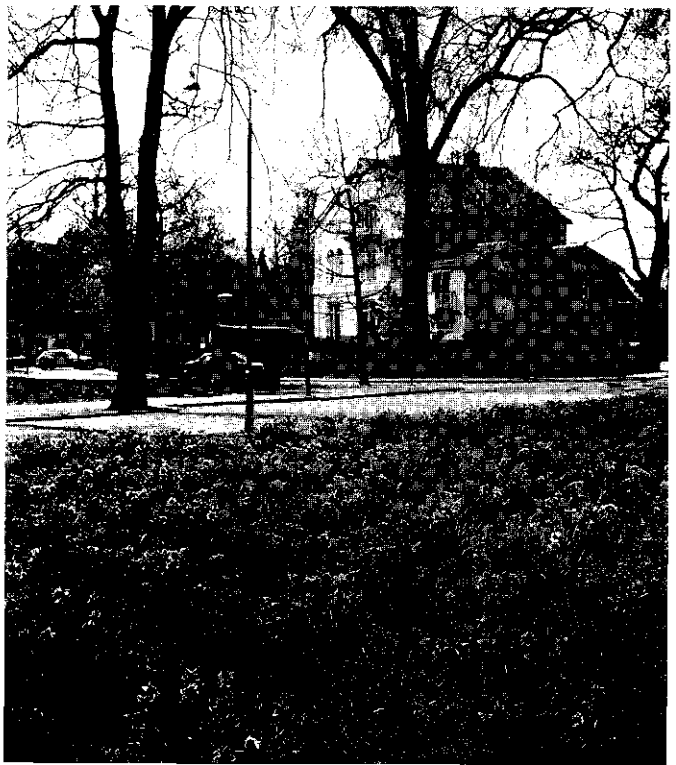
Italy
Italy is pre-eminently a forcing country. This means that the bulbs imported into and produced in Italy largely reach the consumer as bulb flowers and their importance is continually increasing in Italy. The share of dry sales has decreased by 5% to 15% in the space of ten years.
The market segment for funeral flowers is relatively large in Italy, with gladioli playing an important role. Sales are shifting from gladioli to lilies, however. The share (volume) of the gladiolus, which was still 52% in '85/'86, fell to 50% in '90/'91. The share of the lily rose by 13% to 20% in this period. The share of the other plants has remained approximately the same.
The market for flower bulbs for forcing - both for home production and for imports - is growing and offers good prospects.

2.5 Summary and prospects

The demand for flower bulbs has risen substantially in the past ten years. A doubling has occurred in terms of value. The number of countries buying flower bulbs is traditionally limited. In these markets dry sales are slowing down. A growth in turnover can still be reported in '90/'91 as compared with '80/'81, but a decline set in from '84/'85 onwards. These developments are measured against Dutch export turnover. The share of dry sales, compared with sales for forcing, have thus fallen from 54% to 45% in these ten years. The downturn is a result of the more profitable forcing market and the greater competition from other products used in gardens and plantations, such as perennials, bedding plants and shrubs.
A wider distribution of dry sales, for example through supermarkets, can give a fresh boost to the market. This calls for professionalization of the sales machinery. For example, as yet there has scarcely been any response to the new segment of the nature garden. The consumer is not being given sufficient information about the possible uses of the ranges suitable for this. An expansion of the range in general - not more cultivars but new varieties - is needed in order to meet the changing wishes of consumers.

The forcing market is growing, however. The use of flowers, including bulb flowers, fits in with the trend towards brightening up the living environment. Important representatives in this development are the lily, narcissus and tulip. Turnover in these three products at Dutch auctions has increased by 125% in the last ten years, the strongest grower being the lily. The lily, narcissus and tulip have thus undergone the same development as the other cut flowers. All the other bulb flower varieties have seen their market share decline in the cut flower range and have thus been forced into a lower value market segment.

The position of sales for forcing can be further strengthened by lengthening the season and improving the keeping qualities of bulb flowers.



3. World supply

3.1 Introduction

Commercial bulb growing, with the exception of the gladiolus, is mainly concentrated in regions with a maritime climate. The area under cultivation at present totals about 33 thousand hectares.
Two-thirds of the bulbs produced in the Netherlands go to the forcing sector. About 95% of the total domestic bulb sales are intended for this sector which also accounts for more than 50% of foreign sales.

3.2 Development of the acreage

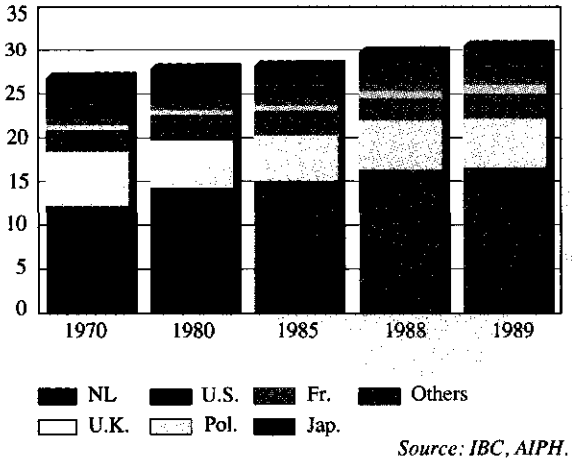
The acreage used for bulb growing worldwide has risen in the past ten years. The growth has mainly taken place in the Netherlands (+ 3,000 ha), the United Kingdom (+ 300 ha) and Poland (+ 500 ha). The acreage has stabilized in the main countries in recent years.
Since 1970, the share of the Dutch acreage has increased by 10% to about 50% of the acreage worldwide.
The fact that the Netherlands has a more than proportional share in world trade (89%) means that other bulb producing countries are relatively dependent on their home market for sales. (See figure 4.)

3.3 Developments in production value

The production value on an international scale (calculated on the basis of the nine main countries) rose between 1980 and 1990 from 880 million guilders to 1.3 billion guilders (at producer level).

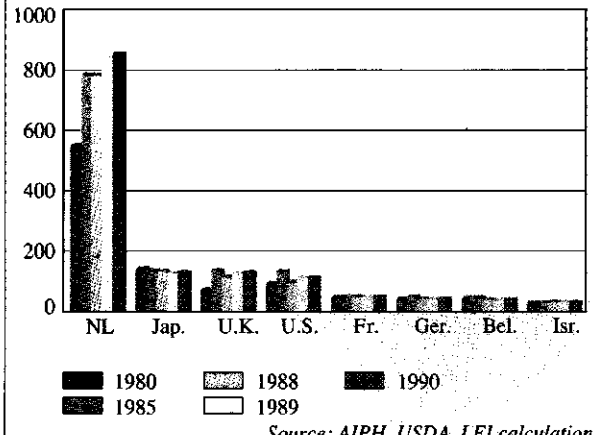
A slight drop in the production value occurred in the second half of the eighties, but this has now recovered.

Figure 4: Distribution of the acreage worldwide
(x 1000 ha.)



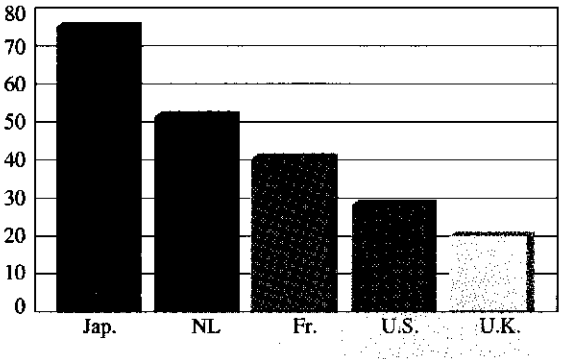
Source: IBC, AIPH.

Figure 5: Development in the production value of flower bulbs in the main countries
(mill. guilders)



Source: AIPH, USDA, LEI calculation.

Figure 6: Production value of flower bulbs per ha. in various countries
(x 1000 gld./ha.)



Source: AIPH, MAFF, USDA, LEI calculation.

The Netherlands, with a production value of 850 million guilders, is by far the main producer country in the world. After the Netherlands, Japan, the United Kingdom and the United States are still of some importance (112, 107 and 70 million guilders, respectively). (See figure 5.)
There are great differences between the countries and the production value per hectare. Germany has a very high production value as a result of the cultivation of lily of the valley. On the other hand, many of these plants which are gathered in the wild are included in the statistics and this gives a distorted picture. The production value per hectare in Japan is also high because of the average high bulb price. The lowest production value is recorded in the United Kingdom, the large share of narcissi having a great influence here. (See figure 6.)

3.4 Main supply centres

The Netherlands, Japan, the USA and the United Kingdom are the main producers in the flower bulb sector worldwide. They are also important demand countries and/or export countries and are therefore dealt with more extensively in chapter 5. Brazil is discussed in this chapter because strong developments are expected there as regards the supply.

Brazil
Around 350 ha of bulbs were grown in Brazil in 1990 (265 ha of gladioli for the cultivation of both flowers and bulbs, 40 ha of amarylli and tulips). Their cultivation was started by Dutch immigrants from the Holambra settlements. Sales are organized on a cooperative basis (auctions). A great deal of parental material and knowledge is available from the Netherlands. The production per ha is lower than in the Netherlands.
There are regions in Brazil where the climate is suitable for bulb growing. Exports from Brazil are mainly to the Netherlands (1990: 85% of the value of *f* 2.5 million). Other export countries are located in the region (Argentine, Bolivia and Uruguay).
The infrastructure of the country is so underdeveloped that its competitive position is poor with respect to countries other than its neighbours and the Netherlands. There is a potential domestic market of 150 million people, but incomes are extremely low. Added to this, in view of the political and economic instability (250% inflation in 1990) the sales and business climate is not optimum. Nevertheless, there seem to be possibilities of moving Dutch cultivation activities to Brazil.

Other countries
Approximately 4500 hectares of bulbs are also grown in countries other than those mentioned. About 1500 hectares of this are located in Eastern Europe, of which 400 are used for gladioli and 600 for tulips. Other countries which may be mentioned are Israel, with the narcissus and iris (total acreage 390 ha) and France with the tulip and gladiolus (800 ha).
The lily of the valley is very important in Germany. About 60% of the acreage is devoted to this plant. The acreage for bulb growing in the former East Germany has largely been lost since reunification. This is again being expanded by new areas of cultivation established by Dutch companies.

3.5 Summary and prospects

The production value has risen in recent years as a result of increased productivity combined with an expansion in acreage. This rise has mainly occurred in the Netherlands. In addition to the commercial production of bulbs, however, bulbs to an unknown value are also gathered in the wild (e.g. in Turkey and Germany).

No further growth in productivity is expected because of environmental measures, starting in the Netherlands. The total world production of bulbs need not decrease in the long run since the fall in productivity can be compensated by a growth in acreage. Enough new land is available in the Netherlands to meet the intensified requirements as regards crop rotation. The growing conditions will be less favourable in a number of cases, however, for example because the availability of water and climatic conditions are not optimum.

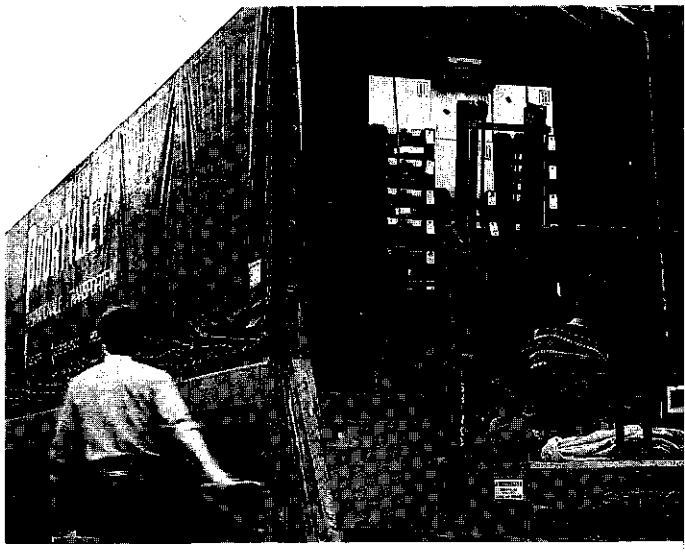
4. World Trade

4.1 Introduction

A limited number of countries engage in bulb exports. The Netherlands, however, virtually reigns supreme. As a result, trade flows are reasonably easy to identify. Bulb flowers are included in the cut flower statistics. In the case of countries where bulb flowers account for a large part of the export value this is stated.

4.2 Developments in exports

Worldwide bulb exports have risen sharply since 1980. (See figure 7.) At the end of the eighties, however, a slowdown occurred. The total value is approximately *f* 1.2 billion. The Netherlands had the largest share of



the rise in exports in the eighties. In 1990 there was again a substantial increase in the numbers exported. Exports rose less in terms of value. In other words, exports increased at the expense of price. The increased productivity in bulb growing could not compensate fully for the rise in costs so that pressure on prices led to a drop in margins. Exports increased in 1990, particularly to Germany. Whether this growth in dry sales can be maintained depends on the developments in cultivation and the demand in East Germany.

Other countries which also saw their exports (and export value) rising in the eighties are Poland, Mexico, Brazil and France. There was a decline in Japan and Germany.
The Netherlands has a market share of 89% in exports and 5% in imports. The value of Dutch exports rose faster than average. This is mainly due to a growth in the forcing segment which has achieved a 64% rise in

As a result of extensification the acreage in the world may rise again. Shifts in cultivation areas will certainly occur. It is still not possible to foresee to what extent competition will occur between 'old' and 'new' areas which, in principle, may also be located in other countries.
Two developments are occurring worldwide: a slowdown in dry sales and a rise in sales for forcing purposes. The changing sales of dry bulbs are not fully compensated by the rise in forcing sales. If the supply stays the same, bulb prices will remain under pressure until a new balance has emerged.

In the Netherlands, cuts in cost price are still being achieved because of a higher productivity per ha and an increase in business size. Profitability has been strengthened by growing more expensive varieties (the lily).

value in the last ten years. In 1990, a total of 63% of the bulbs produced in the Netherlands went to the forcing sector, about 60% of this going abroad, while about 40% remained in the Netherlands. Dry sales rose by only 37% in this period.
Other exporting countries are France, Belgium, Germany, the United Kingdom and Israel.

4.3 Developments in imports

The United States (16%) and Germany (16%) are now the main importing countries measured in terms of value. Next come Italy (15%) and France (11%). The imports of France, Germany (except for 1990) and the UK have remained reasonably stable since 1980. On the basis of per capita imports these countries are insignificant as compared with Finland and Sweden where the imports per head of population are between *f* 6.- and *f* 7.-. The corresponding figure in Germany is *f* 2.60 and in the USA *f* 1.-.

4.4 Trade flows

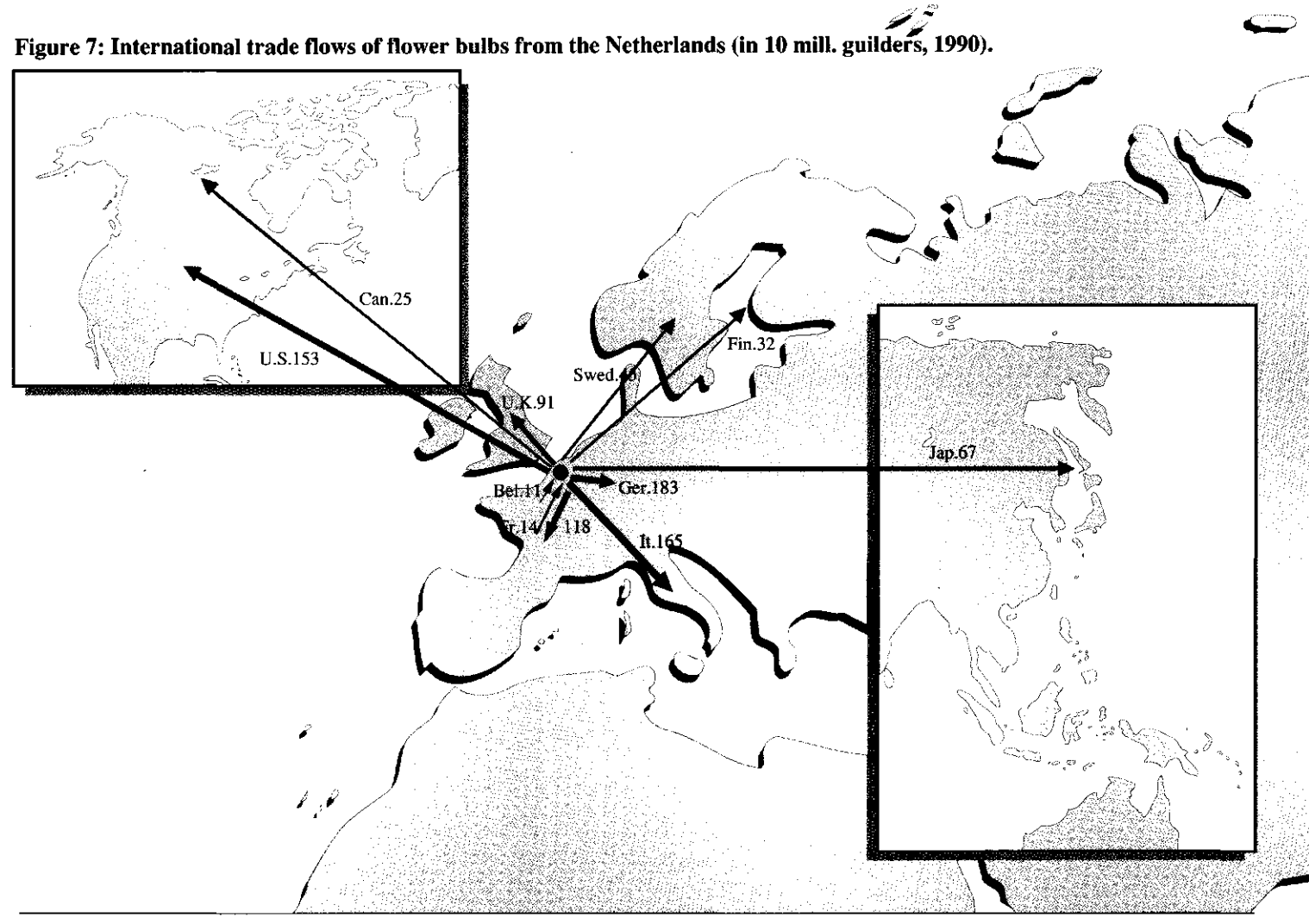
The Netherlands is virtually the sole supplier in Japan, the countries of Eastern Europe, Australia and Scandinavia. It is also the only country with a complete range. Belgium and Japan are also active in the United States. Supplies are also sent to Southern Europe, Africa and the countries of Western Europe from Belgium, France and Germany. In Northern Europe Germany is a major importer, in addition to the Netherlands. Bulbs from Belgium, the United States, the UK, France and Germany are imported into the Netherlands.

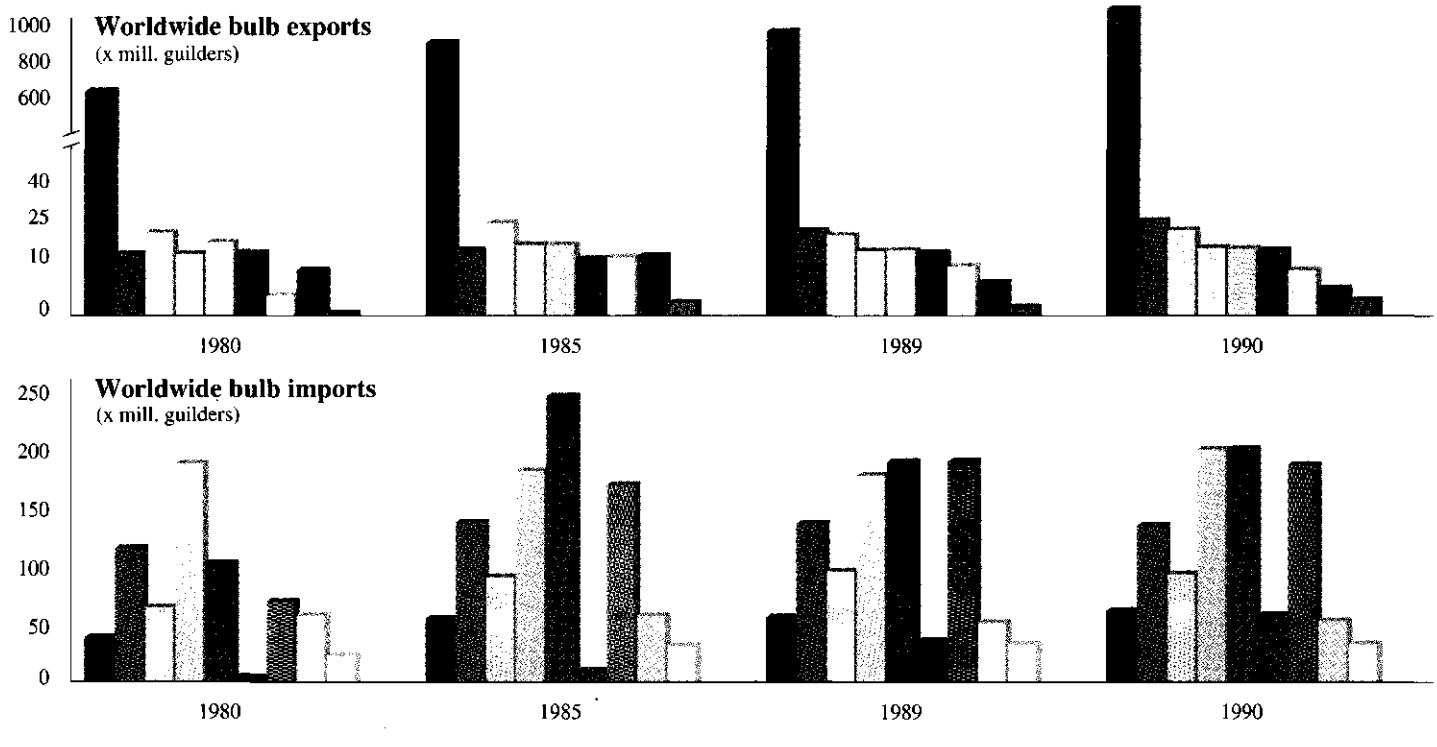
4.5 Summary and prospects

Viewed worldwide, the international trade in bulbs has grown by 55% in the past ten years. This growth has smoothed out in recent years, however. The world trade is dominated by the Netherlands. Production in the countries to which the Netherlands exports is decreasing and the importance of Dutch exports is therefore rising. Since growth in the past was mainly due to Dutch bulbs replacing those grown abroad, the possibility of a slowdown occurring must be seriously borne in mind.
There are three important and almost equally large importing countries, namely the United States, Italy and Germany. The significance of the USA is continually increasing as a result of the drop in its own production. France is the world's second largest exporting country. The major part of these exports also goes to the Netherlands.

The growth in sales is being achieved by just one product (the lily) and is taking place on only two markets (Italy and Japan). The growth in demand in both countries has been realized in the forcing sector.
The possibilities for growth in the dry sales market are limited. In the future, environmental measures may even lead to a decline in the supply from the Netherlands, because Dutch production may shift to countries abroad.
In the forcing market the foreign sector has largely been replaced by the Dutch sector. In the export field a shift has occurred from the trade in flower bulbs to that in bulb flowers.

Figure 7: International trade flows of flower bulbs from the Netherlands (in 10 mill. guilders, 1990).





Source: AIPH, Eurostat, Imports statistics of Japan and the U.S.A.

5. Competitiveness of supply centres

5.1 Introduction

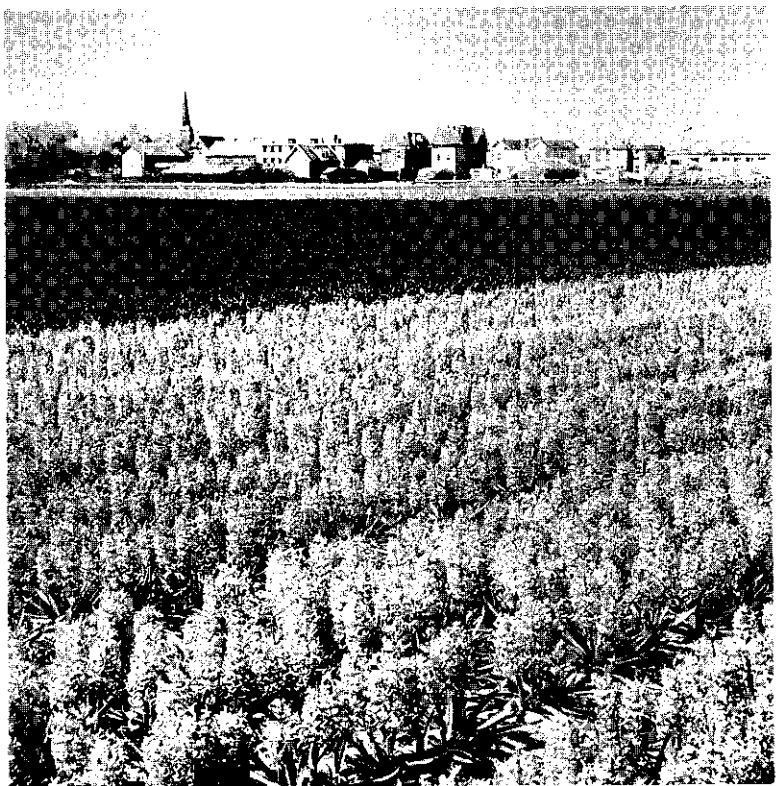
In this chapter, the specific aspects of the production and sales of the principal bulb exporting countries are examined. A brief outline of the supply and trade will be given for each country. Next, a number of aspects will be dealt with which are important for a country's competitiveness, such as production factors, the domestic market, the network of sectors, the economic variables and the government authorities. The production factors will be dealt with in schematic form. The selection of countries has been made on the basis of their position in the international trade in, and cultivation of, flower bulbs. Belgium has not been included in the final selection because this country's growing and trading activities are almost entirely confined to begonias.

5.2 The Netherlands

Supply and trade from the Netherlands

Supply

The Netherlands is the world's largest bulb producer. The Netherlands is traditionally a large bulb trading country and was already exporting bulbs in the 17th century. This has had a great influence on the development of Dutch bulb growing. The acreage in 1991 was 16,300 hectares. A particularly substantial growth in the acreage took place in the seventies and eighties. As a result of low prices and improvements in productivity in bulb growing, the acreage has been decreasing in recent years. The main plants are the tulip (7,068 ha), the lily (2,470 ha) and the gladiolus, excluding cormlets bulbs (1,760 ha); 1991 figures. Cultivation in the Netherlands is the most intensive in the world. As a result of the intensity, the use of crop protectants and soil decontaminants has increased. The production value per hectare goes up by about 4% annually (from 38,500 to 51,600 guilders in the last nine years). The total production value of flower bulbs is approximately 850 million guilders, representing about 65% of the production value worldwide.



Trade

To enable it to expand its own range, the Netherlands is importing more and more bulbs from abroad. In the period '86/'87 to '89/'90 imports from the EC rose by 15% and imports from the world as a whole by 9%. About half of the bulbs come from the EC. A proportion of these are bulbs grown by Dutch firms abroad. The total value of Dutch imports is about *f* 60 million. Table 1 shows the main countries from which the Netherlands imports bulbs.
The bulb plants most frequently imported into the Netherlands are the narcissus, tulip and gladiolus.

72% of Dutch bulb production is exported in the form of bulbs. (See table 2.) The main plants exported are shown in figure 3. In terms of value, 46% of these go to the consumer and 54% to forcing nurseries.
If the bulb flowers are also included, then even more than 91% of the bulb production goes abroad. Only 9% is left in the Netherlands, 2% as dry bulbs and 7% as flowers (see figure 8). This means that there is little buffer capacity in the home market. Sales on foreign markets will start slowing down, because foreign production has already been largely displaced and demand is no longer growing strongly. On the basis of the present sales strategy, it seems that many markets are saturated and price erosion is occurring as a result.

Exports of bulb flowers and flower bulbs have risen to a lesser extent than those of cut flowers and tree nursery products. In 1980 the share of these products (in terms of value) compared with the competing range was 23% and in 1990 only 19%. The total export value of flower bulbs and bulb flowers is increasing, however. From 1980 to 1990 it rose by 37% for flower bulbs. The export value of bulb flowers in 1990 was *f* 570 million, representing a growth of 72% compared with 1980.
The growth in Dutch exports of dry bulbs is largely achieved on three markets (the USA, Japan and Italy). Exports to Poland and Hungary also grew sharply in 1990 but their combined value is still low (4 million guilders). The lily is the only product which has contributed to the growth, with exports doubling in value from 1984/85 onwards.

Table 1: Imports (units x mll.) of flower bulbs into the Netherlands

Country of origin	No. of units 86/87	89/90	Main types (in order of importance)
France	84	107	tulip, gladiolus, iris
Brazil	36	70	gladiolus, Hippeastrum
Turkey	63	65	snowdrop, winter aconite, anemone
United Kingdom	55	42	narcissus, iris, tulip
Israel	20	19	narcissus, ranunculus, iris
Germany	8	15	tulip, gladiolus, begonia
South Africa	16	6	Star-of-Bethlehem, ranunculus, Tritonia
Swaziland	2	4	ranunculus, Star-of-Bethlehem
USA	7	3	iris, ranunculus, gladiolus
Yugoslavia	9	2	gladiolus, lily, tulip
Japan	7	1	lily, ranunculus, terrestrial orchid
Total EC	150	172	
Total World	314	342	

Source: P.V.S. Annual Reports

Table 2: Exports of flower bulbs from the Netherlands to various countries in 1984/1985 and in 1989/1990 in units (x million) and in value (x million guilders)

Countries of destination	'84/'85 (units x mill.)	'90/'91	'84/'85 (guilders x mill.)	'90/'91
Germany	1107	1306	169	183
United States	793	1015	174	153
France	770	843	121	118
United Kingdom	684	802	89	91
Italy	668	747	141	165
Sweden	228	212	50	45
Canada	100	127	21	25
Spain	150	127	8	16
Japan	24	177	7	67
Finland	104	119	29	32
Total EC	3379	4030	572	607
Total World	5496	6486	954	1036

Source: P.V.S. Annual Reports; P.V.S. 1991 statistical report

Production factors

	strong	weak
Geography	- Favourable situation with respect to Europe - Low transport costs	- Acreage situated in densely populated area - Moderate parcellation of land.
Climate	- Mild climate, crops have a longer growing season	- Early cultivation of bulb flowers (must be in glasshouses)
Raw materials	- Very good sandy and sandy clay soils - Adequate water supply - Combination of water/land optimum (hyacinth) - Gas relatively cheap	- High emissions to soil and water - Land expensive (av. f20/m^2)
Labour	- No labour unrest - High productivity	- Labour image is low - Labour costs are high (f32/hour) - Much seasonal labour and difficult to obtain - Labour management low
Capital	- Cheap capital basically available without restriction via competent banks - Low inflation (2.5%) but threatens to rise in the nineties - Interest rate 9.8%	- Flower bulb nurseries the most capital-intensive businesses in horticultural sector
Infrastructure	- Roadway network and air travel well developed	- Relatively few communication systems at auction level - Acreage fragmented
Knowledge Infrastructure	- Courses and study clubs network rapidly increasing - Great deal of research from fundamental to practice-oriented - Good quality training courses at various levels - Excellent information	- Limited marketing knowledge but good knowledge of the trade - Information from market slow to penetrate - Little open knowledge system as regards demand and supply - Training courses not specifically aimed at flower bulbs

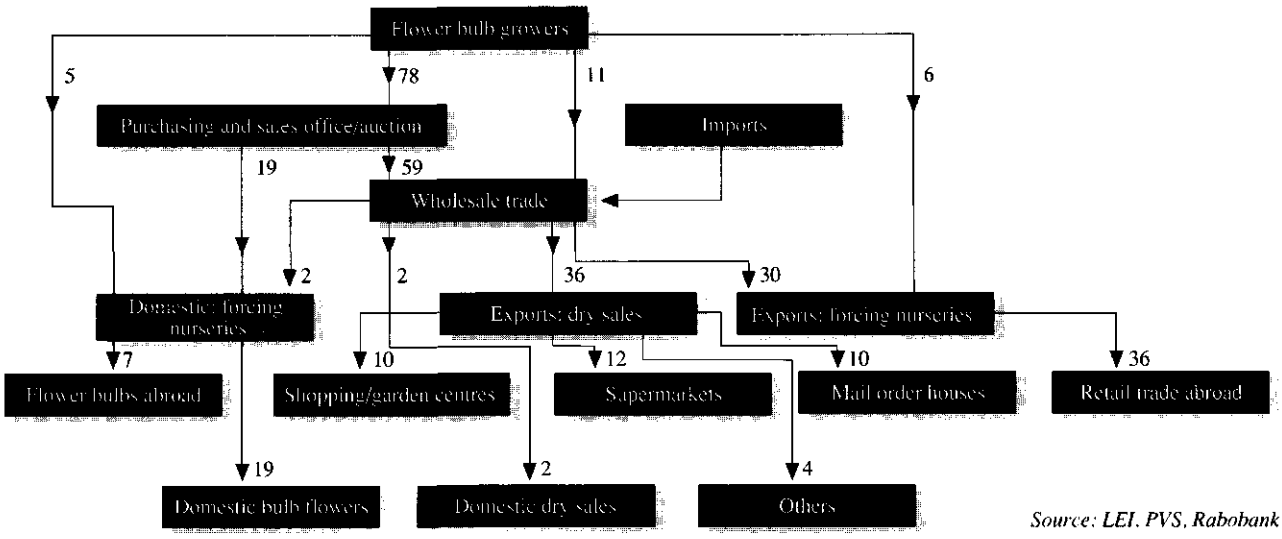
Domestic market

The Netherlands has approximately 15 million inhabitants who together constitute 4.8 million households, about 75% of which have a garden. One-third of the garden owners buy flower bulbs. This is a permanent group mainly consisting of older people. Younger people generally rate bulbs less positively. Two per cent of the total flower bulb production reaches the consumer in the form of bulbs. Consumers see bulbs as an impulse-buying product. They generally use them for planting in the garden and sometimes also for forcing indoors.
Planting bulbs in flower boxes is not popular however. Some 60 bulbs per year are bought per family for a total amount of f14.60 (measured in 1984. There has been some growth since then). Families buy bulbs to a total value of 12.2 million guilders. Companies and institutions buy about 6 million guilders' worth of flower bulbs per year. The main bulb species is the tulip.

23% of all expenditure on flower bulbs is made in supermarkets, the main sales outlets after these being garden centres (13%), outdoor markets (12%), mail order firms (13%) and department stores (8%).

The scale of the Dutch market is too small for it to act as a base for innovations. As a result, aspects such as quality development, improved cultivation, innovation and increased productivity are not sufficiently stimulated by the domestic market. Since no other suppliers can be displaced on the foreign market, left-over batches are mainly offered to the forcers in the domestic and nearby foreign markets. Professional forcers are generally very critical as regards quality.

Figure 8: The sales pattern for flower bulbs in the Netherlands as percentages of total production (1988).

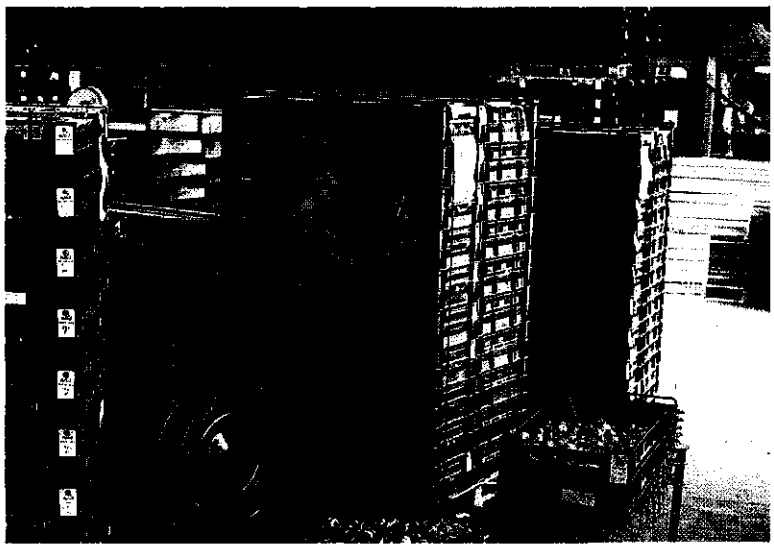


Source: LEI, PVS, Rabobank

Network of sectors

Cultivation

The almost 4,000 growers, of whom only 2,000 specialize in flower bulbs, are represented by the Koninklijke Algemeene Vereeniging voor Bloembollencultuur (Royal General Association for Flower Bulb Cultivation) and growers' organizations. Present challenges are the ever-stricter environmental regulations, progressively higher quality requirements and the labour supply. These problems are stimulating participation in study clubs in which the growers exchange experiences and can acquire knowledge. This is important for the small-scale businesses (average 6 ha) because such clubs are the most efficient and cheapest source of innovation.



Distribution of flower bulbs

The major part of the transactions (about 70%) are effected through agencies: the CNB, Hobaho and Cebeco. These agencies see to the financial settlement of the transaction and employ some 200 middlemen. In addition, there are about 30 independent brokers. The middlemen bring demand and supply together and charge commission for their efforts. It is questionable whether the ratio of 200 middlemen to 200 specialized exporters is really optimum. The average turnover value per middleman is *f* 3 million with a commission turnover of about *f* 150,000. The three independently operating agencies largely derive their right to existence from the growers' need to play a part in the trade themselves. A batch of bulbs can be offered (simultaneously) to the three agencies. They are sold to the middleman who can get the highest price. In the short term this can be attractive. In addition, a great deal of trading takes place directly between the growers and forcers (business relation batches). It is questionable whether the lack of clarity this creates in the market will contribute to strengthening the flower bulb sector in the long term.

The rest of the bulbs go directly to foreign customers and the domestic forcing industry either through wholesalers or otherwise. This is shown in figure 8. In addition to their sales offices, the largest agencies - CNB and Hobaho - also hold auctions during the season.

Besides the auctioning of dry bulbs, "green auctions" also take place. This involves auctioning batches of bulbs when they are still green in the fields. In this case, the crop is viewed prior to the auction.
Contract cultivation (less than 10% of production) also occurs and here there are a number of uncertainties for the grower (harvest risk). On the other hand, most forms of contract cultivation have the advantage of a fixed price and this method is also used by the breeders to allow new cultivars to multiply in a protected environment. This is generally based on an arrangement between the breeder and the growers' association.
706 exporters were active in the sector in 1990, with 8% of this group accounting for two-thirds of the total turnover. There are around 200 specialized exporters; many businesses specialize in dry sales or forcing products. There is a limited development towards further concentration. In the last eight years the average turnover of businesses worth more than five million guilders rose from 9.9 to 11.4 million guilders. Businesses with a turnover of less than 1 million guilders are generally owned by growers and therefore do not specialize. The point is that they combine growing with trading activities. The direct sales of this group amount to 6% of Dutch production. The exporters charge a percentage margin of the selling price for their work.

The relationship with the trade in the tree nursery sector is increasing because the sales periods of both product groups (e.g perennials) supplement each other and an expansion of the range is welcome. A relationship with the cut flower network is confined to the sale of bulb flowers.

Because of the many possibilities for selling bulbs, the wide range, and differences in quality, the way in which prices are determined is not very clear. It is only in the auction season that prices are determined publicly, a situation comparable with that in the vegetable and floristry sector. This does not provide a good overview because it only relates to a limited part of the total supply.

Parental material
Turnover in parental materials (breeding) for the flower bulb sector is about 150 million guilders. Planting material (propagation) can easily be obtained from fellow growers. There is sufficient planting material. A wide range is available in the Netherlands, but there is room for improvement in quality as regards the keeping properties of the flowers and the resistance of the bulbs to disease. The wide range is partly responsible for the lack of transparency in the market. Material sold by specialized breeding businesses for a number of crops can be used as planting material for new cultivars. There are ten businesses for tulips, ten for lilies, five for gladioli and ten for freesias (Source: VBN). These breeding businesses can use material supplied by the CPRO (Centre for Research on Plant Breeding and Varieties). The CPRO's breeding programme is mainly focused on strengthening resistance to diseases and pests in response to environmental pressure. Biotechnology is increasingly being used in breeding. Biotechnology is very capital-intensive and a shift is therefore taking place from breeding in small businesses to large ones. The Netherlands is one of the furthest advanced countries in biotechnology in the area of ornamental plant cultivation. The techniques involved are used to build-in resistances and speed up propagation. At present, the state of the art does not

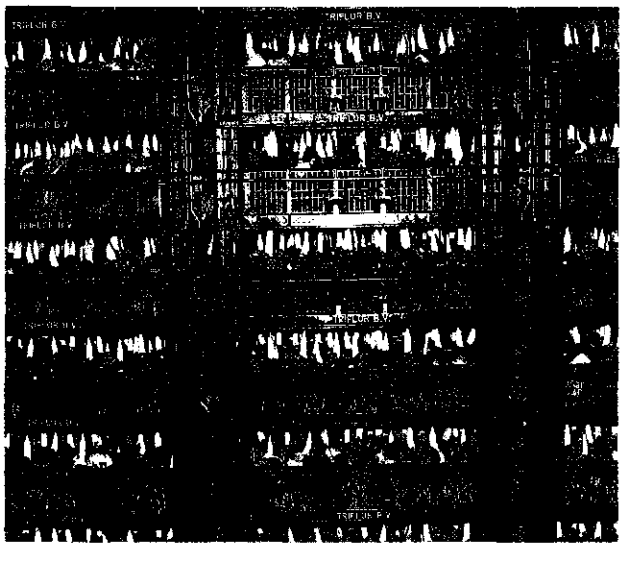
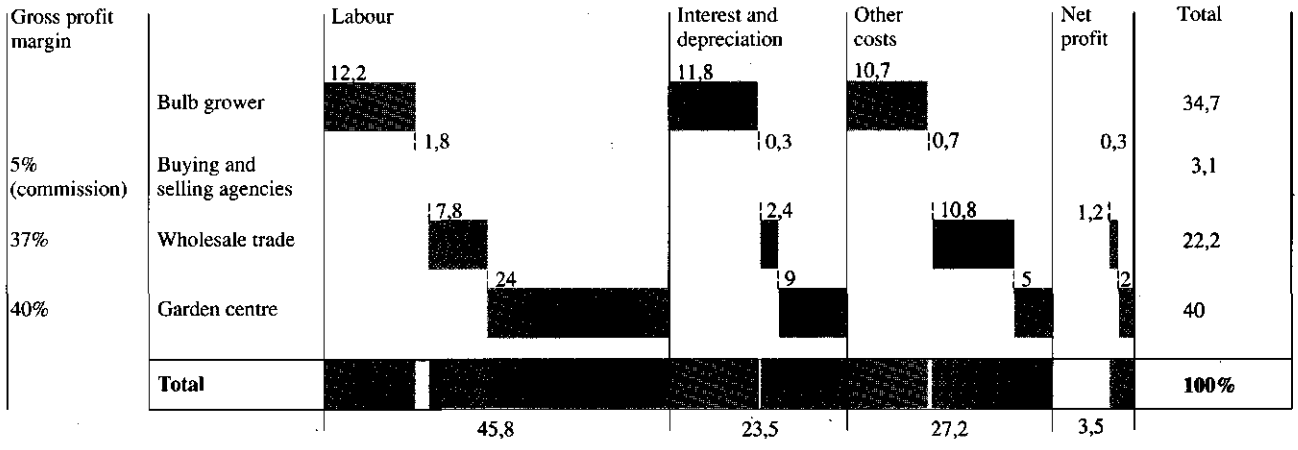
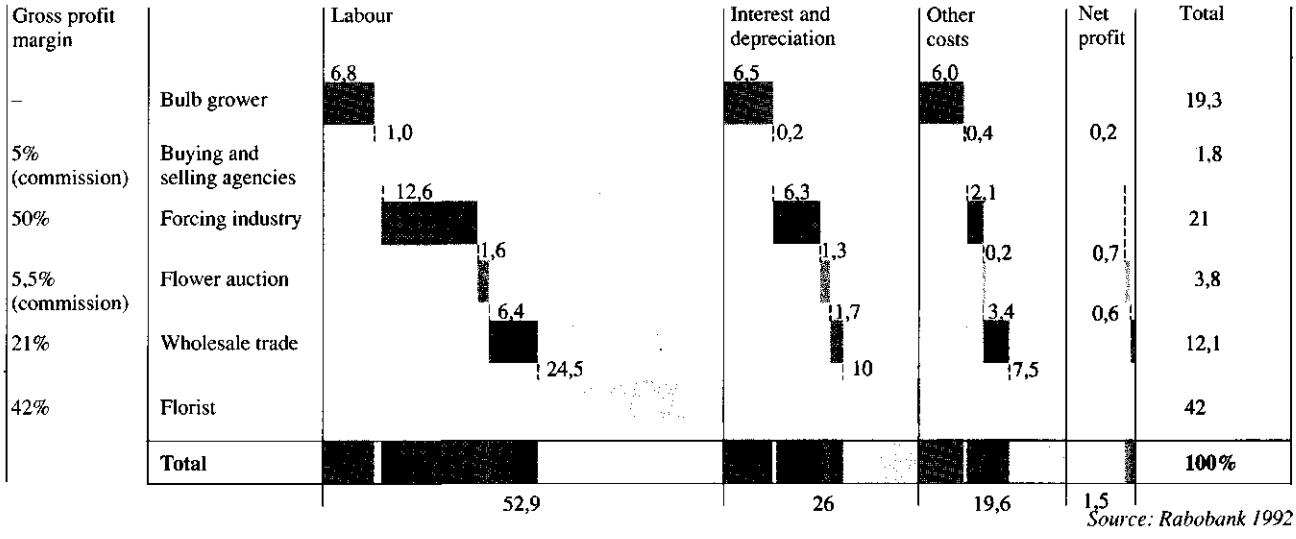


Figure 9: Cost structure in the dry sales chain (as % of consumer expenditure)



Cost structure in the forcing industry (as % of consumer expenditure)



Source: Rabobank 1992

yet permit a quick response to the changing wishes of the consumer. Breeding a new plant and putting it on the market takes between 10 and 25 years, depending on the plant.

Storage treatment

Storage treatment companies accelerate or slow down the blossoming of bulbs by employing heat and cold treatment and they sell the treated product to forcers and exporters. The twenty storage treatment companies in the Netherlands are often linked to large trading houses or to bulb auctions. Storage treatment is often done on a jobbing basis.

Promotion

The International Bulb Centre (IBC) handles the collective promotion of the product both in the Netherlands and abroad. The IBC is financed by a trade levy which every producer and trader has to pay to the PVS (Commodity Board for Ornamental Plants) and concentrates, among other things, on running advertising campaigns, organizing exhibitions abroad, providing product information and advising journalists.

Inspection

In the Netherlands, the Bulb Inspection Service (BKD) inspects the bulbs in connection with health and quality requirements. Rejected bulbs must be destroyed. The Plant Inspection Service (PD) is responsible for, among other things, the phytosanitary inspection of imports and exports, checking pesticides and also cooperates internationally in the field of crop protection. The Common Inspection Service (AID) inspects bulbs for their size and compliance with the requirements for the species, the aim being to avoid the replacement of bulbs.

Cost structure in the chain
In the domestic dry sales chain the grower has a 35% share, the IVB 3%, the wholesale trade 22% and the retail trade 40% in the costs of getting the product to the consumer. See figure 9.

Distribution of bulb flowers
The trade channels for cut flowers are used in the sale of bulb flowers.
In the structure of the final price of bulb flowers the grower accounts for 19% of the costs, the IVB 2%, the forcer 21%, the auction 4%, the wholesale trade 12% and the retail trade 42%. See also the report on 'the Development of International Competitiveness in the Dutch Floristry Business' (LEI/RABO, June 1992).

Government

The government's present role is mainly concerned with environmental regulations and physical planning. In the past, it played a great part in setting up and organizing threefold support from education, research and information, but today fewer and fewer resources are available to enable the government to play a stimulatory role. In the future, the industry itself will have to pay more.
Radical environmental measures were proposed last year. These involve a reduction in the use of pesticides by 45% in 1995 and 60% in 2000. In addition, a great many agents are forbidden. The use of fertilizers is also restricted and regulated.
One solution to the environmental problem in bulb growing is an integrated cultivation system with more extensive crop rotation. There is too little sandy soil available for this in the centres, among other things, as a result of planning restrictions and high land prices. Changing over to heavier soils also means more manual labour and lower profitability. There appear to be possibilities for cost-price reductions by establishing very large-scale cultures, but this is difficult to achieve because of the low mobility of the growers. Attempts are being made to utilize new areas in the Netherlands by exchanging land with the cattle breeding and arable farming industries. If this is not sufficiently successful, bulb-growing will move abroad (e.g. to France, Germany and Poland).
Various environmentally friendly pilot firms have been set up to prepare growers for the government's crop protection policy.

Economic variables

Compared with other sectors of horticulture, bulb growers regard each other more as competitors. This is because they often sell their produce themselves. Fragmentation of sales - with growers trading and exporting themselves - makes it more difficult to cooperate and exchange knowledge openly. As a result of the good keeping qualities of the flower bulb, the grower can, for example, withdraw a batch offered for sale if the price is too low. As a result, many growers handle part of their sales themselves. During the selling season, many representatives travel all over the world to sell the bulbs. The bulb flower producers are members of the cut flower auctions.

Summary and prospects

The Netherlands is the largest bulb producing and exporting country in the world. Its importance is still increasing. In recent years, however, the growth in volume has been greater than the growth in value; this means price erosion. The lily is mainly responsible for the growth in turnover. The basic factors, such as labour, energy, capital goods and land, are characterized in the Netherlands by a high cost price. The Dutch flower bulb sector therefore does not derive its strong competitiveness from low costs, but from other factors. A favourable climate, good soils, a powerful central function, strong threefold support from education, information and research, a wide range, good trade channels, the attraction of the cut flower sector and the strongly developed network contribute to this. The Netherlands is the only country with a specialized network, and the relationship with the strong Dutch floristry network also has advantages. The growers

have enough knowledge of cultivation to supply a good product; this is ensured by training, the exchange of knowledge through study clubs and a wide range of advisers. The resulting high productivity makes it possible to produce at a competitive cost price and compensates for the high costs.
The dynamism of this sector is mainly reflected in an expansion of the range and the efficiency strategy.
A central pivot, such as the auctions in the floristry sector, is lacking. Both cultivation and trading have remained relatively small in scale in many businesses.

Because of the relatively favourable profitability and the absence of recognizable competition, there is little to stimulate innovation in the flower bulb sector. Given the present starting position, however, an adjustment of the strategy in this sector will lead to higher margins. The increase in scale and cooperation in the chain is gradually getting under way in the wholesale trade. It is questionable whether the growers will, in the long run, be able to offer a sufficient counterweight to the concentration of demand in the chain store business. Marketing in new, distant countries (Japan) is very expensive. This calls for cooperation or an increase in scale. Various selling methods are used to spread the price and delivery risks. Elements of speculation also sometimes seem to be involved in the bulb trade. Taking short-term profits can, however, hamper efforts to strengthen the demand and supply structure.
There is limited cultivation under licence (around 3% of the total flower bulb sales, mainly in the case of the tulip and lily) in order to protect the breeders' interests. Contract cultivation is also used for this purpose (10%). Generally speaking, too little use is made of these instruments in bulb growing to permit renewals in the range. Large companies keep propagation in their own hands.
Other important points of attention for the bulb growing industry in the Netherlands are the heavy load imposed on the environment and the inadequate labour supply. The Dutch government lays down strict environmental requirements which, up to now, are more severe than in other European countries. If the sector can meet these requirements it will gain a lead on other bulb-producing countries in the area of environmentally friendly cultivation. This can also greatly improve the sector's image. Because of the proposed environmental measures, running a nursery will become more expensive. The labour shortage can be partly offset by mechanization but this is only possible in very large businesses. An increase in scale will then be essential. In addition, professional labour management is needed in order to tackle this problem. An important development for the bulb sector is the abolition of the frontiers in the European Community. This unification can lead to increased prosperity which, in turn, can result in a 3% rise in the consumption of flower bulbs (LEI calculation). If the VAT rate on ornamental plants is increased, however, a fall of 1.8% in the use of flower bulbs and of 3.1% in the case of bulb flowers is to be expected. It is feared that because of the unification, the countries outside the EC will impose new import restrictions, such as an intensification of health standards, levies and import quotas. An attempt is being made to offset this in the present GATT negotiations.

5.3 France

Supply and trade from France

Supply

French bulbs have a 17% share of their own market. The gladiolus is the most important plant but its share in bulb growing is declining. In addition to bulbs, various other ornamental plants are grown on nurseries which are therefore not specialized. The production value of bulbs grown in France in 1988 was around 30 million guilders. Half of the production is intended for sale outside France. About 50% of this goes to the Netherlands. Italy and Spain, with a 13% and 15% share, respectively, are the largest markets after the Netherlands. French exports have grown in value by 120% in the last ten years, with bulb flowers accounting for 5%. A total of 10,230 tonnes of bulbs are exported to the value of 2,800 guilders per tonne.

Trade

Bulbs exported from France are used in Spain and Italy to supplement the Dutch range. The French are looking for new markets but do not have sufficiently developed networks available to capture distant or specialized markets. A striking feature is the strong growth in tulip exports. (See table 4.)
The share of Dutch exports to France (95%) is progressively increasing. Germany and Belgium have lost part of their sales in France. Imports of hyacinths and gladioli have decreased recently, while tulip imports remain stable. In the case of these species the Dutch share in demand is almost 100%. Imports amount to a total weight of 24,187 tonnes and 50% is intended for the forcing industry. (See table 3.)

Table 3: French import of bulbs, tubers and rhizomes (incl. bulb flowers) by species and value (x mill.)

Species	1980	1985	1989	1990
Hyacinth	7,8	9,7	6,6	6,0
Narcissus	2,6	3,5	3,4	3,7
Tulip	23,6	27,6	25,9	26,1
Gladiolus	9,0	11,0	9,8	9,2
Others	70,8	95,2	88,9	88,1
Total	113,8	147,0	134,6	133,1

Source: Eurostat, P.V.S. Statistical report.

Table 4: Exports of French bulbs, tubers and rhizomes (incl. bulb flowers) by species and value (x mill. gld.)

Species	1980	1985	1989	1990
Hyacinth	0,6	0,6	0,4	0,6
Narcissus	0,3	0,0	0,2	0,4
Tulip	0,8	2,4	4,9	5,5
Gladiolus	1,1	1,1	3,0	2,7
Others	8,8	9,7	15,0	19,5
Total	11,6	13,8	23,5	28,7

Source: Eurostat, P.V.S. Statistical report.

Production factors

	strong	weak
Geography	- Favourable situation for exports	- Growing areas very scattered - Area of bulbs/nurseries small, non-specialized
Climate	- Warm climate - Early production	- Low yield, few young plants
Raw materials	- Low land prices - Sufficient sandy soil - Sufficient good water	- High sensitivity to pollen
Labour	- Mechanization has progressed, less labour-intensive	- Bulbs must be peeled in the Netherlands
Capital	- Relatively small nurseries, require little capital - Inflation 3,4%	- Interest rate 17%
Infrastructure	- Nurseries increasing in scale	- Trade unstructured - Direct sales to consumer - Dutch marketing machinery necessary
Knowledge infrastructure	- Relatively high level of Dutch management	- Few training - Little knowledge of bulb handling - No specialized research and information

Domestic market

France has about 20 million households with some 12 million gardens covering an area of 1,150,000 ha. A total of about 23% of the households buy bulbs, but this percentage is increasingly declining as a result of the trend towards allowing the garden to grow wild. Annual expenditure on bulbs is about *f* 5.40 per family. A bulb costs about *f* 0.40. The bulb price, which is higher than in the surrounding countries as a result of the high distribution costs, has been falling in recent years.

The tulip is the most important plant with a share of over 30%. The range is fairly wide (large share of other plants). 89% of the bulbs are planted in gardens. This represents a value of 91 million guilders. 10% of the bulbs are planted on balconies or terraces. The other bulbs are mainly used in cemeteries. Most bulbs are bought by people in the highest social classes and are generally purchased from supermarkets. Many purchases are also made from mail order firms and garden centres. The margins in the retail trade vary from 10% (cut-price sales) to between 60 and 70% for the total range in the hypermarkets and 80% in the garden centres. Bulbs achieve an average share of 15% of the total sales of garden items. The supermarkets' share of sales is rising and that of the mail order firms is falling.

Network

Cultivation

The growing areas in the country are fairly widespread and there are scarcely any well-developed production centres. The growers therefore have little contact with each other. There are about 550 nurseries which grow bulbs. The average area used for bulb growing in a nursery is 1.25 ha. An expansion in the number of nurseries is only occurring because arable farmers and cattle farmers are seeking an alternative to the production restrictions imposed on them.

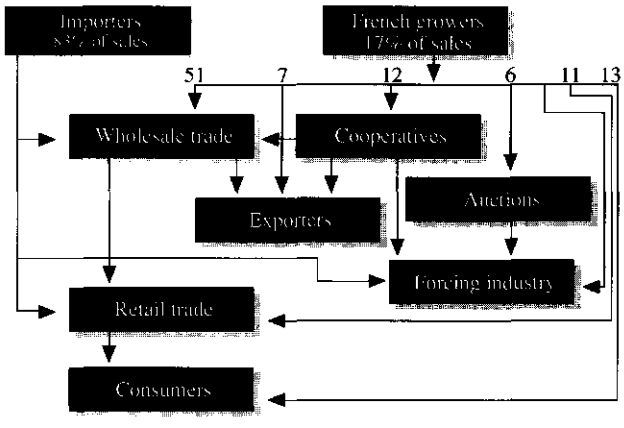
About 250 of the 550 growers have joined a sales and production cooperative while the remainder sell their products themselves. The sales cooperatives generally do not specialize in flower bulbs and each has its own sales strategy.

Distribution

Economies of scale, rationalization and concentration are also taking place in the distribution sector. As a result, the distribution channels are acquiring a very strong position in the trade. Flower bulbs have a high penetration at the points of sale. Half of the points of sale are serviced via distribution centres or the wholesale trade.

50% of French bulbs are sold in the country itself and 50% abroad. The flows in France are presented in percentages in figure 10.

Figure 10: Trade flow of flower bulbs in France (%) 1989



Source: Country Note on France, P.V.S.

Economic variables

France is the main producer of agricultural products in the EC. The French economy is developing well. A policy of adaptation was introduced in 1983 and as a result the economy is growing again, although it is still very dependent on the world economy.

Government

The government is endeavouring to stimulate bulb growing by means of subsidies. The VAT rate on ornamental plants was recently increased and this may be expected to result in a drop in sales. The development of the countryside by the French government, particularly with regard to horticulture, is very limited.

Summary and prospects

Bulb growing is decreasing in importance in relative terms in France but exports are still growing. More and more Dutch companies are using France as a satellite country for growing early bulbs (warmer climate). It is therefore not surprising that French exports are progressively increasing and that the largest proportion go to the Netherlands (internal business flows). On the other hand, France also exports bulbs to two countries which are important for the Netherlands, namely Spain and Italy. They are particularly strong in the smaller types of bulbs (special bulb plants). French bulbs are largely used to supplement the Dutch range in countries abroad.
Research in France is reasonably well developed and a relatively great amount of attention is devoted to flower bulbs. Cooperation between the research centres and the practical fields is poorly organized, however, so that advice is slow in reaching the growers. Information is scarce and there are hardly any training facilities. As a result of the arrival of Dutch companies, however, specialized knowledge is becoming increasingly available. Despite stimulation from the government, bulb growing will probably decrease further in the future because the image of horticulture in France is progressively deteriorating (poor labour conditions). The situation as regards successors is poor and the average age of the growers keeps on rising. As a result, there is insufficient innovation in nurseries and sales are slowing down. The situation as regards successors is being partly alleviated by the advent of Dutch management.

5.4 Israel

Supply and trade from Israel

Supply
Some 50 million bulbs and tubers are produced annually with a value of no less than 10 million guilders. The main plants are the Tazetta narcissus, the iris and the ranunculus. Gladioli are only grown for their flowers. Cultivation is spread over three areas.
Virtually all the bulbs are sold abroad through Agrexco, with 50% going to the United States (the majority through re-exportation via the Netherlands). No less than 40% go directly to the Netherlands. Sales of Tazetta are limited to 20 million bulbs per year. The Agrexco organisation thinks that the production value will have risen to between 15 and 20 million guilders within 2 to 3 years.

Parental material
This sector is at such a level in Israel that the Netherlands can expect competition. The breeding of gladioli is far advanced in Israel.

Table 5: Israeli exports (x mill. gld.)

Country	1980	1985	1988	1989	1990
The Netherlands	2,6	5,3	4,7	3,4	
United States	0,8	3,3	3,3	4,2	
France	1,0	0,5	0,4	0,3	
United Kingdom	0,0	0,3	0,1	0,1	
Others	0,8	0,9	0,8	1,5	
Total	5,2	10,3	9,3	9,5	8,7

Source: Israeli export statistics (1990 estimated on the basis of EC imports from Israel)

Table 6: Israeli imports (x mill. gld.)

1980	0,3
1985	10,5
1988	3,2
1989	2,8
1990	2,9

Source: Israeli Import Statistics estimated on the basis of EC exports to Israel (1990)

Imports mainly come from the Netherlands.

Production factors

	strong	weak
Geography	- Situation relatively favourable with Europe	- High transport costs - Scattered production
Climate		- Little rainfall - Temperatures too high, pressure of disease
Raw materials	- Land is cheap	- Availability of water very uncertain. Water* is expensive - High costs for parental material
Labour	- Sufficient untrained labour available - Wages costs *f* 12,- /hour - Good practical training	
Capital		- Capital insufficiently available - Inflation 11.4% - Interest rate 26.1%
Infrastructure	- Good roadway network and efficient air transport - Extensive mechanization	- Political uncertainty
Knowledge infrastructure	- Adequate research institutes - Strong product innovation	- Moderately developed information on bulbs

** The summers are longer and hotter than in the Netherlands and there is less rainfall (300-600 mm per year). Irrigation with water from the Sea of Galilee is necessary throughout the year. Narcissi die off early because of the prevailing dry wind (Chamsin). Water is subject to a quota - there is still enough for the time being - but the rapid growth of the population is creating an uncertain situation. The result of the peace negotiations concerning the occupied territories and the water rights also play a part.*

Domestic market

Israel is a small and relatively dry country with 4.5 million inhabitants. Most people live along the coast. Domestic turnover amounts to around *f* 1 million. These are not aspects which could stimulate production. A great many Tazettas are grown, however, and are brought to flowering by home-forcing. As a result, they do not have the disadvantage of needing water for outdoor cultivation. Nevertheless, there are some spurs to innovation.

Network

Most nurseries are to be found in kibbutzim and moshavim. They are controlled by the Flower Bulbs and Ornamental Plants Marketing Board (Flower Board), a government body charged with monitoring production and marketing. Production quotas are set which are maintained on the basis of contracts. In addition, the Flower Board looks after the interests of growers vis-à-vis the government, foreign customers and organizations. Is also guides research and development. For sales purposes, it frequently cooperates with Agrexco, the largest exporter and a subsidiary of the Flower Board. This organization also carries out quality control in connection with sales, imports of parental material and performs research. A second, increasingly important form of selling is direct marketing through auctions in Europe (7 in the Netherlands and 4 in Germany).

Economic variables

Israel has a mixed economy. For example, key sectors such as aviation, chemistry and oil refining are state-owned. The economy is fairly closed in nature. The majority of horticultural businesses are privately owned.

Government

The government participates in research, as well as in providing information and education through the Flower Board and Agrexco. The export of agricultural and horticultural products is strongly stimulated in order to obtain foreign currency. Half of the state

budget is needed for the payment of interest and redemptions. Hyperinflation has been brought under control in recent years by freezing wages and prices.

Summary and prospects

Bulb growing in Israel is well developed. Growers have been able to make up for the lack of water by using advanced installations. This results in relatively high costs. As regards the future, the distribution of the available water remains uncertain because of the growth in population and the peace negotiations. Sales are well organized and are channelled through one state trading organization: Agrexco. In spite of the many difficulties affecting the country (poor economic development, high inflation, very limited agricultural credit and strong competition from other Mediterranean countries) production is kept at a reasonably high level. Bulb growing will increase in the future when the Volcani research centre manages to grow new varieties. This research centre is Israel's great strength. It is at least as far advanced as the Netherlands in the area of breeding (particularly as regards the gladiolus).
Almost the entire production is exported. From a worldwide viewpoint, the level of exports is very low and they are targeted fairly strongly at Western Europe and the United States. Bulb exports can benefit from the sales machinery which has been built up in the floristry sector.

5.5 *Japan*

Supply and trade from Japan

Supply

Some years ago, the acreage in Japan fluctuated around 1500 ha. Very important plants are the tulip and lily, with a combined share of 966 hectares. The exact production value is unknown. On the basis of the fact that productivity is 1.6 times lower and the price of the bulbs three times higher than in the Netherlands, the production value is approximately 100 million guilders (producer level). The supply of bulbs has

Table 7: Exports of Japanese bulbs in terms of value and number.

Year	Value (mill. gld.)	Numbers (x 1000)
1980	8.40	23588
1985	10.30	22278
1988	3.60	9055
1989	5.02	7685
1990	4.60	7809

Source: Japanese export statistics.

Table 8: Imports from various countries into Japan (x 1000 gld.).

	1981	1985	1989	1990
Australia	8	37	42	28
China	2	310	48	30
India	48	85	13	31
The Netherlands	3182	6264	31490	52837
New Zealand	16	364	1362	1779
Taiwan	403	728	594	587
Thailand	0	153	110	236
Turkey	19	0	83	124
United States	141	1190	1102	1350
Others	13	293	223	141
Total	3832	9424	35067	57143

Source: Japanese import statistics

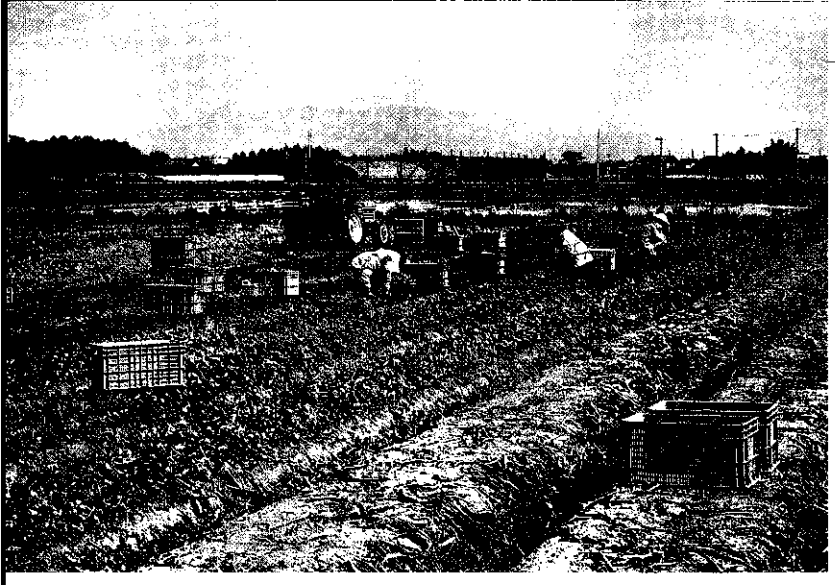
Production factors

	strong	weak
Geography		- The situation is unfavourable with respect to export countries - Mountainous character, difficult growing conditions
Climate	- Many types of climate, incl. maritime climate	
Raw materials	- Land in combination with rice growing environmentally friendly decontamination (flooding) - Sufficient water via irrigation systems (61% irrigated)	- Land exceptionally expensive (ƒ 233,-/m²) - 13% of land suitable for cultivation - Small plots - Marketability very limited because of family rights
Labour	- Much family labour	- Seasonal peaks, lack of outside labour - Many part-time enterpreneur - High wages
Capital	- Inflation 3,1% - Interest rate 7%	
Infrastructure	- Modern means of communication - Good transport facilities	- Late generation change in the nurseries - Fragmented cooperative sales - Very small nurseries (0,5 ha, bulbs 15 ares) - Poor storage capacity - Knowledge not available to all the nurseries
Knowledge infrastructure	- Well equiped research institutes - Breeding and tissue culture succesfull - High quality of bulbs through manual labour - Attention to bulbs at universities (biotechnology)	- Trade prefers Dutch cultivars - Practical research very limited - Information limited (recognation of diseases) - Scarcely any practical education

been growing in recent years, as has that of the other branches in the ornamental plant industry, under the influence of the reduction of subsidies on rice growing. Growers have discovered that bulb growing is much more profitable than the cultivation of rice.

Trade

Demand for bulbs has risen sharply in recent years. Japanese growers can no longer meet the increased demand for most species themselves. The supply from abroad has therefore been able to rise sharply as well. This is also due to the lifting of a great many of the quarantine measures for a large number of tulip and lily cultivars. The quarantine period for bulbs was formerly one year, which pushed up the prices of imported bulbs tremendously. The aim of the quarantine is to keep the country's own bulb-growing industry free from diseases which have not occurred in Japan as yet. The wholesale trade, supermarkets and forcers act as importers themselves. There are a total of between thirty and forty importing companies which, with a few exceptions, do not specialize in bulbs. 20% of all imported bulbs are used for forcing and 80% for dry sales. The growers generally use the dry-sale bulbs to expand the acreage or the range. Imports mainly come from the Netherlands and consist principally of tulips, lilies and gladioli.



In the case of the gladioli, the United States (aided by the better dollar/guilder exchange rate ratio) was an important competitor of the Netherlands. The value of the dollar has recently risen sharply, however, and exports from the USA have therefore become more difficult. A total of about 177 million bulbs, with a value of 67 million guilders, are imported per year. The value of imports has risen by 60 million guilders since 1980. (See table 8.)
Only a small part of the total production is exported. The main emphasis is on lilies. Japanese bulbs are offered in the Netherlands, the United States, the United Kingdom, Germany, Finland and the surrounding Asiatic countries (Korea, China, Hong Kong, Taiwan). Exports are declining because of problems with virus diseases and the relatively high production costs in Japan. (See table 7.)

Domestic market

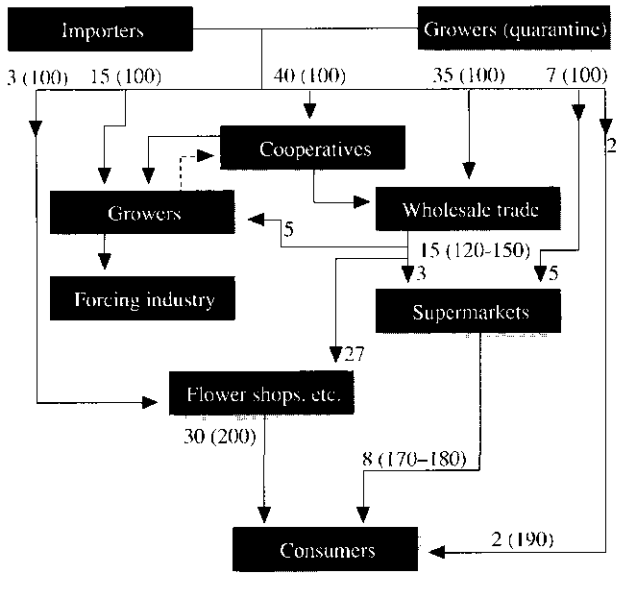
The market for bulbs was worth around 150 million guilders. Consumer demand is growing, but flower and plant purchases lag behind expenditure on other luxury goods. At present, however, there are signs of a 'green wave' in Japan so that the total demand for ornamental plant products is increasing. More money is being spent on brightening up the environment. Flower bulbs have a fairly good degree of penetration among the Japanese population. Some 30% occasionally buy bulbs, although not too many (23). This is mainly because of the high price which has to be paid for the bulbs (*f* 1.60 each).
An average of 40 guilders per family is spent on bulbs and seeds, the share of the seeds being negligible. Bulbs are mainly bought for the balcony or roof terrace. About 80% of families have space for planting bulbs outside. Tulip cultivars with soft colours, and oriental and Asiatic lily hybrids are particularly popular. The consumer can recognize some bulbs clearly; 90% know what tulips are. In the case of other plants the percentage is much lower, however (around 30%).
Quality is an extremely important product aspect for the Japanese.
The main purchasing channels are flower shops (30%) and garden centres (35%). The share of mail order firms is very low in Japan. The consumer has doubts about the quality supplied by this channel. Supermarkets are gradually gaining a greater share in Japan.
In the 1990/91 season Dutch exports to Japan rose by 50% compared with 1989/90. Tulips and lilies are by far the most important plants with a share of 43% and 34% of consumption, respectively. The share of these two crops has grown, while that of the hyacinth has fallen. This happened because this plant was only partly exempt from quarantine, for now that important species are also exempt a rise in hyacinth imports is expected.

Network

Cultivation
Many growers are members of a cooperative. Cultivation and trade in this country are based on a cooperative structure, with the cooperatives selling and dealing in virtually everything the growers cultivate and require. Among other things, they buy planting material and are responsible for the sale, promotion and inspection of bulbs. Research and information are also part of their range of tasks.

Distribution
The central link in the distribution of flower bulbs is the wholesaler and importer. Often one person performs both these functions. Packaging and administrative activities are handled by this section of the trade. The trade flow of bulbs from domestic production is shown in figure 5.3. as a percentage of the volume. Dry sales in Japan are still clearly concentrated on the

Figure 11: Distribution of flower bulbs in Japan (% of volume) and the margins (indices, the wholesale price is 100).



Source: Market Research on Japan, PVS.

conventional channels. In the least favourable case there are four links between the grower and the consumer. The wholesale trade collecting the products often consists of various tightly-knit links. Growers often sell their bulbs to the cooperative which, in turn, sells them to the wholesale trade. A notable feature in the distribution chain as compared with other countries is the large share of the flower shops and the small share of the mail order firms. This is now increasing, however. The importance of the supermarkets and home centres is also growing. This channel frequently uses exclusive and independent purchasing organizations. This is mainly the consequence of market liberalization. As a result, these chains can buy directly from exporters.
The selling season in Japan is very early. The margins achieved are: 20-30% at wholesale level and 70-100% at retail level.

Economic variables

Japan is the second largest economic power in the world, accounting for about 15% of the total world production. Much of this is exported to the United States and Western Europe. Average economic growth is 4% per year. The balance of trade is strongly positive thanks to the contribution made by industry (electronics and cars).
The strength of industrial development is resulting in a decline in agricultural production, among other things, because of labour being attracted away from agriculture in which only 7% of the population is now employed. Production has gone down. The index fell from 107 to 99 in the period 1985 to 1990.

Government

The government mainly plays a part in the importation of bulbs. Attempts are being made to keep diseases out of the country by imposing quarantine measures.
In recent years, however, these measures have been relaxed under pressure from international bodies.
Besides regulating imports, the government tries to promote domestic cultivation of various crops. For example, rice growing has been stimulated for many years in order to make the country self-sufficient.
A start has now been made with stimulating ornamental plant cultivation in order to meet the growing demand for these products.

Summary and prospects

In the world trade in flower bulbs, Japan is only important as an importing country. Imports have risen sharply in recent years. It is likely that these will grow further under the influence of the removal of the quarantine measures and the 'green wave' sweeping over the country. Japan is losing ground in the area of exports. High production costs and virus problems play an important part here. In addition, the domestic market is growing, so that everything produced can be sold in the country itself. No great growth in productivity can be expected in the Japanese bulb-growing industry because of its extreme smallness of scale. This can scarcely be eliminated because of the prevailing law of inheritance. Because of the relaxation of restrictions on imports, there is a high probability that the industry will lose ground because of the high price (resulting from the intensive use of manual labour). It will not disappear completely, however, because that same manual labour is able to produce very high quality bulbs. If the Netherlands can offer bulbs of equal quality but at a cheaper price - e.g. by direct sales to the chain store business - it is conceivable that Japanese bulbs can be squeezed off the market. Without protection, the Japanese industry has little future.
Japan occupies a very prominent position in the breeding of flower bulbs (the lily). This is mainly concerned with building-in resistance to disease and tissue culture for the development of new cultivars. The Japanese consumer is reasonably familiar with bulbs. The degree of penetration is fairly high compared with Western countries. Expenditure will probably rise further because ever-increasing attention is being paid to creating a pleasant living environment. Japan is a large potential buyers' market because of the intensive urbanization.

5.6 The United Kingdom

Supply and trade from the United Kingdom

Supply
The United Kingdom is an important producer of narcissi at world level. Annual production amounts to about 30,000 tonnes of narcissi (90% of the production

of flower bulbs and the share is still growing). Of this, 23% is exported, 20% goes to the UK forcing industry and 57% to dry sales. 77% of the latter are intended for private customers and 23% for institutional use.
A strong point of English narcissi is that they produce relatively more flowers per kg than those from the Netherlands.
The range of narcissi is wide, but growers are still largely dependent on the Netherlands for new cultivars. The growth in narcissus production is influenced by the weak economy of the United Kingdom (the number of innovations is too limited). The total acreage here is rising and amounts to 5622 hectares. The total production value in the UK at present is 108 million guilders. Under the influence of low prices, the value is back at its 1985 level after initially being higher.

Distribution
About 800 million bulbs are imported annually. Some 95% of the imports come from the Netherlands, particularly tulips and 'other' species of bulbs such as anemones, snowdrops and crocuses. The Dutch share has risen at the expense of that of other countries. 25% of the imports are intended for the forcing industry. (See table 9.)
Bulb exports are falling as the result of increasing domestic consumption and a slowdown in production caused by the adverse economic situation in agriculture. (See table 10.)
A high proportion of exports go to the Netherlands. Total exports in 1990 were valued at 14.8 million guilders, with the narcissus accounting for 78%. The weight of exports was 7292 tonnes with an average price of *f* 2,000 per tonne. This is low as compared with other countries because of the high share of narcissi.
Two companies handle 85% of the exports. Bulb flowers (narcissus) have a 6% share in exports of agricultural products.

Table 9: Imports of bulbs, tubers and rhizomes into the United Kingdom by species and value (x mill. gld.)

Species	1980	1985	1989	1990
Hyacinth	9,8	11,2	8,8	9,3
Gladiolus	3,6	5,0	3,8	3,5
Narcissus	4,9	5,6	7,0	5,9
Tulip	15,4	20,6	23,2	21,9
Others	29,7	47,1	51,7	51,4
Total	63,4	89,5	94,5	92,0

Source: Eurostat

Table 10: Exports of bulbs, tubers and rhizomes from the United Kingdom by species and value (x mill. gld.)

Species	1980	1985	1989	1990
Hyacinth	0,1	0,0	0,0	0,1
Gladiolus	0,1	0,0	0,2	0,0
Narcissus	7,1	10,7	10,3	11,0
Tulip	0,1	0,4	0,1	0,1
Others (incl. bulb flowers)	4,1	5,2	2,6	3,6
Total	11,5	16,3	13,2	14,8

Source: Eurostat

Production factors

	strong	weak
Geography	- Situation of production favourable areas	- Flower bulbs and bulb flower production separate
Climate	- Favourable maritime climate for bulb growing	- Too hot in the south (many diseases)
Raw materials	- Good land available - Land cheaper than in Holland	- No extremely sandy soil
Labour		- Insufficient individual labour available
Capital		- Inflation 9.5% - Interest rate 14.8%
Infrastructure	- Growing areas close to municipal agglomeration - Good short-term storage - Good mechanization	- Access by road not optimum - Long-term storage problematical; means loss of quality
Knowledge infrastructure	- High level of knowledge in narcissus growing - Information reasonably well developed - Nursery management frequently from the Netherlands	- Government withdrawing from research - Little exchange of knowledge between nurseries

Domestic market

There are about 20.4 million households in the United Kingdom with over 15 million gardens. The percentage of families buying bulbs is approximately 1.5 times higher than in the rest of Western Europe (31%). On average, *f* 5.20 is spent on 17 bulbs.
The retail trade in bulbs had a turnover of 158 million guilders in 1988. Bulb buyers generally have a higher education and their income is above the average. The majority of the buyers have small families and are aged between 45 - 65. British producers seem to be confronted with a fairly critical domestic market. Interest in bulb species other than the narcissus, crocus and tulip is increasing. Bulbs are being sold with increasing frequency by garden centres at the expense of purchases from supermarkets. The position of the garden centre has always been strong. This can indicate that consumers want to be able to choose from a large range and appreciate information and quality.

Network

Cultivation
Average profitability in the UK is slightly lower than in the Netherlands. In certain areas, however, profitability is much higher because of a combination of flower bulb and bulb flower growing in the case of narcissi. It is hardly possible to grow most other bulb plants at a profit in the UK.

The growing areas are fairly concentrated in three regions: the East Midlands, the South-West and East Anglia. In addition, two important processing companies (storage, treatment, shipment, etc.) are located in two of these regions. The distance to the consumer areas is not very great and the growing areas are located close to the towns.

Distribution
The importers have joined forces in the Bulb Distributors Association, which mainly deals with quality and arbitration matters.
Some of the growers are members of a cooperative

which controls selling and processing. In addition, inspections are carried out among the growers. There is one auction in the UK: the Spalding Bulbboard Produce Auction. In 1981 this auction sold 4000 tonnes of narcissi and 40 million tulips. This, incidentally, is only a small proportion of the total trade in the United Kingdom.
Promotion is mainly focused on family consumption and is carried out by The Flowers and Plant Association (FPA). The main participants in the FPA are the retail trade organization (19%), the producers (16%) and the wholesale trade.

Economic variables

The standard of living in Britain is lower than that in the Netherlands. The British economy is in its deepest crisis since the Second World War. Inflation is extremely high. This also applies to unemployment. These developments have consequences for the provision of capital for investments. The growers mainly regard each other as competitors. Sometimes they combine forces in cooperatives for selling purposes.

Government

The role of the government is mainly stimulatory. After its marked withdrawal from agricultural research, only its concern with providing information is still of any importance.

Summary and prospects

The English narcissus is an important competitor of the Dutch bulb. It is gaining an ever-greater share of the North American market at the expense of the Dutch narcissus. The future of the English narcissus looks reasonably bright if the economy develops favourably.
English narcissi give more flowers per kilogram. As the result of specialization in these flowers the UK can meet the customer's wishes better than other supplier countries. The critical British consumer is stimulating a further development of the range. Thanks to a combination of flower and bulb production and the low land price narcissus growing is reasonably profitable.
Until recently, research for the narcissus-growing industry was at a high level and in the forefront as regards its knowledge of diseases and pests. The finance for this research has now been stopped, however. Financing it from the sector's own resources presents a problem because it is too small for this. As far as new cultivars are concerned the industry is largely dependent on the Netherlands.
Plants other than narcissus play a subordinate role.
The United Kingdom is unable to offer a full range of bulbs. It is at a disadvantage here compared with the Netherlands. There will probably be little increase in exports of species other than the narcissus in the near future. Increasing domestic consumption is absorbing the supply, which is not growing.

5.7 The United States

Supply and trade from the United States

Supply
The acreage used for bulb growing in this country has been continually decreasing in recent years. The main reasons are the disproportionately sharp rises in production costs and the lack of disease-resistant varieties. In 1974 there were still 3400 hectares under cultivation with bulbs, of which only 2800 ha are now left.
The main plant is the gladiolus which takes up a surface area of 1000 ha. Some of the bulbs are also used for the cultivation of cut flowers. The distribution of the range in the United States is as follows: gladiolus 38%, lily 28%, narcissus 8%, tulip 5%, others 21%.
Knowledge of cultivation methods is increasing in the USA, so that the American grower is raising the production value per ha. The estimated production value in 1989 was 70 million guilders.

Trade
About 1.6 billion bulbs are used in the United States. Approximately 60% of these come from the Netherlands, 20% from other countries and 20% are produced in the USA itself. The Dutch share of US imports is 86%. As a result of the strong competition from the Netherlands the number of nurseries in the USA has declined sharply: from 1050 in 1982 to 559 in 1987. During that period, however, the average nursery area rose from 2.7 ha to 4.6 ha.
Between 1982 and 1987 the sales value fell from 94.5 to 67 million guilders. Only 17% of this was exported. Exports are worth about 12 million guilders. Canada, The Netherlands and Italy are important markets. (See table 12.)

Table 11: Imports into the United States (x mill. gld.).

Countries	1980	1985	1988	1989
The Netherlands	89.1	172.8	165.8	160.9
Canada	.	.	36.5	11.2
Israel	.	.	5.3	5.1
Belgium	2.9	3.2	3.7	3.3
United Kingdom	0.5	4.1	3.2	2.8
Others	.	.	7.7	4.3
Total	101.3	244.0	222.2	187.6

Source: U.S. General imports

Table 12: Exports of bulbs, tubers and rhizomes from the United States (x mill. gld.)

Country	1980	1985	1988	1989
The Netherlands	1.9	2.2	1.6	1.4
Canada	.	1.9	3.0	3.5
Italy	0.0	0.0	0.0	2.1
Spain	0.0	0.0	0.0	2.0
United Kingdom	0.2	0.2	0.3	0.4
Japan	.	0.3	0.5	0.0
Others	.	2.8	1.5	2.7
Total	12.1	7.4	6.9	12.1

(0.0) = Counted with others.
N.B.: in 1989 Cichorium was counted along with the flower bulbs.

Source: U.S. General exports

Production factors

	strong	weak
Geography	- Good position with respect to the largest trading partner, Canada and reasonable with respect to Central and South America - Production areas close to population concentrations	- Poor with respect to Europe
Climate	- There are production areas with a maritime climate	- Climate too hot for producing
Raw materials	- Land is cheap - Ample scope for crop rotation - Adequate water supply	- Soils are generally heavy
Labour	- Supply of unskilled labour adequate and cheap	- Skilled labour limited
Capital	- Inflation 4.8% - Interest rate 5.4%	
Infrastructure	- Good roads, extensive air traffic - Good storage facilities	- Railways limited - Knowledge of cultivation from Dutch origin, not adapted to American conditions
Knowledge infrastructure	- Only research at high level of generalization	- No information - No specific education in the flower bulb sector

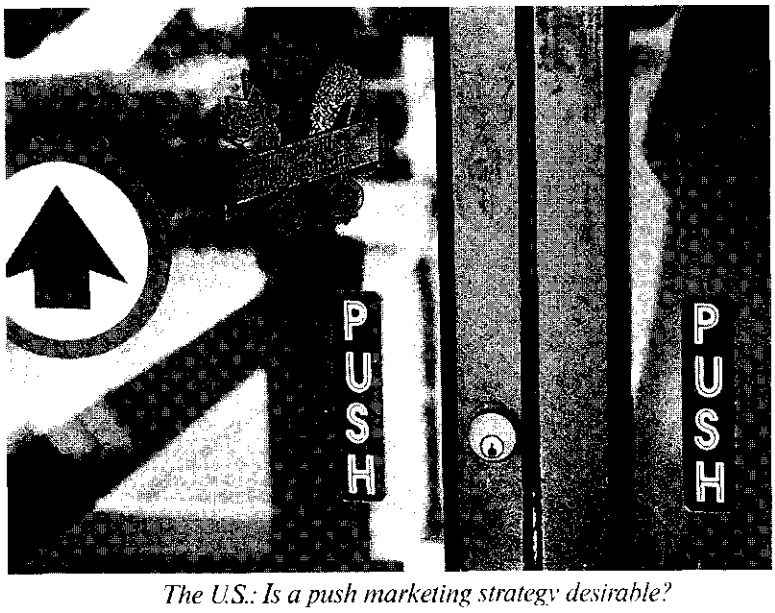
Domestic market

There are some 85 million households with about 55 million gardens. Around 40 million gardens are used for ornamental purposes. The average family income is $30,000.

The consumer market for flower bulbs is not strongly developed and is characterized by a low degree of penetration with low consumption. Because of the large number of consumers the market is significant. American consumers generally have little knowledge of bulbs.

Bulbs are mainly bought by older people with a good job, higher education, their own house with a garden, and a fairly small family.

Sales to consumers and (forcing) nurseries have risen sharply since 1980. The market's reliance on imported supplies is strongly influenced by the dollar exchange rate. When the rate is low, it is more difficult to sell bulbs in the United States. The ratio between the forcing and dry sales segments (33:67) is stable. The dry sales market can be subdivided into consumer sales (80%) and sales to the government and firms for garden use (20%). The share of the second segment is increasing.



The U.S.: Is a push marketing strategy desirable?

In autumn, about 9% of the population buy bulbs, about 45 bulbs being bought for 13.1 dollars per purchase. The expenditure per inhabitant is 1.2 dollars. The main buying channels are mail order firms and garden centres.

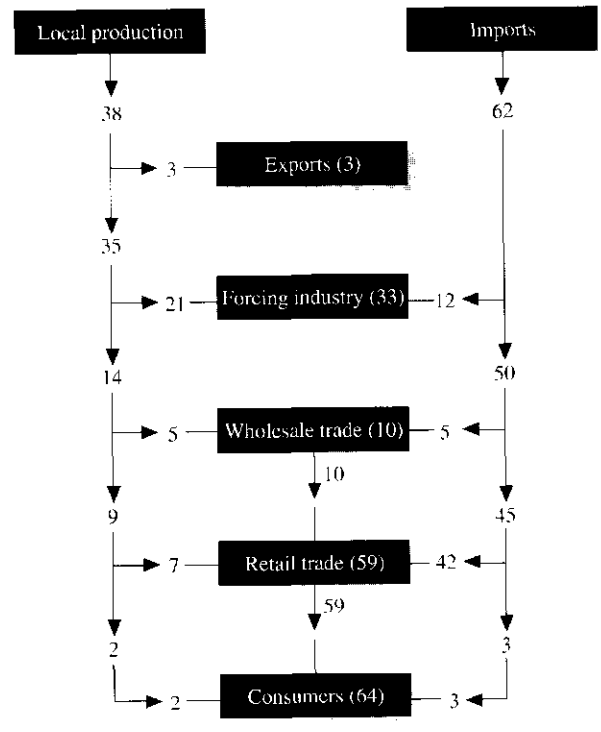
Because of the absence of any other good outlets, these two combined have a market share of over 70%. (See figure 12.)

The consumption of Dutch bulbs in the United States fell slightly in 1990/1991 due to the low dollar exchange rate and the Gulf War. In the '89/'90 season growth was still running at 13%. In the years prior to that, there was a decline in bulb exports to the United States, also as a result of a low dollar exchange rate. Demand in the United States is now at about the 1985/1986 level. The main plants exported to the United States are the tulip (27%), gladiolus (18%), iris (12%), crocus (7%) and narcissus (7%). The share of the tulip and iris has fallen slightly in recent years in favour of the gladiolus and lily.

Networks

The importers are organised in the North American Flower Bulb Wholesalers Association. They cooperate in the marketing field. The organisation takes part in discussions with the Dutch exporters. Growers are often organized on a regional basis. Because of the great distances, there is no strong national growers' organization.

Figure 12: Trade flow of flower bulbs in the United States (shares in percentages)



Source: Country Note on the United States, PVS
(The figures in brackets show the total per channel)

Economic variables

The USA has a very liberal market economy in which the government intervenes in a very limited way. After the Gulf War, economic activity picked up again because consumers regained confidence in the future. Generally speaking, it may be said that the United States economy is one of the strongest in the world, although the balance of payments is at present showing a substantial deficit. The dollar is the most important currency in international trading.

Government

Trading in flower bulbs takes place under a strict phytosanitary régime that can vary from state to state. California has the strictest regulations in this field. Strict rules also apply to the use of pesticides. International trading is also subject to strict phytosanitary requirements. This hampers trade.

Summary and prospects

The American flower bulb sector mainly concentrates on the domestic market. Production factors such as raw materials, climate, unskilled labour and infrastructure present few obstacles to the development of the sector. On the other hand, the knowledge infrastructure is very moderately developed. Education at industry level is virtually non-existent. At university level, attention is paid to the subject in some institutions. Other weak aspects are the lack of information and growers' networks. The USA relies on the Netherlands for planting material, machines, and to some extent, for knowledge. The quality of the products is good. Since sufficient land is available, a crop rotation scheme of 1:4 can be maintained. This is favourable for suppressing disease and limits the need to use pesticides etc.
On the domestic market, American bulbs are faced with strong competition from the Netherlands. A great challenge for the bulb growing industry is to open the American market up further and generate more consumer interest in bulbs. This will then create a financial framework within which the knowledge infrastructure can be improved.

5.8 Poland

Supply and trade from Poland

Supply
A small part of the production is intended for export but the major part goes to forcing firms in the country itself. In the past, exports were mainly sent to socialist countries. After democratization exports to these territories have fallen and are also hampered by unfavourable exchange rates.

Trade
Flower bulbs are imported almost exclusively from the Netherlands. To a large extent, this consists of planting material, for which Poland is entirely dependent on the Netherlands.
Imports of bulbs for dry sale are increasing, for because of poor presentation Polish bulbs cannot compete with Dutch bulbs in the shops.

Table 13: Polish imports and exports from and to the EC (mill. gld.)

	1980	1985	1988	1989	1990
Imports	0.6	5.2	2.0	1.6	1.9
Exports	0.0	0.0	0.1	0.2	0.5

Source: Eurostat

Production factors

	strong	weak
Geography	- Situation favourable with respect to the European market - Low transport costs	
Climate	- Good climate in NW	- Moderate around Warsaw
Raw materials	- Adequate sandy soil, low land prices - Adequate water supply	- Fuel prices high
Labour	- Plenty cheap unskilled labour	
Capital	- Stated-owned companies could easily obtain money	- High inflation (585%), high interest rate (101%) capital is expensive for private firms and difficult to obtain
Infrastructure		- Low road density - Obsolescent structure - Limited telephone communication
Knowledge infrastructure	- Well developed entrepreneurs - Research well organized - Sufficiently skilled labour available	- Information moderately developed - No study clubs

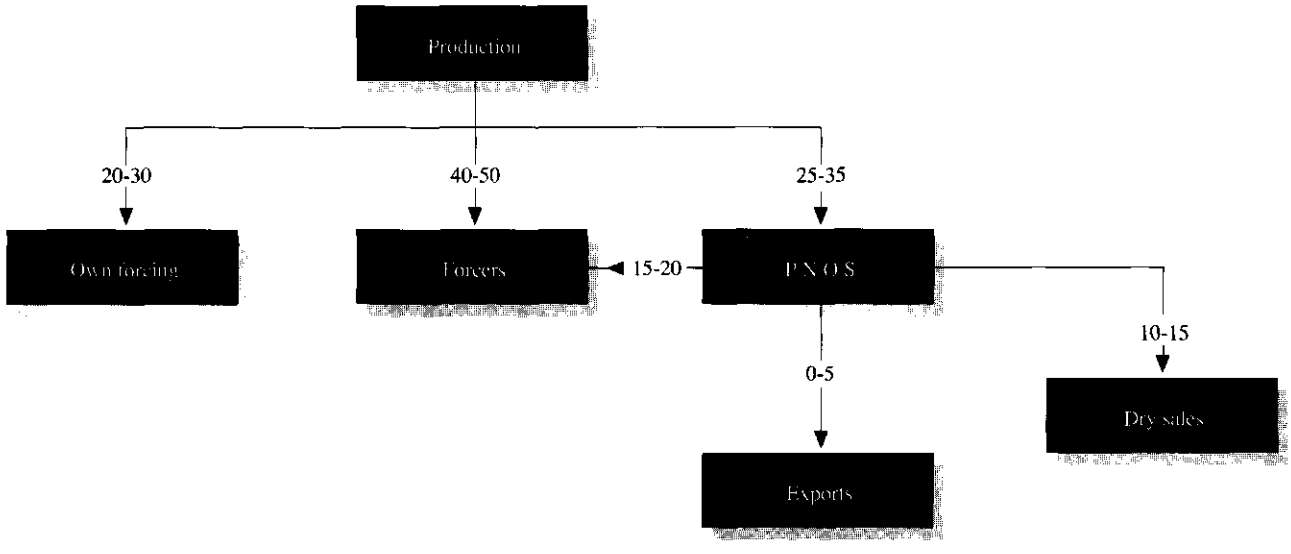
Domestic market

Most of the flower bulbs are forced and sold on the domestic market. The Polish consumer has very limited buying power. As a result consumer purchases of flower bulbs are at a low level. The Polish range is small and the bulbs are poorly presented. Consequently, Polish bulbs are increasingly encountering competition from Dutch varieties.

The most frequently sold plants are the tulip, gladiolus and narcissus. The bulbs are mostly bought in garden shops.

The trend of demand is very difficult to predict because the developments following democratization are not clear. If events move at the same rate as in the past year there cannot be much hope of a marked change in demand.

Figure 13: Trade flow of flower bulbs in Poland (production = 100).



Source: Note on Flower Bulbs for Poland, PVS.

Network

Sales are largely made through the PNOS (State Trading Cooperative). This organization handles both domestic sales and exports and gives some information to the growers. In addition, a proportion of the bulbs are intended for forcing in its own production company and in other nurseries. (See figure 13.)
The market gardeners are organized in a union which is a member of various organizations and has intensive contacts with the Netherlands. The aim of the union is to promote horticultural production and defend the interests of the growers. It also organizes symposia, exhibitions and study trips. Among other things, the organization is responsible for the Polish entry at the Floriade.
In addition to the growers' trade union, there are some ornamental plant associations which have very good contacts with universities and institutes.
The state-owned companies and cooperatives are also united. The present importance of this is unclear, however, because many reorganizations are taking place.

Economic variables

The economic situation in Poland is poor. Together with the IMF (International Monetary Fund) an attempt is being made to get the economy back on its feet again.

Government

The Polish government's top priority is food production. No support can be expected for bulb growing. All the subsidies for this have been withdrawn.
The government does, however, still grant facilities for exports.

Summary and prospects

Bulb growing is reasonably well developed. The production factors for successful growing are in place. There is sufficient education, research and suitable land. Domestic sales are stagnating, however, because of the adverse economic situation, low consumer purchasing power and poor presentation of the products in the shops.
Imports are also under pressure because of the unfavourable exchange rate. In the future, better products will have to be grown in order to be sure of some domestic sales. The weak economy combined with the inadequate infrastructure and telecommunications are at present acting as a powerful brake on the development of bulb growing.
If the Polish economy can recover, the country has the potential to become an important flower bulb producer at world level because of the favourable production conditions and low costs.

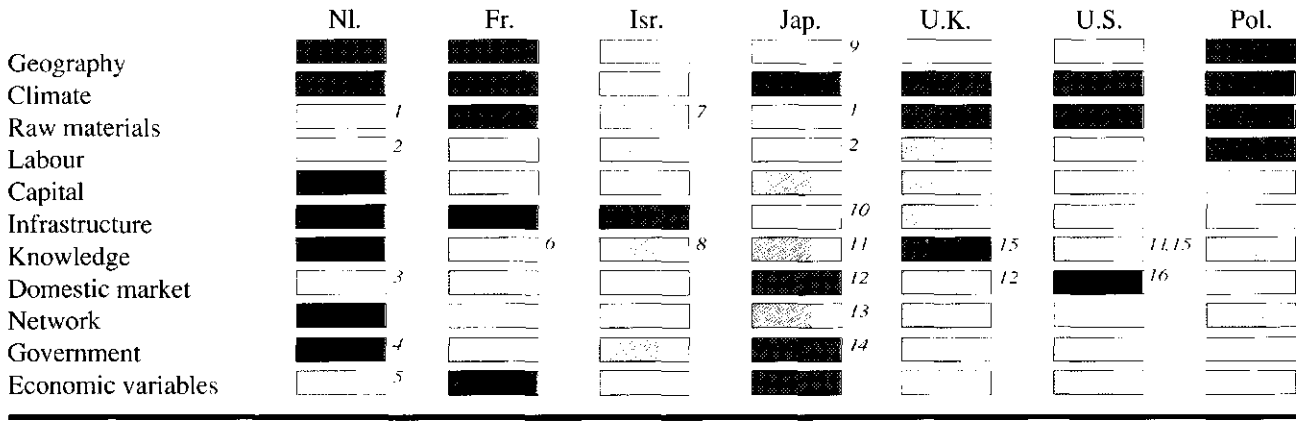
6. International competitiveness

Chapter 5 presented an overview of the competitiveness of the main countries which engage in bulb growing. The mutual competitive positions of these countries will now be analysed in this chapter. (See table 14.)

The Netherlands has developed a wide range based on earlier innovations. The country has a strong worldwide presence, foreign products often being used to supplement the range. Many countries are also dependent on Dutch knowledge and networks. The Netherlands is a monopoly supplier for flower bulbs, which are encountering competition from other products in the area of consumer expenditure, however. The high production costs (land and labour) are offset by the high productivity and efficient use of other production factors. Innovations are still much too limited to expanding the range. The domestic market is not highly developed.

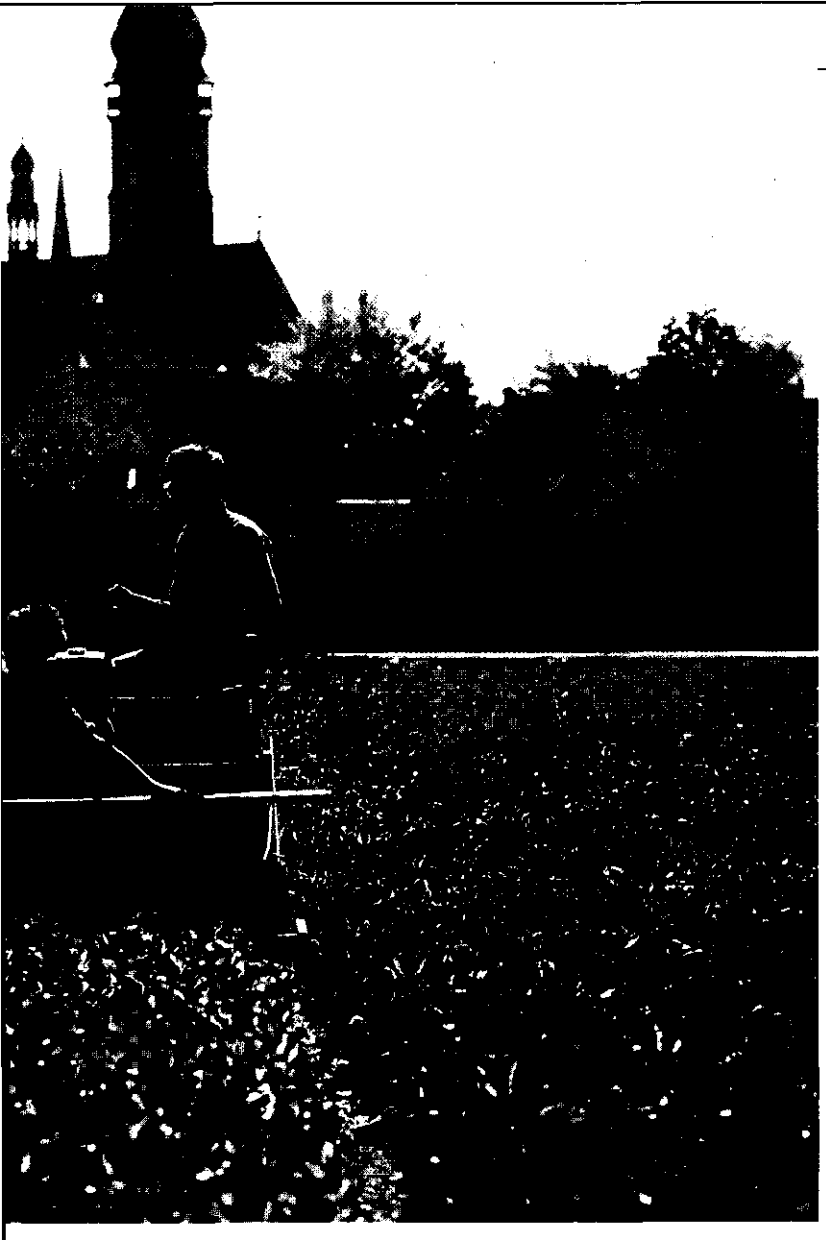
France has a strong domestic market and well developed production factors for both the tulip and the gladiolus. The French bulb sector is therefore in a position to enter into competition for these products in its own domestic market and on the South European market, particularly with the Netherlands.
If France is able to strengthen its own networks and the government succeeds in establishing a plan to stimulate horticulture it can enhance its position. It is also conceivable that France will increasingly become part of the Dutch network.

Table 14: Comparison of competiveness



Explanatory note:
1. land expensive
2. expensive
3. small, not very critical
4. environmental legislation imminent
5. individualistic entrepreneurs
6. source: The Netherlands
7. water
8. information to nursery industry
9. with respect to export markets
10. small scale
11. practical information and instruction weak
12. critical
13. strong breeding sector
14. market protection
15. no grower groups
16. high potential
17. food has priority

Source: Rabobank



Israel is particularly innovative in the area of breeding. In addition, the relatively small branch is fairly tightly organized, among other things, through the state trading organization together with the floristry sector. In small sub-markets (Tazetta narcissus) and in the area of breeding Israel has competitive strengths which enable it to vie with the Netherlands.

Japan is only competitive on its own domestic market. The degree of openness of the Japanese market has a great influence on the real competitive relationships. Japan is very innovative in the breeding field (lily) and strong in the factors domestic demand, government and economic variables. The high land prices and labour costs result in high overall costs. If Japan works on these, it is questionable whether the Netherlands will be able to bridge the great distance economically compared with the Japanese grower and trader.

The United Kingdom is a formidable competitor for the Dutch narcissus on the UK domestic market and in the USA. As regards most factors, the conditions are comparable with those in the Netherlands. The latter's trump cards are the wide range of bulbs and the United Kingdom's dependence on Dutch parental material.

The **United States** mainly focuses on its domestic market, where its own gladiolus, tulip, lily and iris have a relatively strong position. The composition of the range is the same as in the Netherlands, except for the gladiolus. On the other hand, the Dutch bulb sector is stronger as regards factors such as networks and knowledge, as a result of which the American bulb sector is losing ground. The US market is risky for importers because of the unstable dollar exchange rate and the relatively high transport costs.

Poland appears to offer favourable prospects for the establishment of production companies because of its good climate and the availability of land and labour. As a result of the poor general economic, political and social situation Poland will probably become a location for migrant (Dutch) growing companies rather than a trade competitor.

7 Strategy for the Dutch flower bulb sector

The Dutch flower bulb sector has a strong position on the world market which has grown up historically. The Netherlands is by far the largest international supplier of knowledge, parental material, bulbs and bulb flowers. This apparent monopoly position is only relative, however. In particular, there are signs of saturation in the dry sales segment, while competitive products in the same market (such as perennials) are clearly growing in volume.
A strong aspect of the bulb sector is that more markets are being serviced. Saturation in one market can be offset by growth in another. For that matter, as a result of bulb flower exports the bulbs forced in the Netherlands can influence exports of bulbs for forcing.
Developments in the bulb flower market are still reasonably favourable, because they benefit by the innovative trends in the cut flower sector. Here, too, however, market segments have been signalled which show signs of saturation.

7.1 Market strategy

The flower bulb sector appears to have reached a certain sales maximum for many products. Sales of a number of products have even fallen. This situation is mainly caused by the fact that the supply - in the form of the range, presentation and keeping qualities - is not generating sufficient incentives to stimulate demand further. The purchase of bulbs and bulb flowers is increasingly a matter of impulse buying. Lower margins are achieved in this market segment. There has been a shift in the market from the sales channels to the chain store business. With the marketing techniques used at present, the markets are showing signs of stagnation in most countries. In view of its strong position in the world the Netherlands must opt for a strategy which reflects its leading role more emphatically once again and enables margins to be increased. Attention here is focused more on customer-oriented thinking. There must be greater specialization in particular products and particular markets (market segmentation). In that way the Dutch bulb-growing industry can stand out more distinctly from its competitors and competitive products. This is only possible if the present small-scale businesses, in the field of both cultivation and trading, cooperate more and thus achieve greater power on the market and more efficient investments through specialization of activities.
The possibility of developing the nearby 'domestic market' more into a kind of test market for innovations should be considered. 'Nearby' includes Germany and Belgium as well as the Netherlands.

Market segmentation

A number of market segments are further distinguished in this chapter. Several strategic options which can contribute to increasing sales and/or profitability are indicated for each of them. These options basically relate to the bulb sector as a whole.

Bulb flowers
The total cut flower market is still growing strongly (forecast of the Flower Marketing Bureau for Holland (BMH): +3.5% per year). It is important to maintain and/or strengthen the position of the bulb flowers in this segment. The winter supply is under pressure from other cut flowers because of higher imports and an increase in domestic supplies resulting from new growing techniques (assimilation lighting). The storage life of cut flowers is also improving relatively faster than that of bulb flowers. Aspects such as 'a harbinger of spring' and 'specific colouring' must be exploited in order to maintain market shares. A good example of the latter can be seen in the cultivation of tulips and hyacinths.
A strong development of both the product and the range can be seen in lily-growing.
Another aspect to be examined is how the market share lost by the other bulb flowers can be regained in the range of cut flowers.
The following market segments can be distinguished in this respect:
Impulse buying products
The primary marketing instrument is price. The position can be strengthened by certifying quality and

introducing varieties with a long storage life. The marketing efforts should be aimed at preventing dumping of the lower quality end on the market. Improvement is essential because the product in this segment is vulnerable (price erosion) because of the increasing power of the chain store business.
The segment must continue to be serviced to avoid leaving loopholes for third parties.
The marketing effort should be aimed at having the product constantly present during the selling period.

Quality segment for cut flowers
This should be specially promoted. Intensive monitoring of both the range and its quality is essential. This calls for specialized businesses. Thought must be given to the use of quality certificates. Distinction can be created by introducing brands. This segment can generate a positive effect which enhances impulse products.
An endeavour must be made to extend the supply season.

Potted bulbs
In this segment, a relationship must be sought with the market segment comprising perennials, balcony plants and indoor plants. The emphasis should be on long-term blooming.

Flower bulbs (dry sales)
A wide range, the ability to meet the strictest phytosanitary requirements, fast distribution and communication are among the strengths of the Dutch sector.

Quality segments - where range renewal links up with consumer wishes and a relatively high price is commonplace - constitute an attractive market.

Two segments can be distinguished here:
- traditional: an impulse market with sales through the chain store business. The packaging must be attractive. High efficiency is needed in the business chain.
- fashionable: rapid innovations must be possible, e.g. using biotechnology. It is necessary to look for niches in the market and aim at specific presentation.

In recent years, for example, there has been a trend towards nature gardens. This calls for an adapted range of flower bulbs, e.g. for use as undergrowth, with natural colours and other flowering seasons as well as plants requiring less care.

Flower bulbs (forcing industry)
One of the main aspects is the ability to guarantee quality. It is even more important to the trade for the customer to be satisfied in this respect than in the case of dry sales. It must be possible to give guarantees with regard to the method of growing and storage treatment (a 'bulb passport'). Another possibility is the provision of advice on forcing. More knowledge about structural consumer trends is very desirable.

Market research and promotion

It is important to find out the causes of stagnation in the existing market segments. This can provide better support for the present markets. Information is needed about consumers' wishes concerning the range, quality, distribution and presentation, as well as the budget they have available for buying bulbs. New and attractive segments can be identified in this way. Present-day market research is very historically and quantitatively oriented. This must be reinforced with more future-oriented, qualitative research to enable a segmentation strategy to be developed. Breeders, producers, auctioneers and traders will have to be informed about future requirements.

General marketing

As already mentioned, the marketing effort must be aimed more at an optimum approach to working on market segments. Here adding value - i.e. increasing margins - is a more central aim than increasing efficiency alone. Integrated chain control can be an aid in this respect.
One handicap in marketing bulbs is that the species and quality of the bulb - apart from its size - cannot be seen by the buyer externally. As a result, competition is too apt to be based on price and the image of the distribution channel. This is also resulting in erosion of the margins for the bulb sector. The product image can be strengthened by certification, introducing

branded items, special packagings, etc. The phenomenon of 'business relation batches' can also be strengthened.
A great deal of research and organization is needed for the development of market segments. This is very expensive, requires a great deal of time and will have to be organized jointly by the businesses currently active in the industry. It is questionable whether the bulb sector as a whole is large enough to develop every market segment, even with optimum cooperation. It is necessary to find out what segments in this sector link up with other product segments such as cut flowers, perennial plants and indoor plants. The possibility of organizing joint in-depth market research and market development can then be considered. This cuts down costs. As an extension of this, distribution can be further developed and improved.
It is conceivable that every segment will get its own product range and form of distribution, with demand and supply being optimally matched. In this respect, quality and margin are more important than volume. The Integrated Chain Control Concept (ICCC) will then have to gain wider acceptance.

7.2 Distribution strategy

- Retail trade
In many countries of the world developments in the retail trade are characterized by concentration. Strong chains are emerging with special shop formulas. These developments are occurring both in the general retail trade (chain store business) and in the specialized retail trade (garden centres). The market power of the retail trade has greatly increased as a result. On the other hand, retailers are increasingly being forced to operate more professionally. Because of declining margins, it is necessary to optimize the shelf returns as far as possible. Flower bulb products are an impulse item for the chain store business, so the frequency with which the consumer visits them is extremely important.

The flower bulb sector is being forced to confront professionalism in the retail trade with its own professionalism. This can only be done by forming strategic alliances and achieving integrated chain control, both horizontally and vertically.

- Wholesale trade
The bulb trade is a small-scale activity. There are between 150 and 200 specialized wholesalers. The other 500 also have growing activities in addition to the wholesale function. The shrinking margins in the retail trade affect the wholesale business. Because of the developments described, selling expenses will become higher. One possibility for the wholesale trade is to specialize in markets and products. This offers opportunities for building up a distinctive and permanently profitable position. Concentration and cooperation will be essential here.

- Auctions
The agencies/auctions in the flower bulb sector play a pivotal role in bringing demand and supply together. For the majority of them, that consists of acting as middlemen in buying and selling activities. The market developments are making it necessary to develop new activities. The existence of an efficient open market structure, professionalization and specialization are vitally important for the sector. The auctions could play a pioneering role, comparable to that in the floristry sector, in connection with strategic alliances and making the market more transparent. Examples of this are the development of a databank with information on the demand and supply situation in its own sector - as happens in tree cultivation - and the development of quality certification.

7.3 Growing strategy

A market segmentation strategy also has consequences for the bulb growers. In order to service the market adequately, producers will have to specialize in products and qualities, depending on the segment's requirements. There will then be a greater need for market information (consumer trends). A smooth throughflow of market research data to the producers as well will then be more urgently necessary. The point is that specialization increases the need for investment. There will be more frequent crop rotation, parental material will have to meet different requirements and there will be faster changes in the range. Exchanging knowledge about market trends will become more important. This means that there must be an organization active in the sector which can act as a coordinator.

New breeding and propagation techniques make it possible to react more quickly to the market. These developments are strategically important for the bulb growing business. In addition, market trends can be manipulated by clever active marketing.

Side by side with the market developments, government requirements also play a part. One of the constraining factors is environmental policy, which will result in increased growing costs. Production will shift to other parts of the Netherlands (there are possibilities for this) and even to countries abroad. The higher costs can no longer be offset by forcing other players off the market. This makes it more necessary to add greater value to the chain.
The environment and marketing are inseparable from each other. The possibility of increasing cooperation/ investments in breeding methods must be examined. The market is too small to have the same (expensive) research carried out twice by different companies/ organizations.

Summing up, it may be said that the Netherlands appears to be a (supply) monopolist. Developments in society are such, however, that the emphasis in the business must be shifted from range innovation and thinking in terms of cost price to innovation in selling methods.
Because of its innovative nature, the bulb sector will be able to reinforce its international competitiveness. The next move is up to the sector itself.

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