SOUTH AUSTRALIA

SOUTH AUSTRALIAN ORNAMENTALS INDUSTRY DEVELOPMENT PLAN

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PRIMARY INDUSTRIES
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SOUTH AUSTRALIAN ORNAMENTALS INDUSTRY DEVELOPMENT PLAN

December 1995

This plan is a working document for consultation and negotiation between PISA/SARDI and other industry stakeholders. That consultation is crucial in assisting PISA/SARDI to progress this strategic plan into operational plans for implementation in 1996/97.

EXECUTIVE SUMMARY

INDUSTRY VISION

To expand production and sales and enhance the competitiveness and sustainability of South Australia's cut flower and nursery industry in domestic and international markets. It is envisioned that through provision of new capital, R&D, training and market development the gross value of the industry will grow from $50m to $80m (60% growth) by the year 2000.

PURPOSE OF THE PLAN

The major purposes of the PISA/SARDI Industry Planning process are, in conjunction with Industry, to:

a examine existing industry profiles, structures and processes (including marketing arrangements, relevant legislation and so on) and to determine their strengths, weaknesses, opportunities and threats. This will enable us to determine the critical factors that enhance or impede the international competitiveness of the industry in South Australia and consider industry strategies to address those factors, and

b determine and evaluate the major opportunities for sustainable economic development in our industries, and the role of PISA/SARDI in assisting industry to capture those opportunities. By aligning our resources in PISA/SARDI to reflect the identified opportunities, we will maximise our impact as an Economic Development Agency.

OVERVIEW

Native flower production, growth and profitability will outstrip traditional production in the next five years, in South Australia.

Appropriate marketing arrangements including structure of exporting and producing firms will be critical to the industry's future. A major opportunity exists for the industry to accelerate exports of Nativeflowers and to a lesser extent, traditionals.

Prospects for growth of the nursery industries are sound with projected income growth of about 10% pa mainly directed towards the domestic market.

The values of opportunities for industry development quantified in this document are:

- **Native Flowers**

  The domestic potential for native flowers is to grow 10% pa. from a base of $6m to $9.66m by the year 2,000.

  The export potential for Native flowers is to grow substantially by 300% from a base of $1.5m to $4.5m by the year 2,000.

  An investment of $11m will be required by the industry to achieve these growth levels

- **Traditional Flowers**

  The domestic potential for traditional flowers is to grow 10% from a base of $14m to $22.5m by the year 2,000.

  The export potential for traditional flowers is to grow substantially by 500% from a base of $0.2m to $1.0m by the year 2,000.

  An investment of $9m will be required by industry for domestic expansion and $1m for export growth.

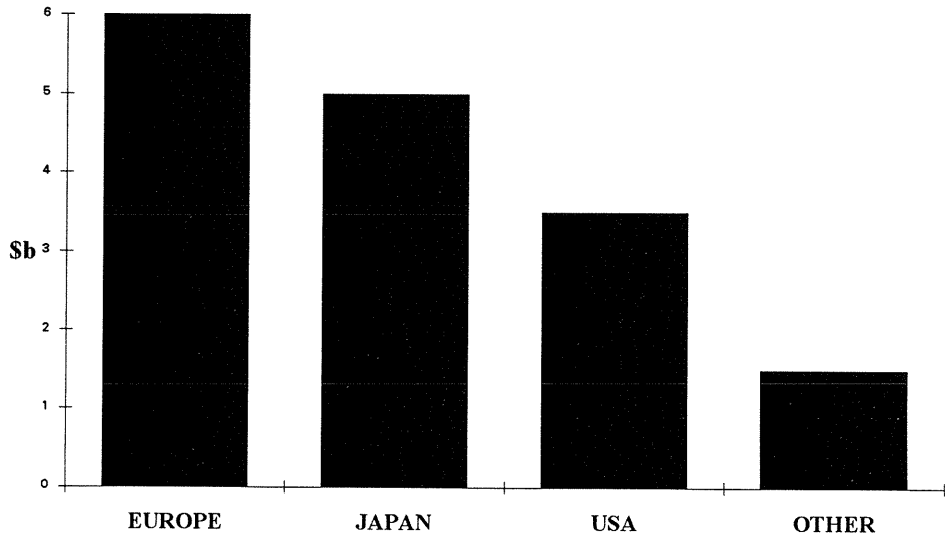
- **Nursery**

  Nursery industry growth will be 50% over 5 years, largely through domestic sales increasing at 10% per annum growing from a base of $30m to $45m by the year 2,000. Estimated capital for expansion is $9m.

TRADE AND GLOBAL PROSPECTS

The world market for cut flowers and nursery products is significant and expanding, although Australia's share is small.

Major Consuming Countries - Floriculture



Australia is physically capable of producing rare and unique products, particularly Native flowers.

SA has been unable to date to achieve production on a sufficient scale and quality to develop a significant export industry. Export sales are currently $1.7m.(nursery and flowers).

FARM STRUCTURE, ECONOMICS AND MARKETING - FLORICULTURE

A critical weakness of the cut flower industry is its fragmented nature, with hundreds of small, part time producers preventing the emergence of a viable export sector.

Comparison of gross margins for waxflower production in WA and protea in Victoria and gross margins for banksia, leucadendrons and protea in SA shows that SA has production advantages. Where we may not be as efficient is in scale of production, a problem highlighted later.

However, a freight advantage over other Southern Hemisphere producers gives Australia a competitive advantage over lower cost producers in the transport area.

STRATEGIC ANALYSIS

To kick start the flower export sector will require a "quantum leap". The drivers of future growth will be:

- Rising consumer incomes in flower importing countries, particularly Asia;
- Growing awareness and appreciation of Australian native plants, and
- Commitment of new and existing growers to export.

Critical success factors to achieving the growth outlined in the vision are:

- Capital and associated structural development;
- Research and Development (R&D);
- Market development, and
- Training in marketing and production.

It also will require new entrants to the industry and renewed commitment of existing producers.

Opportunities for growth have been identified as:

- Cut flower value to rise from $20m to $37.5m over 5 years, and
- Nursery production to grow from $30m to $45m.

Capital required for the ornamentals industry to meet these goals is about $20m for production and marketing infrastructure.

The most likely base to achieve growth in the native cut flower industry in South Australia is that of establishments of 10 hectares and greater supplying central marketing groups formed largely for export coordination (see Appendix 1).

The strategic analysis and the opportunity values show that the greatest gains in relative terms will come from the export sectors of the cut flower and nursery industries. In absolute terms the domestic market for each industry is likely to earn the highest incomes.

PROPOSED PROGRAMS

Industry programs within which there may be opportunities for PISA/SARDI to contribute are listed below. Some of these are already being addressed, others are not.

- **Native Flowers**
  - Catalyst for capital attraction;
  - Industry / government resources be directed to improved market structures, market access and an agribusiness role;
  - R&D for new product and species innovation, quality assurance, benchmarking and cost of production studies;
  - Sustainability programs including Integrated Pest Management (IPM) systems, off label chemical use and chemical registration;
  - Industry and PISA sponsorship for coordination of a national industry organisation, and
  - Establishment of centres of excellence training in technology, business, communications and marketing.
- **Nursery**
  - R&D for new product and species innovation, product promotion and labour use efficiency and mechanisation.
  - Catalyst for capital attraction and formation;
  - Support for emergence of marketing structures for export;
  - Centres of excellence for training in technology, business skills and marketing, and
  - Nursery accreditation program.

OPPORTUNITY ANALYSIS

The Net Present Value (NPV) of cash flows associated with the opportunities identified for industry growth (after PISA/SARDI role and multiplier effect is considered) is $47.6m and the annualised benefit is $8.2m. In obtaining this NPV, Gross margins appearing in Appendices 2 and 3 were used. In addition sustainability benefits are estimated to be $76.24m (NPV). These NVP's are calculated to assist PISA/SARDI in identifying and prioritising potential departmental programs. The actual projects to be conducted by PISA/SARDI will be identified in the next stage of the planning process. Criteria such as the benefit/cost ratio and market failure will be used to assist in the prioritisation of potential projects.

SOUTH AUSTRALIAN ORNAMENTALS INDUSTRY DEVELOPMENT PLAN

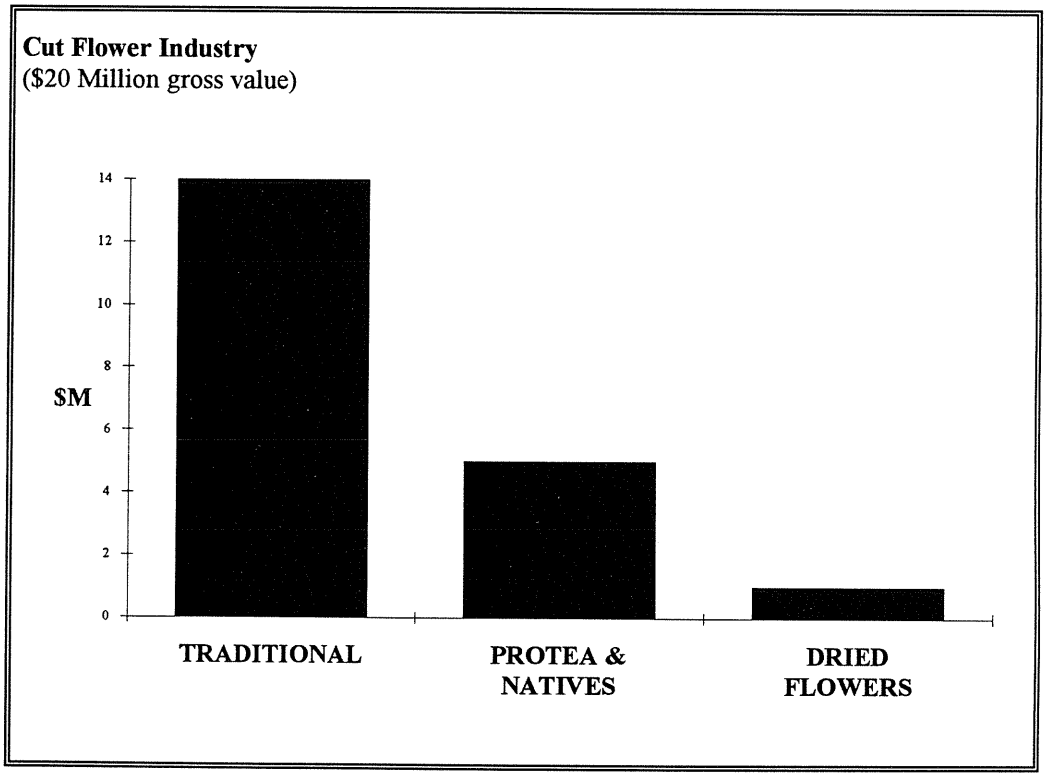
1 INDUSTRY POSITION

1.1 OVERVIEW

Almost all of SA's cut flowers and nursery plants have been sold domestically. Of the estimated combined value of production (to growers) of $50m, only about $1.5m is from exports (cut flowers).

South Australia's cut flower industry is valued at $20 million with key crops being:

- Roses (43%)
- Carnations (17%)
- Proteas (5%)
- Geraldton Wax (3%)
- Chrysanthemums (3%).



The value to producers of nursery plants including potted flowers, trees and shrubs is $28m (ABS). Sales of bulbs and orchids are significant.

Imports of nursery products and flowers has risen from $9.5 m in 1992-93 to $16m in 1994-95. About 50% of imports are nursery products - the balance being flowers. South Australia imports only 2 % of the national total directly.

While production of traditional crops (roses, carnations etc.) is increasing, native flower production is rising faster. Since 1985 exports of cut flowers and nursery products including bulbs have increased rapidly. The major exported crops are:

	1992-93	1993-94	1994-95
	$'000	$'000	$'000
Dried cut flowers	600	600	100
Cut flowers-fresh	400	300	490
Nursery products	400	1300	300

This compares with national exports of $34m in 1994/95. Of this amount $7.5m comprises nursery material and the balance cut flowers, predominantly native flowers.

1.2 EXPORT MARKETS

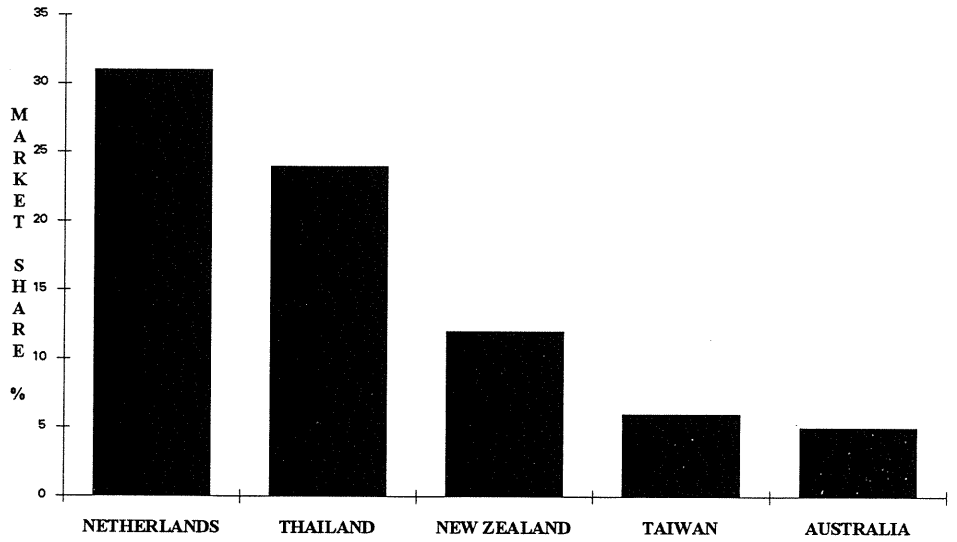
SA has exported flowers and nursery products to over 20 countries in recent years, mostly in small lots. Japan, USA, and the Netherlands are export destinations.

Much of SA flower and nursery produce is sold interstate while up to 40% of sales in SA are sourced from interstate. There appears to be obvious scope to replace these "imports" with locally grown product however the industry must become more competitive, particularly with interstate nurseries.

The world market for cut flowers is $34 billion. World trade in flowers is worth $4 billion and is expanding steadily. Australia has less than 1% of this trade. World cut flower and flowering pot plant markets particularly are expanding at 6 - 10% pa. Worldwide production is also rising and since this has exceeded growth in demand, prices have declined.

Of the world flower market, Native flowers are worth $400m. Australian native plants and Proteas comprise about 10% of the world native flower market . A proportion are not sourced from Australia.

Japanese Imports Of Cut Flowers (1992)



In summary, there are expanding markets for traditional and native (including dried) flowers. Australia supplies many of these markets. SA's place in expanding production is largely dependant on our ability to compete in world markets.

1.3 SA HISTORY - Cut Flowers

The history of the SA cut flower industry is chequered. During the last decade opportunities in world markets have been recognised, and drawn a response from several large entrepreneurial companies seeking to export to the Japanese market. These companies have recognised the requirement for scale, continuity of supply and quality. For the following reasons most of these large scale attempts to export flowers have failed due to:

- The market has been unstable;
- The supply of flowers has not met the demands of particular markets;
- Continuity of supply has been lacking;
- Lack of finance and funding for the development of integrated production and marketing companies, and
- Returns to growers have often been lower than from domestic sales.

At present there are three exporters located in SA who source cut flowers from SA producers and there are several medium scale established and emerging grower exporters sourcing additional material from local growers. Some material originating in SA is exported from other States.

1.4 ECONOMICS AND MARKETING PROFILE

To assess efficiency and profitability of the existing industry (native and traditional flowers), two models were established.

1.4.1 Native Flowers

Indicative costs and returns to produce native flower crops grown on a small holding are shown below. The analysis shows the potential for reasonable returns to capital and labour, particularly in the case of above average yields (10% above the base case). The main features of the farm are:

Native Flower Model		
	Average Yield	**Above Average Yield**
Total blooms produced all crops	522,000	574,200
Average price per stem	$0.26	$0.26
Gross Farm Income	$137,213	$151,073
Farm Profit	$31,261	$45,121
Return on Capital @ average price per stem	6.6 %	9.52 %

It is noted that for this farm, sales are made in bulk, packaging is done off farm and freight is paid by the buyer (see Appendix 2).

Profit is highly sensitive to certain parameters such as:

- Yield per plant
- Price per stem
- Labour cost

There is little sensitivity to costs and use of inputs other than labour.

A three to six hectare cultivated unit is considered the minimum to provide a full-time family living. Efficiency will rise for a larger farm and considerable economies arise in general labour and machinery costs as scale increases.

Prices will vary depending whether the flowers are fresh, dried or processed.

Costs of export are high. The high cost items include:

- Costs at destination
- Air freight
- Packaging
- AQIS inspection fees.

Example costs of drying and processing flowers are:

- colouring and dyeing 30c/bunch
- drying 30c/bunch
- preserving 90c/bunch

Typical add-on costs to export dried flowers are:

- Price to grower 100 (Index)
- Processing 65
- Exporter margin 15
- FOB $A price 180
- CIF $A price 200

Due to natural conditions, including climate and soils, South Australia has a competitive advantage in production of many traditional and native flowers. Some of the most marketable species, including roses, proteas, leucadendrons and banksia grow better here than in the rest of Australia. Favourable features of SA for native flowers are:

- The Adelaide Hills and South East have selected areas where the climate and soil conditions are excellent for some native flowers including proteas;
- In suitable areas, there are ample supplies of good water and acidicsoils;
- SA's long dry summers provide excellent growing conditions, and
- There are low levels of indigenous predator insects.

The high quality of SA's products is recognised on local and export markets. Given the establishment of large plantings, transport economies will follow. The central location of Adelaide, continuous supply source and improved international airport will be favourable to the establishment of a hub for export of cut flowers.

Production costs in a developing country such as Chile were examined to compare production costs with Australia. A 50% decrease in harvest and post harvest labour reduces the cost per stem from 7.3 to 6.0 cents. These labour savings may be eroded by higher freight to Europe and Asia. Australia may have about 10 cents/stem freight cost advantage to these markets over South America. But reported government freight subsidies will erode our freight advantage.

1.4.2 Traditional Flowers

Indicative costs and returns for a farm producing carnations (10 houses) in glass/shade houses were developed:

10 Houses of Carnations		
	Average Yield	**Above Average Yield (+10 %)**
Gross Inc. Carnations	$45,000	$49,500
Crop costs	$30,420	$31,540
Overheads.	$9,195	$9,195
Farm Profit	$5,385	$8,765
Return on Capital and Lab	2%	3%

The margins are such that a larger or more diversified operation is needed to provide a satisfactory return to capital. (Appendix 3).

Typically 75% of the carnation crop may be sold on the domestic market, with the balance exported. However the ability to export profitably requires that a price of $5/bunch in $A is required to match a return of $2 locally. This is because costs of $3 are incurred in exporting as freight, wholesaler agent fee and AQIS charges (each $1).

Alternatively the export returns of $5 are distributed as:

- Japanese consignment $1.65
  - auction
  - importer
  - sundry
  - fumigation

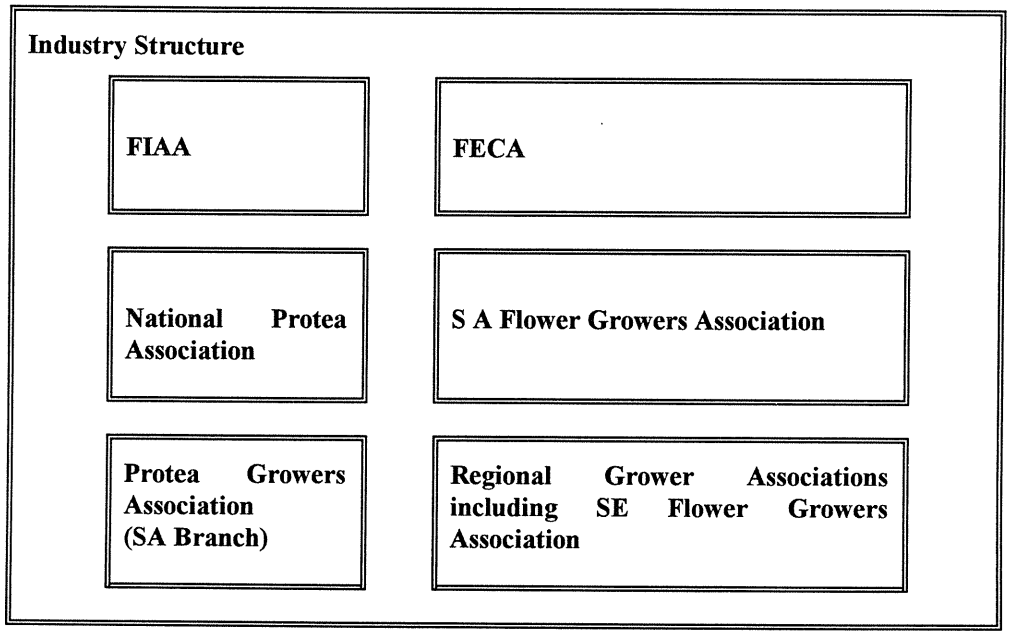
- Export costs $1.17
  - carton
  - fumigation
  - packing labour
  - AQIS
  - consignment
  - tax
  - freight

South Australia has a severe freight disadvantage in having to transport product to eastern Australia when direct overseas flights are not available.

Industry expansion is limited by the labour intensiveness of production. Labour management is critical in the high labour use areas of growing and packing. Labour costs and payroll tax are cited as disincentives to expand and develop large scale economies.

1.4.3 Industry Organisation - Cut Flowers

In South Australia the industry has no specific regulation and legislation. The industry is structured as follows:



The newly created peak industry body is the Flower Industry Association of Australia (FIAA) with a broad membership covering growers, wholesalers and exporters. SA growers are affiliated with FIAA through SA Flower Growers and Regional Associations. The Australian Protea Growers Association is established in SA and is affiliated with the SAFGA and FIAA.

Membership of SA Flower Growers Association represents 35% of commercial producers and 75% of production.

It is concluded that the industry should develop its formal and informal structures to strengthen domestic and export market development. Ideally, flower grower associations including SAFGA would be active in promotion, information provision, quality issues, R&D funding, market research and product development support. Regional grower networks should promote quality, technology transfer, communication and market information transfer. Practically, resources are so limited at present that voluntary services are stretched to the limit and there are few strong industry initiatives in train at the local level.

Recent initiatives are:

- joint PISA/SAFGA quality services initiative;
- an SAFGA export network;
- PISA/SARDI funded extension and R&D activity, and
- new SAFGA market headquarters.

The key issue of the peak body (FIAA) is the Research and Development levy which is under consideration.

The Flower Export Council of Australia (FECA) has a key role in:

- Market access negotiations
- Promotion
- Quality Assurance (QA)

Expansion of membership, communication with the industry and funding are key issues for FECA.

1.5 INDUSTRY PERSPECTIVE - CUT FLOWERS

Market sectors in the ornamentals industry include:

- Purchase by growers of plant material from breeders/propagators/nursery;
- Production of cut flowers and nursery products;
- Sale of product to wholesalers. There are central markets in WA, Qld, Vic, NSW and SA (in Victoria and Queensland the markets handle 70% and 34% of product respectively);
- Sale of product direct to consumers (6% of product), and
- Sale of product direct from markets and wholesalers to florists (58%), greengrocers (9%), hawkers (8%), supermarkets (12%) and other outlets (7%).

A PISA working party (Windle, Barth and Lewis 1990) considered investment options for growth in export floriculture. The following business structures were reviewed:

- Vertical integration of production and marketing;
- Vertical integration by an export company;
- Marketing and/or production cooperatives;
- Owner operators, and
- Trusts, Limited Partnerships, Venture Capital.

The Report recommended establishment of a floriculture forum to determine research/extension priorities, to attract funding for R&D and to coordinate and facilitate growth and development in the floriculture sector.

Models for growth of the native cut flower industry are :

a A few large scale integrated production and marketing firms producing export flowers from units 50 to 60 hectares.

b Establishment of more medium scale (greater than 10 hectare) farms supplying central marketing groups for export.

c Expansion through growth of more small scale operations supplying the domestic market with the over-run for export.

The first model is the preferred one, however past performance makes this an unlikely development.

Option 2 remains the most likely means of industry growth but requires the interplay of finance, market development, R & D and training.

Unless model 2 (above) is realised, growth will be slow and ad hoc, with continuing oversupply in domestic markets and under performance in exports.

Prices and market signals for growers are masked by imperfections in the selling arrangements.

The flow of price information to growers is limited by a marketing system which sells flowers direct to interstate wholesalers and exporters, local wholesalers in the Adelaide Flower Market and independent of it and direct to florists.

Regarding ease of entry into the cut flower industry, a weakness of the industry has been identified as the ready ability of small-scale often part-time growers to enter the industry. These growers are usually not export oriented and are clearly unable to supply the quantity to export markets with uniform quality flowers over an extended period of time.

Partial substitutes for flowers include confectionery, lingerie, artificial flowers and potted flowering plants. However flowers as gifts and for use for specific occasions can be easily differentiated.

Flower promotion, based on flowers being suitable for many occasions, is an opportunity for the industry, especially to replace substitutes mentioned above. It is not considered feasible however to raise cut flower consumption to anywhere near the levels of Japan or Europe for example.

To remain competitive, the Australian cut flower and nursery industry must pursue product differentiation and develop new and different market segments. Hence the need for R&D in the area of product innovation as mentioned under Strategic Analysis.

2 FLORICULTURE STRATEGIC ANALYSIS

2.1 SWOT ANALYSIS

The SWOT analysis indicates that a quantum leap is required by this small SA industry and it must overcome several obstacles to achieve growth in domestic and export markets. (see Appendix 4).

Cut Flower Industry SWOT

Strengths

- Native flowers for Export
- Potential Traditional Flowers for Asian Market
- Industry Organisations are strengthening
- Industry Levy for R&D being introduced
- Industry Promotion (especially in Japan) increasing

Weaknesses

- Fragmented skills base. Industry organisation lacks co-operation & cohesion
- High cost of Local Production - traditionals - labour intensive
- Lack of technical skills - many small growers
- Lack of R&D
- No defined Quality Standards
- Market information (especially for export) is lacking substance and structures
- Low use of controlled environments for year round production
- Production methods post harvest and marketing below national standards
- Infrastructure (esp. t/port) inadequate
- Lack of registered chemicals for production (national issue)

Opportunities

- Japanese and European markets spend high on flowers. S.E. Asia potential
- Market is growing (domestic & world-wide)
- Increased R&D will lead to high /quick payoff
- Considerable potential to increase yield & cost of production
- Emerging exporters will have a "pull" through effect
- Improved information and strategic alliances with large international suppliers

Threats

- Introduced pests and diseases and high cost transport (Air)
- Impact of substitutes and competition Asia, America, and South Africa - low cost

The strengths of the industry can be succinctly expressed as: increasing world and domestic markets, strengthening and formalising industry organisation and structures, introduction of an R&D levy and emergence of industry promotion. The list of weaknesses is such as to limit the rapid achievement of industry potential and prevent it capitalising on its strengths. For example its fragmented skills base and grower structure, under-capitalisation in production and transport facilities and marketing aspects of the industry are serious flaws.

Several opportunities related mainly to marketing and market growth, R&D and yield and cost of production are identified as critical success factors. Two threats emerge to the future of the industry - high transport costs in S.A. and competition in world markets from South American and South African producers

2.2 INDUSTRY DRIVERS AND CRITICAL SUCCESS FACTORS

The drivers of future growth will be :

- Rising consumer incomes in flower importing countries, particularly Asia;
- Growing awareness and appreciation of Australian native plants, and
- Commitment of new and existing growers to export.

Critical success factors to achieving the growth outlined in the vision are:

- Finance and Funding
- Market Development and Access
- Research and Development
- Structural Improvement and Sustainability
- Industry Organisation Improvement
- Training

It also will require new entrants to the industry and renewed commitment of existing producers.

2.3 FINANCE AND FUNDING

Capital for expanded production, at world's best practice, and associated infrastructure is lacking.

Private investment, with the backing of financial institutions, should be an industry priority, as local banks do not view the flower industry as a growth area. This can be changed with the adoption of projects associated with the industry developments discussed below.

There is a potential role for PISA to be involved as a catalyst in this area.

Program Proposal

That PISA acts as a catalyst for capital attraction. Programs to attract capital include highlighting bank and investor attention to industry opportunities especially in the native cutflower area. This may be an industry funded position, through levy collection.

On a broader scale, an industry driven export board or 'network' is required to stimulate development of a world class export industry, focused on S.A. nursery and flower production.

2.4 MARKET DEVELOPMENT AND ACCESS

Market development requires a total commitment to the supply of products and services to overseas and domestic consumers to the required specification, quantity and delivery time demanded by the customers. A commitment to export is sustained by a thorough understanding of consumer needs and an equally thorough understanding of the products and services provided by major international competitors.

Local marketing is fragmented with many growers supplying retailers direct. This results in

- Inconsistent quality, bunch size and stem length(no recognised standards);
- Limited and inconsistent pooled pricing and supply information available to growers, and
- Price cutting and poor returns, periods of under and oversupply.

Most growers are not committed to, or are ignorant of, quality control and continue to supply sub-standard product onto local markets. The opportunity to undercut accepted prices or 'dump' excess flowers is strong in spring months. Adelaide florists appear not overly quality conscious and/or are prepared to take a poorer product at a cheaper price. The local market is often oversupplied and quality standards have only improved marginally in the past few years.

Export development is also constrained by:

- Small growers unable to export in their own right, necessitating the use of agents and lack of strategic information being passed back to growers;
- Mistrust of agents due to poor payment histories;
- Lack of confidence due to insufficient market quality and price information;
- Lack of both grower and agent commitment to quality and consistency, and
- Early commercialisation of unimproved species prior to any R&D work.

Overseas importers have consistently indicated their requirements to source a diverse range of product from a central contract and not deal with individual growers supplying a limited range of product over a seasonally restricted period.

This report has proposed a three tier cluster / group formation to enable the cut flower industry to overcome existing inadequacies and achieve export success.

Program Proposal

That industry/government resources be redirected to facilitate improved market structures and access and in particular an agribusiness role is identified including:

- Market information
- Flower export development - network facilitation
- Support for new marketing structures (electronic)
- Support for marketing clusters and groups

The need for market development, improved knowledge of markets and lack of willingness or inability to access new markets is highlighted in the Gap analysis. Awareness creation through visiting export markets will induce a 'pull through effect', ie: the attraction of capital for larger scale plantings.

Agribusinesses should be encouraged to avail themselves of State and Federal Government programs aimed at improving their efficiency and effectiveness as input suppliers, transporters, packers/processors and marketers.

2.5 SUSTAINABILITY

The ornamentals industries impact on soil, water and other natural resources in South Australia and the protection of the industries from a range of diseases and pests is paramount.

Industry strategies are aimed at ensuring a sustainable production system in accord with the environmental concerns of the general community and include:

- understanding land and water management issues and how they impact on productivity and degradation of the natural resources;
- appreciating the consequences of the control of pest animals and plants;
- maintenance of productivity and export markets by ensuring the maintenance of a clean green image and the purity of all product.

Quarantine and other trade barriers have been of continuing concern to SA horticulture in relation to Japan, various SE Asian countries, NZ and the United States. Transport and inspection costs are high. Air cargo space , availability and relative cost is a fundamental issue in profitability of export enterprises.

Program Proposals to Meet Sustainability Needs

- Improved production and value of horticultural crops due to improved nutrition management
- Attract external funds to support extension, research and facilitative activities
- Provide support to government, other agencies and agribusiness in soil conservation and land management and regulatory and quarantine.
- Provide programs which give protection against pests and diseases
- Provide agricultural chemicals programs

2.6 RESEARCH AND DEVELOPMENT

A strong trend in the SA industry in recent years has been the establishment of Protea and native flower plantations, with the product aimed primarily at export markets. Potential for the export of Protea and Australian natives is well established. Production and plant materials costs are high in Australia making export of primary florist crops(roses etc) unprofitable except for very specific target markets. Current exporting is based largely on Australian natives where quality assurance problems are greatest and where market development is essential to encourage use of a unique product.

The economics of production must be established ,and improved market networking needs to be adopted. Research support and quality management are vital for this industry to realise its export potential. Currently both are grossly under supplied.

Opportunities exist to present new products to world markets utilising Australian native plants as cut flowers and pot plants. This development must proceed rapidly if Australia is to realise benefits from the development of the native flora. Other progressive countries have strong R&D programs which concentrate on the commercialisation of Australian plants. State governments potentially have a role in assessment and initial development work, allowing industry to take over the commercialisation of selected material. Research activity for new crop development is essential for Australia to develop a sustainable marketing edge.

Research will target opportunities with large potential sales volumes.

Poor nursery hygiene and subsequent sale of diseased or root bound plant material has had a serious impact on the development of native flower and protea plantations. Consistently high losses are experienced by flower growers which directly relates to poor quality planting stock.

Further export development of the flower industry is reliant on a high level of freedom from pests and disease which necessitates the rapid extension of research work and adoption of control measures throughout the production cycle and post harvest disinfestation.

There is a strong demand for diagnostic services in relation to high value flower and nursery crops. The nursery industry accreditation scheme will greatly increase the demand for regular disease and insect pest testing and monitoring.

Program Proposals

That a portfolio of R&D be assembled to include:

- New product and species innovation
- Quality assurance programs for export and domestic flowers and grade standard development
- Benchmarking studies
- Diagnostic services for flower crops and pest and disease control

2.7 STRUCTURAL IMPROVEMENT

Large international exporters have an advantage over smaller Australian exporters. During the past ten years there has been a rapid turn over in flower wholesalers and exporters in Adelaide which has led to a heavy reliance on interstate exporters.

Australian horticultural export companies generally lack the vertical and horizontal integration necessary to provide a 'critical mass' and continuity of supply.

There is a need to facilitate the development of strong industry networks for particular commodities with sound growth potential. Such networks among producers will increase exchange of marketing and technical information and help prioritise research and development assistance required for continued industry growth.

The development of an industry forum would provide cohesion, direction and input to research priorities. PISA can act as a catalyst in this.

The use of chemicals and fertilisers in cutflower production is essential for continued viability. Issues in their use include access to information, access for off label use, education and training for producers in correct use.

Program Proposal

That appropriate market structures be developed and market access facilitated.

2.8 INDUSTRY ORGANISATION IMPROVEMENT

Institutional arrangements for the industry have been strengthened in recent years with the formation of FECA and the FIAA. An R and D levy has been approved by industry. There are strong links between local Flower Grower Associations and there is a growing awareness in the grower organisations of the requirements of a growing industry especially one that aspires to export growth.

Program Proposal

That industry and PISA sponsor and encourage coordination of national industry strategic plans.

That PISA and Economic Development Authority take an active role to improve coordination and cohesion of industry organisation.

2.9 TRAINING

There is limited floriculture training available at TAFE and tertiary levels to train producers, production managers, consultants, and marketing specialists for the industry. Most training is aimed at casual employees in industry such as pickers. Training leading to careers in floriculture are needed including the subject areas of business skills , communications and marketing.

Program Proposal

That centres of excellence in training in technology, business, communications and marketing be identified or developed.

2.10 INDUSTRY OPPORTUNITIES

Key opportunities for industry development which emerge from the SWOT analysis and discussion of industry drivers are:

- Native flowers to Japan, US, South Export oriented growth of off season species, traditional flowers and East Asian markets and Europe;
- Potential production efficiency improvement, labour use and marketing efficiency in the cut flower business, and
- Increased consumption of cut flowers in the Australian domestic market.

3 NURSERY INDUSTRY STRATEGIC ANALYSIS

3.1 SWOT ANALYSIS

The SWOT Analysis illustrates an industry with sound growth prospects in the domestic market and with strong industry organisation and structure. (Appendix 4).

Quality improvement and R& D are supported by the industry. There is a problem of scale which makes a viable export industry difficult to establish, and training in business development and ornamental horticulture is inadequate.

Opportunities in sales growth (with the industry favouring an emphasis on domestic markets), and production efficiency enhancement are identified.

Several threats in the form of capital constraints, interstate competition and lack of airfreight space may limit growth. Capital for business expansion is a real limiting factor to structural improvement (for export growth) and for total industry output.

Nursery Industry SWOT Analysis	
Strengths • Strong industry organisation in NIAA and NLIASA • R & D and promotion supported by levy • New product developments by industry • Strong emphasis on accreditation for domestic market • Core group of established producers creates stability • Quality products are produced despite poor water quality	**Weaknesses** • Small scale of production in SA limits exports • Poor quality backyard producers reduce industry standards • High costs of production • Training in business skills low • Few tertiary qualified entrants to industry in South Australia • Insignificant export sector
Opportunities • Production and agribusiness efficiency enhancement through basic and advanced training • Steady growth in domestic demand for nursery stock • Environmentally controlled containers for export development • Demand for advanced growth plants, potted shrubs and plants, interchangeable stock • Australian plant groups in domestic and overseas markets	**Threats** • High capital costs limit production increase • Interstate competition • Availability and cost of air freight costs • Introduced pests and diseases • High exchange rate

3.2 NURSERY INDUSTRY DRIVERS AND CRITICAL SUCCESS FACTORS

The drivers of future growth will be :

- Rising consumer incomes in domestic and flower importing countries, particularly Asia
- Growing awareness and appreciation of gardening landscaping and the place of plants particularly Australian native plants; and
- Commitment of new and existing growers to the industry and to export

Critical success factors to achieving the growth outlined in the vision are:

- Capital for Expansion;
- Market Development and Access;
- Research and Development;
- Structural Improvement;
- Industry Organisation Improvement;
- Training;
- Sustainability, and
- Quality Assurance and Promotion

3.3 RESEARCH & DEVELOPMENT

The nursery industry is reliant on greenhouses for production of plants on a year round basis, however there is a poor understanding of greenhouse design, construction and management. Resources are required in research work on greenhouse design, construction and environmental control and in extension work to implement changes based on research findings.

Program Proposals to Meet R&D Needs Include

- New product and species innovation(including landscape tree evaluation and production technology)
- Product promotion
- Greenhouse design, construction and environmental control
- Labour use efficiency and mechanisation
- Environmental controlled shipping containers
- Irrigation efficiency enhancement

3.4 CAPITAL FOR EXPANSION

High costs of infrastructure in greenhouses, shade houses and propagation units limit new nursery development.

The lack of mechanisation in some areas of the South Australian nursery industry is placing local product at a cost disadvantage when compared with interstate product.

The South Australian nursery industry's small scale of production places it at a disadvantage when there is a requirement for large volumes of propagules for overseas export.

Program Proposal

That resources be directed to industry capital formation.

3.5 STRUCTURAL IMPROVEMENT

The introduction of Plant Variety Rights to Australia and the contracting of propagation agreements will restrict the cultivars that will be available to non-licenced propagators. This may result in the concentration of the production of crop varieties with a select group of companies who hold patent (PVR) rights. However the introduction of PVR has allowed some companies to introduce new cultivars to Australia.

The highly perishable nature of nursery stock and in particular propagules requires the rapid transport of the product to its destination. Air transport out of Australia currently presents two restrictions: first, the high cost of air transport; and secondly the lack of available air cargo space. Both of these issues would need to be addressed to enhance export viability.

Program Proposal

That appropriate marketing structures for export to be developed.

3.6 TRAINING

Centres of excellence training and post graduate courses are required to support industry development.

Program Proposal

That training in technology, business skills and marketing be enhanced and centres of excellence training in nursery poduction and management be established.

3.7 SUSTAINABILITY

The ornamentals industries impact on soil, water and other natural resources in South Australia and the protection of the industries from a range of diseases and pests is paramount.

Industry strategies are aimed at ensuring a sustainable production system in accord with the environmental concerns of the general community and include:

- understanding land and water management issues and how they impact on productivity and degradation of the natural resources;
- appreciating the consequences of the control of pest animals and plants;
- maintenance of productivity and export markets by ensuring the maintenance of a clean green image and the purity of all product.

Program Proposals to Meet Sustainability Needs

- Improved production and value of horticultural crops due to improved nutrition management
- Attract external funds to support extension, research and facilitative activities
- Provide support to government, other agencies and agribusiness in soil conservation and land management
- Provide programs which give protection against pests and diseases
- Provide agricultural chemicals programs

3.8 QUALITY ASSURANCE AND PROMOTION

Poor nursery hygiene and subsequent sale of diseased or root bound plant material has had a serious impact on the development of the flower industries. Consistently high losses are experienced by flower growers which directly relates to poor quality planting stock.

Industry promotion is achieving a high profile for the industry with major events such as 'Gardens Alive' and annual awards featuring.

Program Proposal

Poor nursery hygiene standards in segments of the industry have led the drive to establish a national nursery accreditation program. This program also has the potential to address nursery stock standards and quality assurance programs in the future.

It is proposed that Nursery Accreditation Program development continue.

The already high profile of the nursery landscape industry may be enhanced by the continued activity of Association (NLIASA) with PISA/SARDI support.

3.9 INDUSTRY OPPORTUNITIES

Key opportunities for industry development that emerge from the SWOT analysis and consideration of industry drivers are:

- Potential production efficiency improvement and production innovation, and
- Increased consumption especially in domestic markets and a lesser opportunity (when compared with the cut flower industry) for export growth.

4 OPPORTUNITY & ROLES ANALYSIS

Opportunities and Roles Analysis is used to quantify the value to the SA economy of industry capturing opportunities identified for industry development. The opportunities are measured as Net Present Values (NPV) or the annualised equivalent of the NPV. This quantification is undertaken to help PISA/SARDI to identify potential priority program areas.

Export sectors are from a low base but the figures confirm the need for programs related to export of nursery stock and cutflowers.

Programs will emphasise the development of new products, especially those which will extend the period of supply to export markets. Programs aimed at improving quality of flowers for the export market, market structure change and farm structure change are also emphasised.

Summary of NPV and Annualised Benefits of Growth Opportunities:

		Total Benefit NPV ($m)	**Annualised Benefit ($m)**
Traditional	export	0.618	0.106
	domestic	9.30	1.597
Native Flowers	export	2.63	0.451
	domestic	4.471	0.767
Nursery	export	1.499	0.257
	domestic	29.066	4.990
Sustainability		76.24	7.76

5 PHYSICAL INDUSTRY PROFILE

5.1 FLORICULTURE

5.1.1 Demand - Floriculture

The consumption of cut flowers has risen by 11% since 1985. The largest consumers are the US 24%, Japan 24% and Europe 52% (mainly Italy, Germany, France, the UK and Netherlands).

Consumption is related to incomes with the richest countries in the world - the US, Japan and Germany having the largest turnover.

Japan is traditionally a large cut flower consumer with high volumes and value of flowers and consumption per head of $US70 in contrast to a per capita expenditure in the US where US$30 is spent per head. Flowers in Italy, Norway and Switzerland are high value items.

Consumption per head in Australia is $20.

Important consumer traits are price, colour, vase-life, fragrance and form.

Consumption in Asia including Japan and in the US is expected to rise faster than in western Europe in the next 5 years.

The world's top selling flowers are roses, chrysanthemums and carnations, which represent 80% of sales in USA, 55% in West Germany and Holland and 50% in Japan.

Generally the demand for exotic (non traditional) flowers exists only in high consumption markets including Germany, Holland and Japan. Growth in non traditional fillers and foliage is significant in these markets but these tend to be lower value , bulky crops. The USA may also expand imports of these products.

Factors determining demand in these countries have been identified as: disposable income, distribution networks, consumer reasons for purchase.

More particularly our success in these countries will be determined by identifying a committed, responsible wholesale importer and the landed costs of product. Section 2 explores our farm and post farm gate competitiveness.

Demand for imported flowers in Italy, Japan and US is expected to grow but foreign competition is increasing.

5.1.2 Trade - Floriculture

World trade is worth over $A4 billion pa and is growing 4-6% annually.

The Netherlands export 60% of cut flowers and 48% of potted plants. Colombia, Italy, Israel, Spain and Kenya are the next largest exporters in that order. Exports from these countries are increasing. Asia is a low volume importer with Japan the most important.

With increases in production at least matching consumption increases, prices have declined slightly. Further declines are forecast due to recession in major economies though economic recovery may be expected to reverse this decline.

Flower exporters will have to become internationally competitive by achieving sustainable marketing advantages. In particular the success of Holland in becoming the major world producer and exporter is instructive. Holland has created a competitive advantage despite its poor climate by innovation in glasshouse growing techniques. Dutch innovation adopted the use of abundant supplies of natural gas. The Dutch industry achieved differentiation based on freshness, quality and variety. In the same context it is considered that the Australian export flower industry has to pursue differentiation in the international market, to overcome inherent and artificial disadvantages. In particular Australia must focus on developing unique and exotic products, superior attributes (quality) and to develop different market segments.

Japan imported flowers worth Y17 billion in 1992. Major suppliers are Holland, Thailand, NZ, Taiwan, Singapore, US and Australia (8 per cent of market share). Australia supplies mainly lower value flowers such as Waxflowers and Kangaroo Paw (field grown).

On the world scene, there are huge markets for flowers (and nursery products) in Europe, Asia (mainly Japan) and the US. There is strong competition to supply these markets though Australia sells flowers to Japan (48% of exports), US (19%), Germany (7%) and Holland (3%). This compares with SA which sells to Japan (45%) US (19%), Netherlands (10%) and other (26%).

It is apparent that the key markets for Australian traditional and Native flower products are Japan, Europe (Germany, Holland) and the US. There are also selected, niche markets in other Asian countries which are in some respects easier to access for Australian exporters than say Japan.

Exports - Nursery products and flowers by species 1993-95
Australia (Source ABS)

Item	1993	1994	1995
	$ '000	$ '000	$ '000
Bulbs	667	1851	749
Cuttings	1044	1070	1339
Fruit and nut trees	124	342	433
Rhododendrons/Azaleas	3	-	1
Roses	14	15	21
Live orchids	219	505	675
Live wild plants	157	217	107
Live artificially propagated plants	1142	3082	4065
Total Nursery	3370	7082	7390
Fresh wild picked flowers	na	2477	2446
Fresh artificially propagated waxflower	na	na	2145
Native fresh flowers (leucadendons/banksias)	3275	1032	4720
Artificially propagated fresh flowers	12599	5144	-
- proteaceae	na	na	374
- exotic (except orchids and proteas)	na	na	433
Fresh orchids	1001	327	62
Wild picked flowers (dried/dyed)	2848	4423	6672
Artificially propagated natives (dried/dyed)	3398	5475	5829
Artificially propagated exotics (dried/dyed)	na	1655	1843
Foliage fresh	988	572	541
Foliage dried	na	1313	1342
Total flowers	24109	22378	26407
Total flowers and nursery	27479	29460	33797
South Australian share of total	6%	8%	3%

Exports - Nursery products and flowers by species 1993-95
South Australia (Source ABS)

Item	1993	1994	1995
	$ '000	$ '000	$ '000
Bulbs	375	1110	71
Cuttings	6	2	-
Fruit and nut trees	3	-	-
Rhododendrons/azaleas	-	-	-
Roses	-	-	-
Live orchids	74	69	146
Live wild plants	-	-	-
Live artificially propogated plants	20	91	75
Total Nursery	478	1272	298
Fresh wild picked flowers	na	33	33
Fresh artificially propagated waxflowers	na	na	169
Native fresh flowers (leucadendrons/banksias)	49	5	73
Artificially propagated fresh flowers	363	281	-
- proteaceae	na	na	76
- exotic (except orchids and proteas)	na	na	124
Fresh orchids	64	8	23
Wild picked flowers (dried/dyed)	-	5	4
Artificially propagated natives (dried/dyed)	582	454	46
Artificially propagated exotics (dried/dyed)	na	155	38
Foliage fresh	19	41	-
Foliage dried	na	36	17
Total flowers	1077	1018	603
Total flowers and nursery	1555	2290	901

Imports - Nursery products and flowers (1993-95)
South Australia (Source ABS)

Item	1993	1994	1995
	$ '000	$ '000	$ '000
Bulbs	25	11	234
Cuttings	9	40	62
Fruit and nut trees	8	13	1
Rhodendrons/azaleas	-		
Other live plants	12	8	14
Total nursery plants	48	72	101
Fresh cut flowers	104	115	127
Dried cut flowers	0	0	0
Other foliage	73	11	16
Total floriculture	177	126	143
Total imports	225	198	244

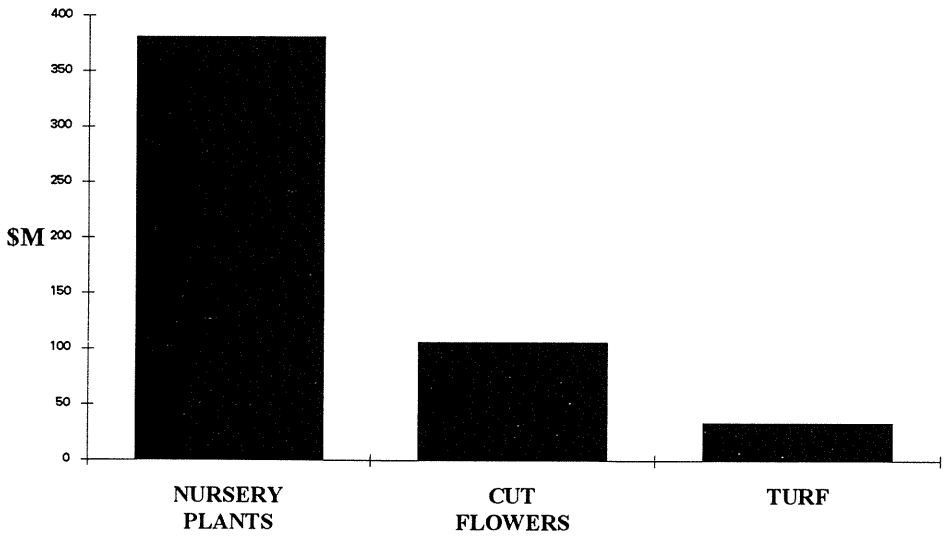
Imports - Nursery products and flowers 1993-95
Australia (Source ABS)

Item	1993	1994	1995
	$ '000	$ '000	$ '000
Bulbs	4577	4570	6929
Cuttings	177	216	226
Fruit and nut trees	12	15	5
Rhododendrons/azaleas	4	0	2
Other live plants	945	1116	959
Total nursery	5715	5917	8121
Fresh cut flowers	2631	5528	6819
Dried cut flowers	784	817	739
Other foliage	392	292	423
Total floriculture	3808	6637	7981
Total imports	9523	12165	16102
South Australian share of national total	2%	2%	2%

5.1.3 National - Floriculture and Nursery

Cut, dried and preserved flowers and nursery products are estimated to be worth $521m (gross value) and total value of sales (production, wholesale and retail) is at least $1.3 billion (ABS).

National Production Value
($521 Million gross value)



Production value by type is indicated by ABS to be: nursery plants $381m, cut flowers $106m, turf $34m.

There are 6600 establishments involved in the production, wholesaling and retailing of cut flowers, plants and turf. There are 2300 producers of nursery plants and 1150 producers of cut flowers (ABS). (Ruralcorp Consulting Pty Ltd estimated in 1992 that flower grower numbers were 2500-2700).

The Nursery and flower industry comprises the following number of establishments (ABS):

	AUST	SA	
Production	3600	330	
Wholesaling	700	70	
Retailing	6300	600	
Total establishments	**6600**	**640**	*

Note: Total is not the sum of categories as some establishments engage in more than one activity. Nationally the industry employs 22800 people and in South Australia 2230.

The gross value of flower production(at farm gate) is estimated to be $250m (Ruralcorp Consulting Pty Ltd 1992). ABS make a much lower estimate ($106m) but acknowledge it to be 'incomplete due to confidentiality'. The value of nursery plants (at the farmgate) is $381m (ABS).

The total area of cut flowers is 3942 hectares(ABS), although this is considered an underestimate due to less than 100% survey response rate. The intensive nature of production of floriculture crops makes area of production a poor indicator of industry output and value. Geraldton Wax, bulbs, proteas and carnations are identified as the largest individual flower crops.

Australian exports have risen strongly from $3m in 1984/85 to $34m in 1994-95($25m in 1992/93). Half of these exports are fresh flowers and about one third are dried flowers. The majority of exports are native flowers and plants. Western Australia is the largest exporting state($17m), followed by Victoria ($3.5m).

Western Australia's exports are predominantly Australian native flowers. WA has over 3,500 different species of native flora. Cultivated areas are mainly waxflowers, protea, kangaroo paw and other natives.

Australia's largest export market is Japan (50%) followed by Europe and US each with 20% of exports. Imports of fresh flowers fell from $8.3m in 1989/90 to $5.3m in 1992/93. Domestic consumption has grown in recent years but per capita consumption is only $25 per head but is unlikely to increase to European levels. Total imports of flowers and nursery products were $16.1m in 1994-95.

The method of distribution and sales varies in Australia with 70% of cut flowers in Sydney sold in a central market. Adelaide established a market in 1991. Melbourne has a flower market which is only partly utilised in a manner similar to Adelaide.

Note: Collection of statistics for floriculture has recently been improved by assistance to ABS from Horticultural Research and Development Corporation and Nursery Industry Association. However, it is noted that excluded from the collection were department and chain stores and numerous roadside sellers and other outlets. However the response rate to requests for data was 80% nationally (85% in SA).

5.1.4 Supply

World cut flower area has increased 13% from 48,000 ha in 1985 to 56,000 ha in 1989.

Australia had less than 2% (1100 ha) of cut flower area in 1988. Japan has 25% of the planted area with Holland, Italy, US and Mexico each contributing about 10% of world area.

World trends are for the major producers to show increased growth of production whilst Germany and France are forecast to decline. There is increased production of floriculture crops in countries with low labour costs including the Philippines, Taiwan, North Africa and Central America.

The value of flower production increased by 12% from 1985 to 1989, when measured in guilders; this growth was negatively influenced by the drop in the US dollar exchange rate.

Europe produces about 60% of its requirements. Japan supplies 94% of its requirements. US imports have increased sharply recently. Currently 50% of supply is imported.

In Europe, only the Netherlands is a major exporter.

Because of the size of European, US and Japanese markets, and because they are net importers they will remain our major target markets.

5.1.5 State - Floriculture

S.A. Exports $1.7m (predominantly native flowers) plus some interstate movement. S.A. imports small quantities of flowers and nursery products from overseas($0.24m in 1994-95), the largest amount being fresh cut flowers. This is only 2% of national imports.

S.A. exports declined from 8% of national exports in 1993-4 to 3% in 1994-95.

S.A. exports declined to $0.9m in 1994-95 from $2.4m in 1993-94 **(see 6.1.2)**

South Australian Exports by Country of Destination

Country	1992-93
	Value $ '000
Japan	711,000
USA	305,000
Netherlands	157,000
Sri Lanka	106,000
Germany	95,000
Taiwan	92,000
New Zealand	43,000
Hong Kong	14,000
Belgium/Lux.	11,000
France	10,000
UK	9,000
Malaysia	8,000
Singapore	6,000
Spain	5,000
South Africa	5,000
Norway	4,000
UAR	3,000
Bahrain	3,000
Greece	1,000
India	1,000
Switzerland	1,000
Australia	1,000

South Australia's ornamentals industry has a gross value to producers (flowers and nursery) of over $50m, placing it the fourth most significant horticultural industry after grapes, vegetables and citrus.

There are over 600 establishments involved in production, wholesaling and retailing (10% of national total). There are 170 producers of nursery plants and 159 producers of cut flowers. About 2000 persons are engaged in the industry.

SA growers are located near Adelaide, Northern Adelaide Plains, Adelaide Hills, the South East and the Riverland. Production is primarily for the domestic market with about 40% of SA production going to interstate markets. As well about 40% of the flowers sold in Adelaide are produced in other States.

The floriculture industry produces over 100 species. The main flower crops are carnations, roses, chrysanthemums, proteas, banksias, bulbs, field annuals, foliage and other Australian natives.

Production of traditional crops is increasing rapidly and Geraldton wax production is doubling each year.

In both field crop and greenhouse production there are highly professional producers who produce a consistent quality product. They are experienced domestic and export producer/marketers. As well there are many small-scale, inexperienced producers who are supply, rather than market oriented.

A centralised market has been established in South Australia.

Plantings of new crops in 1994 included Geraldton wax, ixodia, proteas, banksias, leucadendrons and riceflowers.

Consumption is increasing and there are periods of inadequate supply as well as oversupply in the spring/summer flush season. For certain markets and periods of supply SA is in a good position to produce for interstate markets. The export potential of flower crops is considerable and widely discussed. There is also scope for import replacement. There are short term easily achievable opportunities and longer term prospects for SA flower and nursery crops.

There is a sense of urgency within the floriculture industry because of the realisation of the climatically competitive position of SA, the opportunities available and the need for technical and market development support.

There is an understanding that unless SA moves to build and hold market share it will be difficult to match developments occurring interstate.

Area of cut flowers and nurseries - Australia by States (hectares)

State		90/91	91/92	92/93
NSW	Nursery	na	1790	1231
	Cut Flowers			526
VIC	Nursery		2783	1843
	Cut Flowers			2074
QLD	Nursery		1421	1038
	Cut Flowers			620
SA	Nursery	na	596	240
	Cut Flowers			452
WA	Nursery		1417	530
	Cut Flowers			1269
TAS	Nursery	na	175	137
	Cut Flowers			101
NT/ACT	Nursery		62	49
	Cut Flowers			4
TOTAL		na	8244	10114

Area of cut flowers and nurseries - South Australia by region (hectares)

Region		91/92	92/93	93/94
Adelaide	Nursery	265	132	190
	Cut Flowers		151	158
Outer Adelaide	Nursery	117	49	77
	Cut Flowers		89	92
Yorke Peninsula & Lower North	Nursery	-	4	7
	Cut Flowers		2	-2
Murrayland	Nursery	77	40	48
	Cut Flowers		60	75
South East	Nursery	129	13	9
	Cut Flowers		147	150
Eyre Peninsula	Nursery	-	-	1
	Cut Flowers		4	4
Northern	Nursery	2	1	1
	Cut Flowers		-	1

5.2 NURSERY

The plant production industry in SA supports a wide range of retail commercial enterprises including the retail nursery trade, chain stores, landscapers, parks and gardens, sports turf users and commercial fruit and vegetable producers in this state. The majority of product is sold on SA markets, however, specialised propagation and container stock is sold interstate and a few companies have export markets.

Overseas export development has focused on Australian native trees and shrubs, propagules of flower stock, small plants of indoor and flowering pot plant lines and orchid plants. About 5-6 nurseries are active in some form of export. Other nurseries have attempted export of pot plants for short periods but have found the current constraints of exporting (Section 2) to be limiting to profitability.

A large number of interstate nurseries send regular consignments to wholesale and retail markets in SA. Merchants such as chain stores and discount garden centres have contracts with interstate nurseries which can produce consistent volume throughout the year. Opportunities exist for locally based large volume producers in import replacement.

The complexity of the industry is shown in the following classification of nurseries based on type of production and specialised plant material. There are approximately 10 nurseries with annual wholesale production exceeding $1m, and a total of 30 with annual production exceeding $0.5m.

5.2.1 CLASSIFICATION OF PRODUCTION NURSERIES IN SA

Specialist Propagators

Bedding plants
Vegetable transplants
Tissue culture
Orchids

Container Nurseries

Landscape plants (trees, shrubs, ground covers)
Potted flowers
Indoor foliage plants
Citrus and subtropical fruit
Tubestock/Seedling trees for reforestation/farm revegetation
Field/In-Ground Nurseries

Ornamental trees
Fruit tree stock
Rose plants
Instant turf

Specialist propagation nurseries generally require large capital investment in structures (greenhouses or laboratories), soil or media preparation machinery, and specialised propagation equipment. Companies are generally professional, with many employees, and have high costs in relation to utilising improved plant material, specialised packaging, advertising and distribution systems. There are currently about ten nurseries in SA which represent this group.

The largest area in terms of total value and number of nurseries in SA is container production of plants for landscaping. This category includes large wholesale nurseries with an extensive range of plant materials as well as small specialist nurseries which propagate, grow-on and retail. There is some instability in businesses as it is easy to start a nursery without experience and many new producers are attracted to entering this industry by growing-on seedlings or cuttings into advanced stock. However, strong competition makes profit margins small and the inexperienced producer or marketeer often fails.

In-ground production has been led by rose-plant nurseries which were responsible for most of the Australian supply for over 30 years. Rose production, however, has been greatly increasing in NSW in recent years. The production of field grown ornamentals has been largely based in Victoria until recently when several nurseries in the Adelaide Hills have expanded from fruit trees to include ornamental lines. To compete with interstate nurseries in growing in-ground trees and shrubs, SA nurseries must be large to support specialised equipment and low profit margins.

5.2.2 ACKNOWLEDGEMENTS

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The willing provision of information by flower growers who contributed to the document is appreciated.

6 APPENDICES

APPENDIX 1: EXPORT MARKETING PROPOSAL FOR CUT FLOWER INDUSTRY IN SA
(Source : Phillip Taylor Ecopraxis Pty Ltd)

1. INTRODUCTION: WHAT ARE THE KEY DETERMINANTS OF SUCCESS IN THE EXPORT OF ORNAMENTALS?

The ornamentals industry provides a good case study for many of the issues raised in the Horticultural Industries Overview Report. The problems listed earlier in this report are hallmarks of an industry characterised by atomistic production. Those problems can very largely be solved by transition to the organisational structures recommended in the Overview Report. This section will therefore assume a familiarity with that report.

The two central issues in any marketing strategy are product quality (broadly defined) and price. Finding out what products and what precise specifications are in demand in distant markets then delivering those products to the target consumers reliably, in good condition and at a competitive price is a difficult thing to do. When the product in question is perishable, the task is *extremely* difficult. Many factors affect the viability of exporting a perishable product and most of them are closely related to the organisational structure of the export operation. This will be explained in more detail below, but the recommendations about export of flowers and nursery products will be argued in terms of the two central issues: quality control and price.

2. QUALITY CONTROL: WHAT'S SPECIAL ABOUT FLOWERS?

There are two distinctive features of the flower trade. One is that flowers carry no consumer-identifiable brand sticker, so the choice of supplier is determined more by the retailer than in the case of other fresh produce. The other is the absence, from international trade, of the sorts of organisations that are most successful in the export of other horticultural produce, that is, the large multinational corporations, cooperatives and statutory marketing authorities. One plausible reason for this is that quality control over the flowers delivered is too difficult to warrant risking the good reputation associated with the firm's brand-name. A brand-name's value comes from the guarantee of quality that is attached to it, either explicitly or implicitly.

It was argued in the Overview Report that a quality guarantee becomes more important the more perishable the product and the more invisible are critical quality parameters at the time of purchase. For flowers, those parameters include quality, trueness to specification and longevity of the bloom. While the first two parameters are visible to the consumer at purchase, they are usually not visible to the florist, who is the key chooser of supply source. This point, combined with the relative perishability of flowers makes the issue of quality guarantee one of paramount importance. These two factors, perishability and the key role of the florist, also make the issue of reliability of supply, that is, the service aspect of quality, especially important as well.

The special characteristics of flower export, then, are: that getting it right is generally more difficult than for other fresh produce (for which it is difficult enough); that some form of quality guarantee is especially important; and that the retailer is more the focus for marketing effort than the consumer (relative to other products).

While parameters such as "pot-boundness" and quality and trueness-to-type of the bloom (for flowering plants) tend to be invisible at purchase, invisibility and perishability are less important for most nursery products. Moreover, there is greater opportunity to brand products prepared for retail sale. For these reasons, the conclusions drawn for cut flowers may be less relevant to nursery products, which may have more in common with fruit and vegetables, from the marketing perspective.

3. ORGANISATIONAL STRUCTURE: WHICH IS BEST FOR ORNAMENTALS?

The Overview Report lists two fundamental issues in organisational structure: vertical integration, which is mostly to do with maintaining quality control along the logistic chain, and horizontal integration, which is more to do with reducing costs. It was argued that, given the predominance of the family farm in Australian horticultural production, there are two different structures that are the most likely solutions to the problems widely recognised to be limiting export growth. They are an electronic market and a "three-tier cluster model".

Objective measurement of quality parameters was claimed to be one of the supporting pillars of the electronic marketing system. Since the parameters of cut flowers discussed above are not objectively measurable at time of purchase, flowers do not lend themselves easily to electronic market transactions. That may, in fact, be feasible once quality assessment systems are well established, but they are not a candidate "pioneer" commodity for electronic marketing.

On the other hand, the three-tier cluster is potentially very advantageous for the ornamental export industry. The long-term relationships between adjoining levels of the cluster are the key to the quality assurance system necessary for reliable delivery of high quality produce and the large sales volume of the marketing-cluster is the key to capturing economies of scale and scope which allow world-competitive pricing.

4. MAKING THE THREE-TIER CLUSTER MODEL WORK FOR ORNAMENTALS

As mentioned above, many of the problems identified earlier in this (ornamentals) report are either directly or indirectly attributable to the small scale production units that typify the industry, especially the cut flower sector. This point has been explained in the Overview Report.

One of the problems specific to flower growers in entering a three-tier cluster would be achieving shipment sizes that would capture scale economies. An example would be the impracticality of chartering a 747 for a load of flowers. Even if the destination market was big enough to absorb that quantity, it would be an inefficient way to use the 100-tonne capacity of a 747. The obvious solution would be to combine some flower production-clusters with those for fruit and vegetables, so that mixed loads can be assembled.

If the common marketing-cluster is using one brand-name, there is the additional problem of convincing other growers that flowers will not tarnish the reputation associated with their brand-name. This issue underlines the critical importance of quality control for ornamentals export. An alternative solution to this problem would be to use a different brand-name for flowers, but still use a common export/distribution network. This strategy has been adopted successfully by the NZ Apple & Pear Marketing Board, who market NZ fruit under the

"ENZA" label, but distribute Chilean and South African produce through their network using different labels.

While acceptable selling price is a necessary condition of a successful export strategy, the issue of price is not straightforward. The cost structure for export under a three-tier system will be quite different from that of a small grower using export and import agents in the traditional way. In particular, overall savings should result from capture of scale economies. Similarly, in sophisticated markets such as Tokyo, the price considered acceptable for a superior, branded product, delivered reliably, may be significantly greater than for other Australian flower exports. These advantages can be exploited in a number of ways but, whether or not higher profit margins are extracted from existing sales, the emphasis is likely to be on increased volume both in existing and new markets.

The three-tier model has three implications regarding the characteristics of growers suitable to be members of a flower production-cluster:

- it requires that members, at least as a group, can produce long lines of produce of consistent quality;

- it necessitates the establishment of QA systems with ISO 9002 certification as the ultimate goal. This, in turn, requires substantial capital, skill and commitment; and

- because cluster membership involves expansion into new market niches, growers face considerable uncertainty about costs and prices at the time they decide to make the investment in membership. It may, for example, take quite some time to establish the product as superior to that of competitors. This requires a willingness to commit significant funds and effort to the project over an extended period. Since the eventual profit for individual members rests on the persistence of their partners, they will demand evidence of that willingness from their partners.

It follows that growers who lack this level of capital, skill and commitment have no place in a cluster of the sort described here.

5. IMPLICATIONS FOR POLICY

The argument that the three-tier cluster is the only viable route for establishing a world-competitive ornamentals export industry in SA has significant policy implications. The reality is that a significant percentage of SA floriculturists are do not now, and probably never will, fit the above description of a suitable cluster-member. In this respect, the nursery industry appears quite different. It is possible that the higher capital requirement for nursery production acts as an entry barrier which, in turn, explains the less atomistic pattern of production and greater level of organisation within that industry sector.

An important issue here is that export operations are easier if there is a sound domestic market to act as a "take-off platform". The atomistic nature of cut-flower production may therefore be a significant impediment to establishment of a viable export sector.

The policy implications of this are that the cut-flower industry as a whole may be best served by *raising* the entry barriers to cut-flower production. Policy initiatives consistent with this analysis would include:

- removal of subsidised extension programs. Under the Yandilla Park model, extension is either provided internally or, if specific expertise has to be bought in, the benefits are spread widely enough to justify payment at commercial rates

- making the use of chemicals dependent on demonstration of a given level of expertise, for example, a TAFE course certificate. Issue of irrigation or export licenses could be similarly dependent on demonstration of expertise. This would be justifiable on the grounds of the public costs incurred by inexpert users/exporters

- active promotion of the cluster model, including subsidised workshops run by existing successful cluster participants (such as Yandilla Park management)

- TAFE or similar courses in practical areas such as floriculture practice, post-harvest systems, packing shed management and design, and quality assurance systems.

APPENDIX 2: NATIVE FLOWER MODEL

Native Flower Model

Decision Panel Land Use	ha	%
Banksia	2.0	33%
Leucadendron	2.0	33%
Protea	2.0	33%
Total	6.0	
Profit (before tax)	$31,261	

Overhead costs	
Accountancy	1000
Bank charges	400
ETSA & Phone	1700
Freight & cartage	300
Workcover/Insurance	3000
Licences & fees	200
Post & stationaryphone	2500
Rates & taxes	1000
Registration & subs	1000
Equipment hire	100
Travelling	1000
Consulting	2500
Total	14700

Whole Farm Budget		
Gross Income		
Banksia	$40,238	29%
Leucadendron	$39,600	29%
Protea	$57,375	42%
Total	$137,213	
Expenses		
Flower growing costs	$82,132	
Overhead costs	$14,700	
Loan repayments (interest only)	$9,120	
Full time labour incl. in gross margins	$0	
Machinery replacement inc in mach costs	$0	
Total	$105,952	
Profit before tax	$31,261	
Return on capital	6.60%	

APPENDIX 2: NATIVE FLOWER MODEL

Assets and Liabilities

Assets				Liabilities	
Land				Commercial	$76,000
Banksia	2.00 ha @	$50,000 /ha	$100,000		
Leucadendron	2.00 ha @	$50,000 /ha	$100,000		
Protea	2.00 ha @	$50,000 /ha	$100,000		
Improvements(leveling /plants/irrigation)@18400/ha			$108,000		
Total	6.00 ha				
Buildings and improvements			$50,000		
Machinery			$15,750		
Supplies on hand					
Savings					
Total			$473,750	Total	$76,000
Equity	$397,750	or	84.0%		

*Land preparation /plant material and labour /irrigation system@

APPENDIX 2: NATIVE FLOWER MODEL

Banksia		**total ha = 2.0**		
				Total
Income			$/ha	
1st grade	21750 stems/ha @	$0.60 /stem	$13,050	$26,100
2nd grade	10875 stems/ha @	$0.40 /stem	$4,350	$8,700
3rd grade	10875 stems/ha @	$0.25 /stem	$2,719	$5,438
4th grade	stems/ha @	/stem	$0	$0
Total			$20,119	$40,238
Expenses				
Plants			$300	$600
Chemicals (weeds) @10c/plant			$150	$300
Chemicals (pests) @ 25c/plant			$375	$750
Power 2000 kl/ha@ 5c/kl			$100	$200
Water 2000 kl/ha @ 5c/kl.			$100	$200
Fertilisers			$150	$300
Labour	.2hrs/plant @ $10/hr (300hrs)		$3,000	$6,000
Machinery hire rate @$6.6/hr (250hrs)			$1,650	$3,300
Fuel			$250	$500
Harvesting @ $2/plant (300 hrs)			$3,000	$6,000
Pruning @ $2/plant (300 hrs)			$3,000	$6,000
Packing done off farm			$0	$0
Freight @0c/stem			$0	$0
Total expenses			$12,075	$24,150
Gross Margin			$8,044	$16,088

Decision Panel : Banksia	
Plant life (years)	10
Plants/ha	1500
Cost/plant	$2.00
Stems/plant	29
Price/stem	$0.60
stems/ha	**43500**

APPENDIX 2: NATIVE FLOWER MODEL

Leucadendrons - Silvan Red		total ha = 2.0		
				Total
Income			$/ha	
1st grade	49500 stems/ha @	$0.25 /stems	$12,375	$24,750
2nd grade	49500 stems/ha @	$0.10 /stems	$4,950	$9,900
3rd grade	49500 stems/ha @	$0.05 /stems	$2,475	$4,950
4th grade	stems/ha @	/stems	$0	$0
Total (income per plant =		$13.20)	$19,800	$39,600
Expenses				
Plants			$300	$600
Chemicals (weeds) @10c/plant			$150	$300
Chemicals (pests) @ 50c/plant			$750	$1,500
Power 2000 kl/ha@ 5c/kl			$100	$200
Water 2000 kl/ha @5c/kl			$100	$200
Fertilisers			$160	$320
Labour	.2hrs/plant @$10/hr (300 hrs)		$3,000	$6,000
Machinery hire rate @$6.6/hr (250hrs)			$1,650	$3,300
Fuel			$250	$500
Harvesting @ $5/plant (750 hrs)			$7,500	$15,000
Pruning @ $2/plant (300 hrs)			$3,000	$6,000
Packing done off farm by buyer			$0	$0
Freight @0/bloom			$0	$0
Total expenses			$16,960	$33,920
Gross Margin			$2,840	$5,680

APPENDIX 2: NATIVE FLOWER MODEL

Protea Hybrid Pink Ice	**total ha**	**= 2.0**		
				Total
Income			$/ha	
1st grade	33750 Stems/ha @	$0.60 /stem	$20,250	$40,500
2nd grade	20250 Stems/ha @	$0.35 /stem	$7,088	$14,175
3rd grade	13500 Stems/ha @	$0.10 /stem	$1,350	$2,700
4th grade	Stems/ha @	/stem	$0	$0
Total (income per plant =		$21.25)	$28,688	$57,375
Expenses				
Plant replacements			$270	$540
Chemicals (weeds)			$135	$270
Chemicals (pests)			$338	$676
Power 2000 kl/ha@ 5c/kl			$100	$200
Water 2000 kl/ha @5c/kl			$100	$200
Fertiliser .25 kg/plant @ $380/t			$128	$256
Labour 1350 plants * .2hrs/plant@$10/hr (270 hrs)			$2,700	$5,400
Machinery hire rate @ 6.30/hr (200 hrs)			$1,260	$2,520
Fuel			$250	$500
Harvesting at $4/plant (540 hrs)			$5,400	$10,800
Pruning 1350 plants at $1/plant (135 hrs)			$1,350	$2,700
Packing done off farm by buyer			$0	$0
Freight @0c/bloom			$0	$0
Total expenses			$12,031	$24,062
Gross Margin			$16,657	$33,313

APPENDIX 3: TRADITIONAL FLOWER MODEL

Decision Panel		
Land use	**bays**	**%**
Carnations	10.0	100%
Chrysanthemums	0.0	0%
Roses	0.0	0%
Total	10.0	
Profit (before tax)	$5,385	

Overhead costs	
Accountancy	750
Bank charges	400
ETSA & Phone	1250
Freight & cartage	300
Workcover/Insurance	720
Licences & fees	200
Post & stationary	300
Rates & taxes	1000
Registration & subs	1400
Equipment hire	500
Travel/Consulting	500
Total	7320

Whole Farm Budget		
Gross Income		
Carnations	$45,000	100%
Chrysanthemums	$0	0%
Roses	$0	0%
Total	$45,000	
Expenses		
Flower growing costs	$30,420	
Overhead costs	$7,320	
Loan repayments	$0	
Operator labour incl. in GM	$0	
Machinery replacement	$1,875	
Total	$39,615	
Profit before tax	$5,385	
Return to Labour and Capital	2%	

Assets and Liabilities

Assets				Liabilities	
Houses				Commercial	$0
Carnations	10.00 houses @	$2,500 /house	$25,000		
Chrysanthemums	0.00 houses	/house	$0		
Roses	0.00 houses	/house	$0		
Total	10.00 houses				
Land with water			$200,00		
Machinery			$25,000		
Trellis @ 400/house			$4,000		
Supplies on hand					
Savings					
Total			$254,000	Total	$0

Carnations	**total houses**	**= 10.0**		
				Total
Income			$/bay	
Export	18000 stems/house @	$0.25 /stem	$4,500	$45,000
	stems/house @	/stem	$0	$0
3rd grade	stems/house @	/stem	$0	$0
4th grade	stems/house @	/stem	$0	$0
Total			$4,500	$45,000
Expenses				
Plants & soil preparation			$432	$4,320
Chemicals (weeds)			$30	$300
Chemicals (pests)			$20	$200
Power			$75	$750
Water			$0	$0
Fertilisers (inc. freight)			$100	$1,000
Labour :operator 200hrs/house @ $6hr			$1,200	$12,000
Labour: disbudding casual labor 50 hrs at $8/hr			$400	$4,000
Casual labour for harvest 15 hrs @$8/hr			$120	$1,200
Harvesting, marketing, packing materials			$540	$5,400
Machinery r & m. and fuel at $5.00 /hr			$75	$750
Freight			$50	$500
Total expenses			$3,042	$30,420
Gross Margin			$1,458	$14,580

APPENDIX 4: COMPLETE SWOT ANALYSIS FOR CUT FLOWER AND NURSERY INDUSTRIES

CUT FLOWER

STRENGTHS

Nationally

Australian native flowers/Proteas are being successfully exported to markets in the USA, Europe and Asia.

A potential exists for market development of traditional flower crops in Asia.

There are a growing number of specialist producers and propagators throughout the industry.

Locally

SA has a natural climatic/ soils advantage for some important crops (Proteaceae, Roses, Australian natives).

A wholesale flower market is operating in Adelaide.

Peak industry body has been formed (SAFGA) and all industry groups are represented.

Abundant land and water is available for expansion in the SE and Riverland.

Broad skills base amongst established growers.

WEAKNESSES

Nationally

Large number of small scale (often part-time) growers producing a diverse range of crops

There are few growers with expertise and capital to become large scale producers

High cost of production (labour, materials) of traditional flowers reduces export competitiveness.

A reluctance among industry participants to communicate and cooperate. Consequently, the industry suffers from internal politicking and representation from a small minority.

The industry has not found an acceptable, equitable way to levy growers, so there is minor industry sponsorship for research and development programs.

Poor statistical information on all aspects of the Australian industry and a rapidly changing crop and grower profile.

Technical skills shortage among new and smaller growers to manage individual crops

Research and development inputs have been low with Australian native products. Many of these crops are relatively undeveloped.

Many undeveloped crops are currently exported, and with no identifiable cultivars, high quality, continuity of supply and effective crop management are difficult.

There is an absence of national standards for grading, bunching and packaging for most crops.

Increased competition from overseas imports in winter which are often cheaper than the domestic product.

Marketing information systems poor and incomplete. Growers rely on exporters information, no independent information systems available to guide new entrants into the industry.

Locally

An oversupply of second grade flowers exists on the domestic market during peak growth flushes in spring and summer.

Occurrence of events of climatic extremes in main production areas of SA place supply and quality at risk.

Low use of environmentally controlled greenhouses for year-round production.

With many products suited to export, quality is unreliable due to poor production technology, post-harvest handling or inconsistent grading.

Too many small farms that are not able to effectively supply export markets with uniform quality flowers over an extended period of production.

Payment problems continually hamper relations between growers and buyers.

Few exporters operating in SA, product most frequently transhipped to Eastern states for export.

Local buyers are not prepared to pay more for quality product. Poor quality produce lowers consumer confidence.

Difficulties in maintaining quality in transport and marketing because of lack of refrigerated transport and storage facilities.

OPPORTUNITIES

The consumption of cut flowers is increasing worldwide.

Industry promotion of Australian flowers overseas has produced good response and increased demand for specialty products. There is great opportunity to increase promotion.

Research and development inputs have the potential to have significant immediate impact on markets.

Domestic consumption of cut flowers in Australia is increasing steadily. There are many market opportunities that have yet to be developed.

There is considerable potential to improve production efficiency and yields for a wide range of flower crops.

There is a steady movement of people in and out of the industry. Changes in industry organisation, composition and marketing occur rapidly. There are great opportunities to develop and influence the future of the industry.

There is a good demand for advisory services which are currently not being adequately met.

New export companies are being established in SA.

THREATS

Future shortages in airfreight availability and high costs of transport.

Increasing competition from low cost producers in South America, Africa and Asia for traditional flowers in similar peak market periods.

Quarantine restrictions and non-tariff trade barriers exist in Japanese markets.

Further restrictions on the use of important agricultural chemicals. Lack of minor-use registrations for specialty crops.

NURSERY INDUSTRY

STRENGTHS

Well organised industry associations exist in each state and are incorporated into a national association. (NIAA: Nursery Industry Association of Australia)

The nursery industry is levied through the HRDC and supports research and promotion activities.

SA climatic conditions are suited to production of a range of high quality nursery products.

A core group of long-established nurseries in SA lends stability and leadership to the industry

High profile promotional activities of NLIASA (Nursery Landscape Industry Association of South Australia) are creating new markets for nursery products.

A high level of commitment among industry leaders in national accreditation program.

Interest exists for development of quality assurance in nursery production.

Exports of live plants and plant propagules continues to strong markets in Europe

Unique germplasm suited for development for flowering pot plant and landscape use for overseas markets.

WEAKNESSES

Poor water quality in main production areas of SA can limit yield and quality of some nursery products.

High capital costs of setting up production facilities limit new entrants into the industry.

Poor quality 'backyard' production by inexperienced growers competes with professional production. Low or variable quality reduces consumer confidence in nursery products.

The markets will not support higher prices for wholesale nursery products, although production costs have increased. Financial constraints are affecting all levels of wholesale production.

High degree of knowledge and skill required to successfully produce and market nursery products.

No tertiary qualification available in Ornamental/ Nursery production in SA.

OPPORTUNITIES

Steady increase in growth in domestic demand and sales of nursery stock has resulted from increase use of plants in urban landscaping and home gardens.

Further advances are being made in the sea transport of live plants in environmentally controlled containers which will enhance export development.

Import replacement for nursery products shipped from interstate producers.

Export opportunities exist for Australian native landscape plants which are currently not being attended to.

Demand is increasing strongly in Australia for advanced trees and shrubs for landscape developments.

Many Australian native plant groups have yet to be commercially exploited or developed for domestic and overseas markets.

Australian native species have been highly successful as flowering pot plants in Europe. Potential exists in Australia to assess, develop, and market a wide range of selected species and varieties for these markets.

THREATS

Airfreight costs high and availability limited for export of nursery products.

Restrictions of important agricultural chemicals such as methyl bromide will have an economic impact on the industry.

Environmental restrictions in relation to nutrient runoff and pesticide use will increase establishment and operating costs and may affect viability of some nurseries.

Desirable germplasm is leaving Australia for development by overseas companies.
Interstate transfer of disease and pests.