Foliage opportunity – Liberia Terravilla Gardens


1. Identifying the potential
2. Developing the base
3. Capturing the value
4. Integrating for impact


Foliage market - summary

- **Floriculture overview**
  - **World floriculture is a $7B market worldwide, led by the Netherlands**
  - **Europe is the most developed market for importing floriculture, and the best option for a new grower in the short-term**

- **Foliage overview**
  - **Tropical foliage is the primary type of foliage, of which the leather leaf fern accounts for about 50%**
  - **However, a producer should diversify its mix between traditional and new varieties to minimize risk and fetch higher prices**
  - **The European foliage market is growing steadily, and requires imports from outside the EU**
  - **Projected foliage plantation would be looking to capture 1.2% of the European import market**

- **Of four potential distribution channels, retail packers/ wholesalers are the best option to sell foliage into Europe**

- **Additionally, to access growing European retail market, certification programs such as EurepGap are recommended**

- **Competitive advantage lies in suitable growing conditions for tropical foliage, and a cost advantage due to low labor costs**

- **Local advantage of distribution of plants, cut flowers and foliage**

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  - European floriculture
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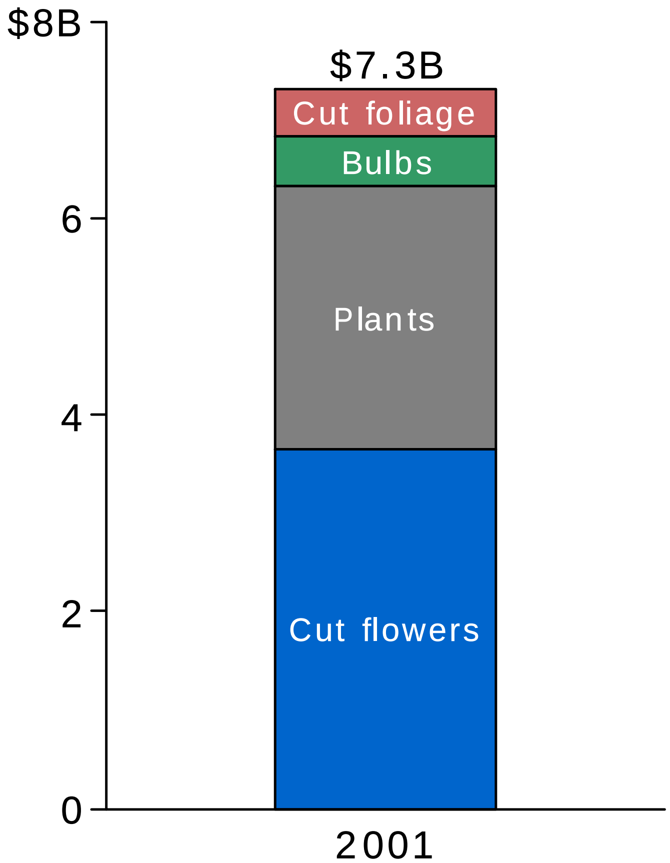
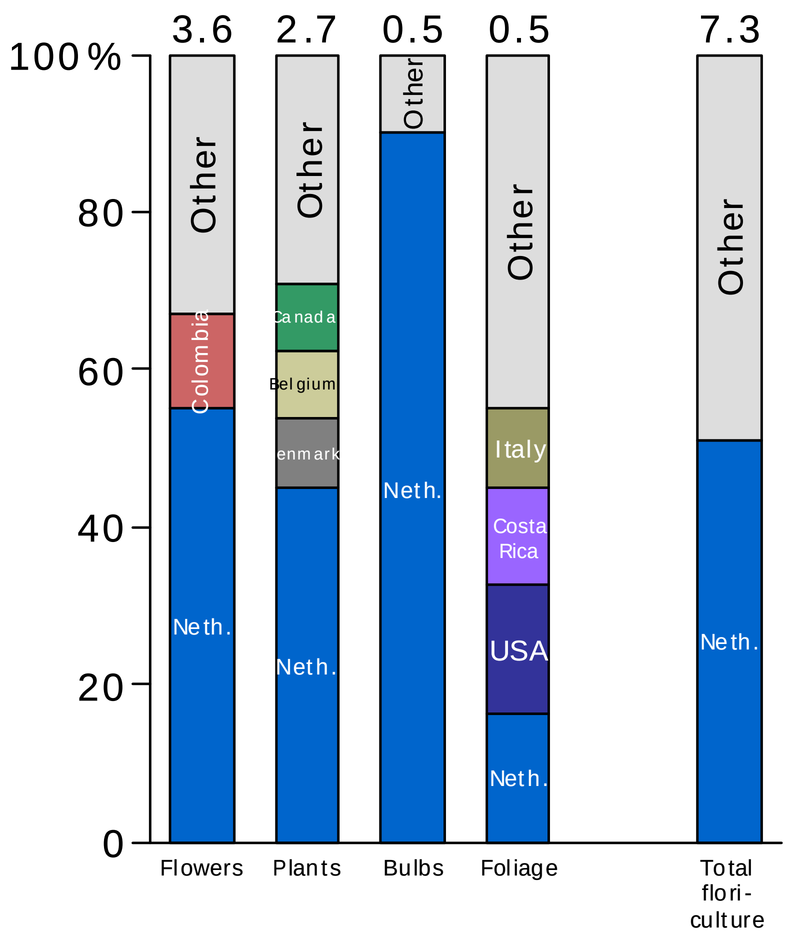
  - Foliage price
  - European foliage market
  - Competitive analysis
- Distribution channels
- Market access requirements
- Competitive advantage

Cut foliage is part of a large floriculture market, of which the Netherlands is the key player

World floriculture exports ($B)



Percent of total exports (2001, $B)



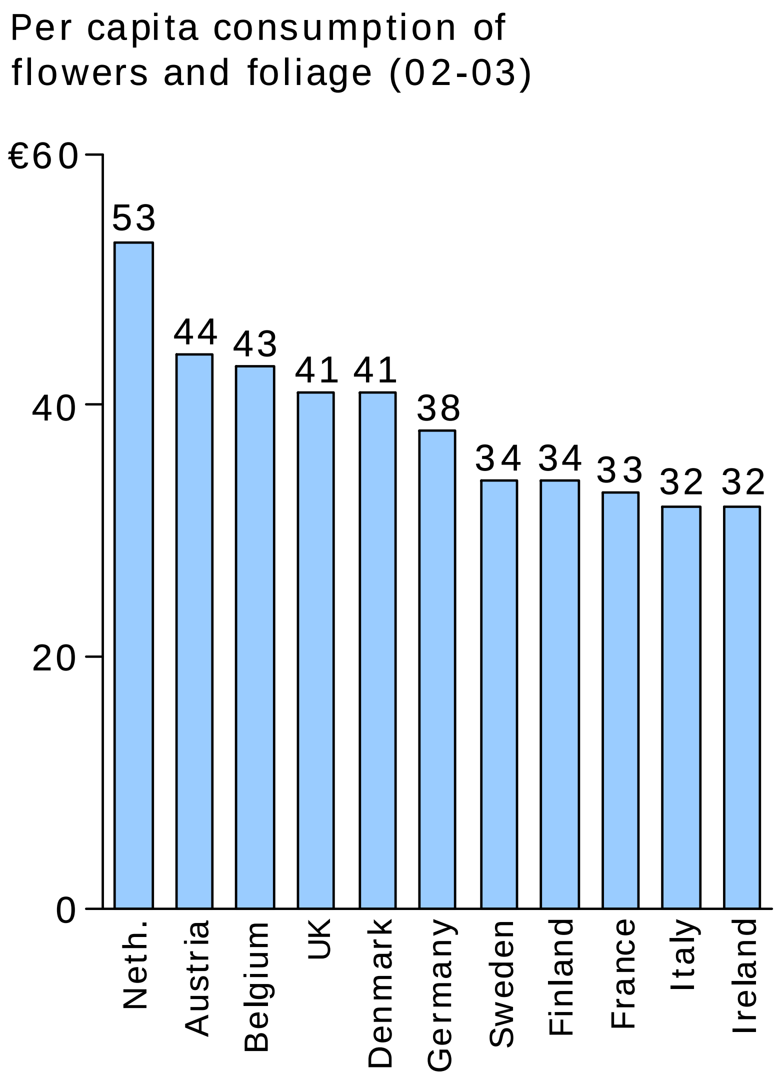
Source: Pathfast Publishing, "Prospects of the European market for SSA exporters of high value fresh products", Feb 2003

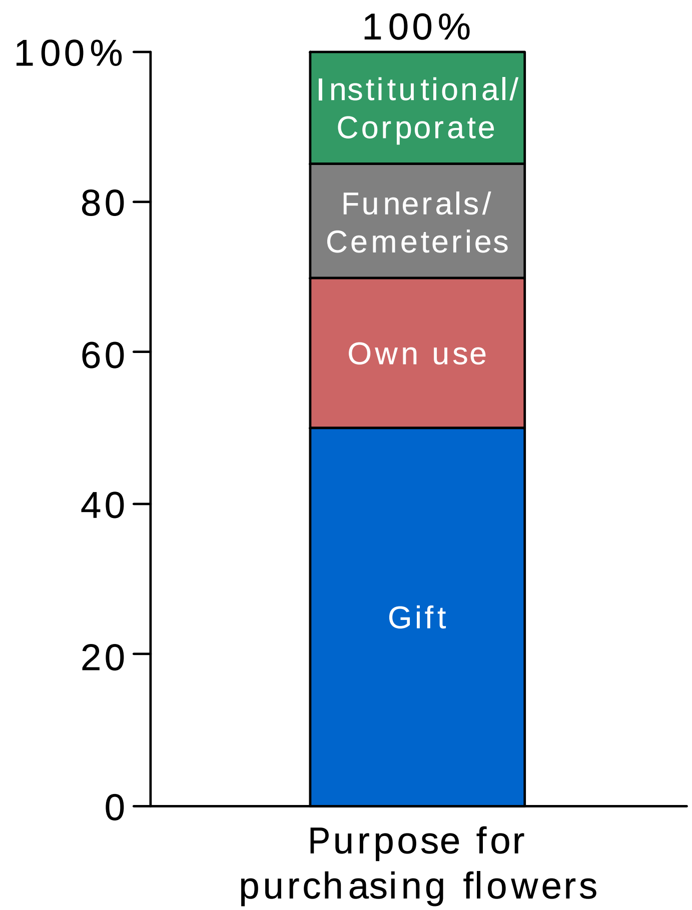
Europe is the biggest floriculture import market, and the best immediate opportunity for a new grower

	Cut Flower Imports	Growth Rates	Trends	
Europe	• $3.1B (total) • $700M (extra-EU)	• Value -0.6% • Volume +7.6% (01-03)	• Highly developed flower market, with growing demand for imports • Netherlands acts as distribution center to the rest of Europe • Option to supply via Kenya to bouquet makers	***Immediate opportunity to access growing demand***
USA	• $600M (2003)	• Value: +1% (99-03)	• More US flower consumption comes from imports (64%) • However, 85% of imports duty free under preferential trade programs, most from Latin America	***Medium-term*** *option; if grower can be price-competitive with Latin America*
Middle East	• NA	• NA	• Dubai is developing as a flower distribution hub • Little visibility exists for distribution	***Medium-term*** *option, if distribution is more reliable or partners established*
Australia	• NA	• NA	• Developing floriculture market, but imports are still a small % of demand • Supermarkets are beginning consolidated buying of flowers	*Mostly self-sufficient markets;* ***long-term*** *option if demand for imports increases*
Asia	• Japan: ~$200M (2003)	• Value: +2% (99-03)	• Japan is largest flower market in Asia • However, less than 10% are imports, and entry requirements are strict • China and India have smaller import markets due to low purchasing power	

Source: Floraculture International, "UN data: 2001 floriculture imports," Nancy Laws; IBIS World "Cut flower and flower seed growing in Australia"; US Dept of Agriculture, "Floriculture and Nursery Crops Yearbook," June 9, 2005; Global Trade Information Services, per USDA "FAS Quarterly Reference Guide To World Horticultural Trade: Trade Data Edition", July 2004

In Europe, the Dutch buy the most flowers per capita, and most flowers are bought as gifts

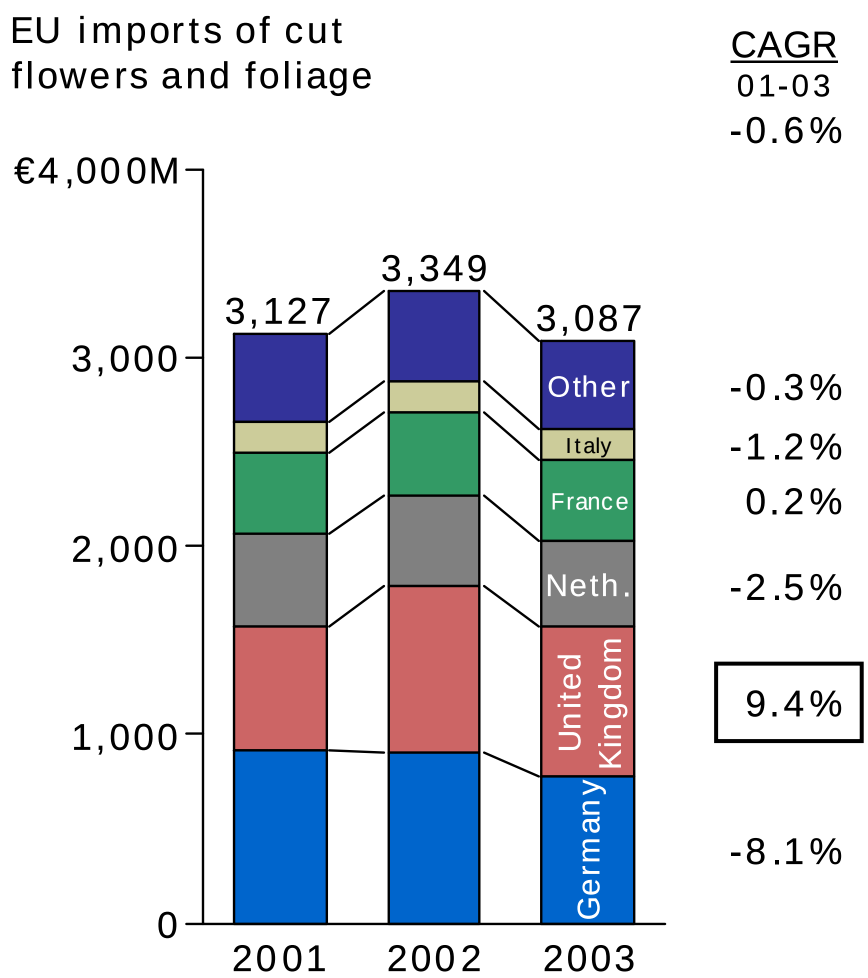




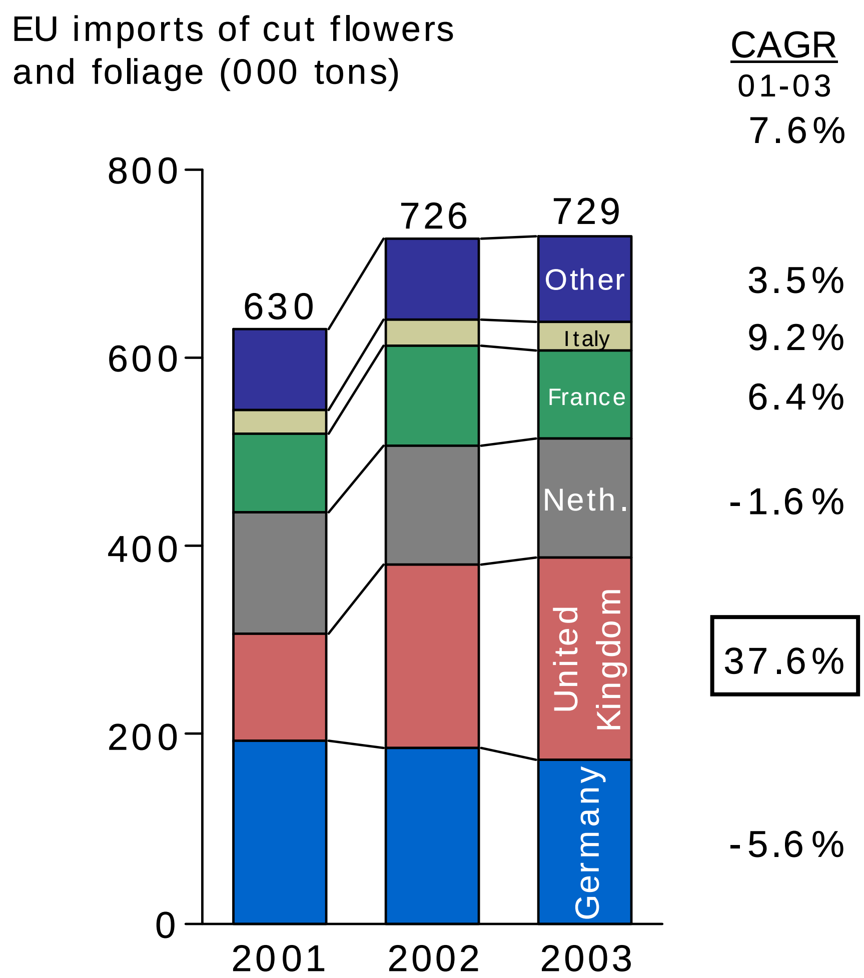
Source: Flower Council of Holland (2004), CBI 2004 Market Survey “Cut Flowers and Foliage”

European floriculture imports have recently increased in volume, led by the U.K.

Value of Imports

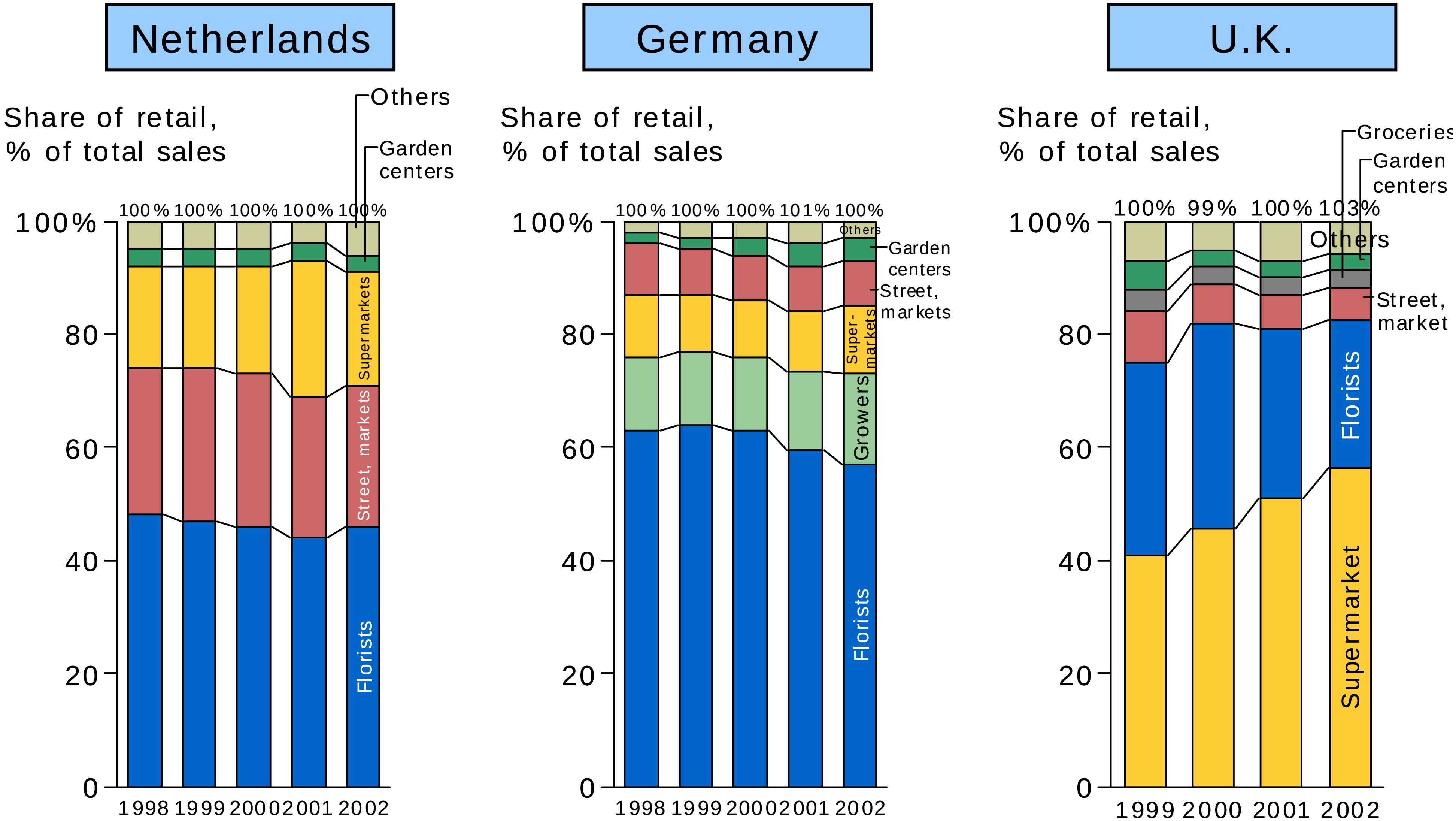


Volume of Imports



Source: Eurostat 2004, per CBI 2004 Market Survey “Cut Flowers and Foliage”

The supermarket is a growing sales channel for flowers and foliage, especially in the U.K.



Source: Flower Council of Holland (2004), CBI 2004 Market Survey “Cut Flowers and Foliage”

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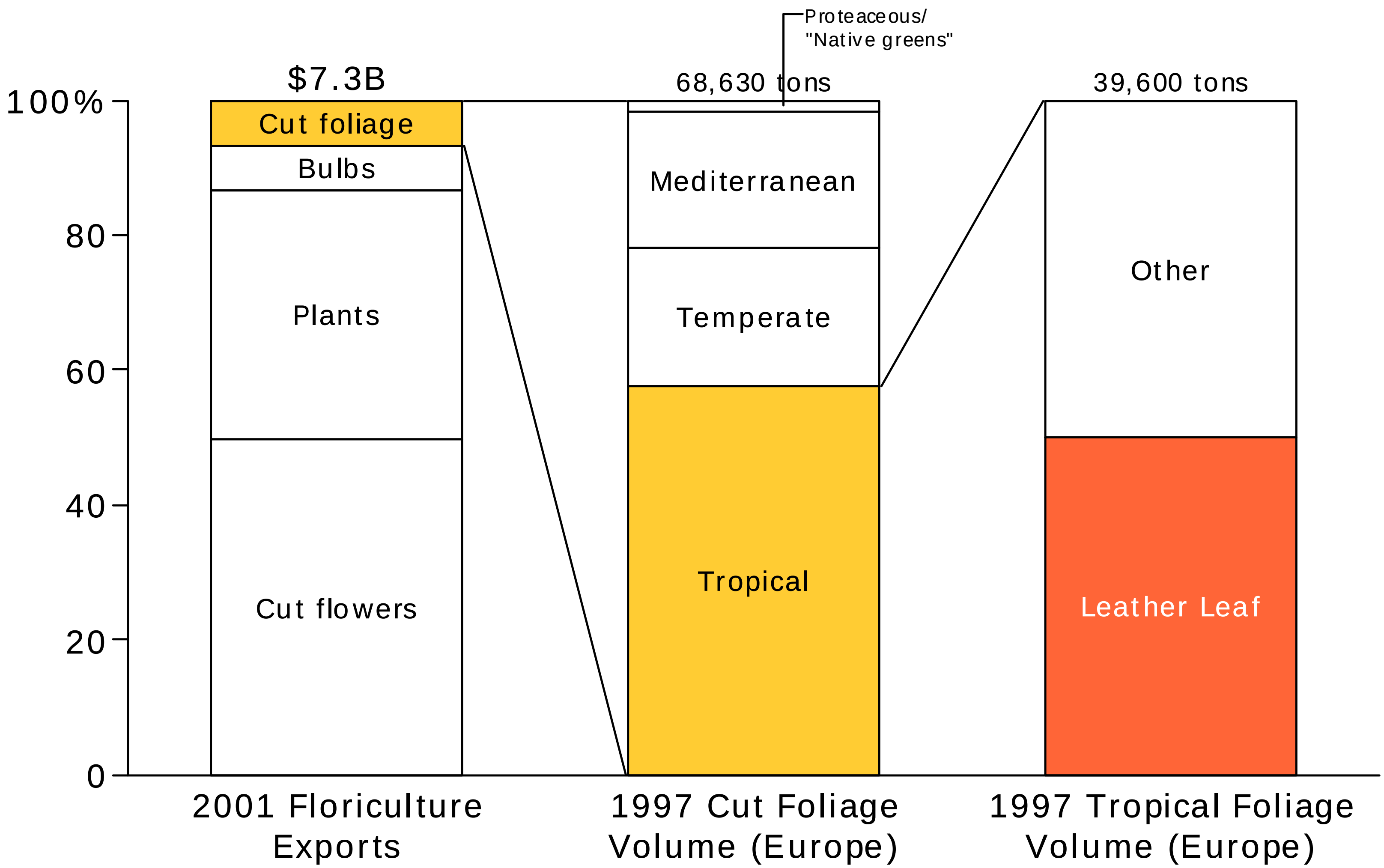
Foliage can be sub-divided into four categories

	Description	Key Products	Main Suppliers
Tropical	• Grows in tropical climates, primarily Latin America and Africa	• Leatherleaf fern • Tree fern (asparagus virgatus) • Palms (chamaedora)	• Costa Rica • USA (Florida) • Mexico • Guatemala
Mediterranean	• Originates from countries near Mediterranean Sea	• Ruscus • Eucalyptus • Asparagus plumosus	• Italy • Israel • France • Spain
Temperate	• Originates from temperate or cold countries	• Salal • Bear grass	• USA (Washington) • Canada
Proteaceous / "Native Greens"	• Proteaceae with discreet flowers, and other native greens	• "Cape Greens" • Typha • Leucadendron	• South Africa • New Zealand • Australia

Source: "Development opportunities for the European foliage market for ACP origins", 1998

Leather leaf is the primary type of foliage, with 50% share of the tropical foliage market in Europe



Source: “Prospects of the European market for SSA exporters of high value fresh products”, Feb 2003
“Development opportunities for the European foliage market for ACP origins”, 1998

A new producer can supply a combination of traditional and new varieties of foliage

	Traditional	New
Examples:	• Leatherleaf fern • "Tree fern" (asparagus virgatus) • Aspidistra • Palm types	• Calathea • Cordyline • Palm types
Advantages:	• Constant demand for use in bouquets • Generally consistent price per stem	• Market is increasingly demanding novelty products • More "exotic" types of foliage can fetch premium prices per stem and higher margins
Dis-advantages:	• Low margins due to low price • Susceptible to over-supply and price drop	• Difficult to predict if certain varieties will sell a year in advance

Growing conditions in Liberia can support a base business of traditional foliage, as well as a mix of "new" products

Proposed foliage varieties

Traditional for the market

Leather leaf

Asparagus

Aspidistra

Palm (Fish & Red)
existing on the farm

New / Exotic

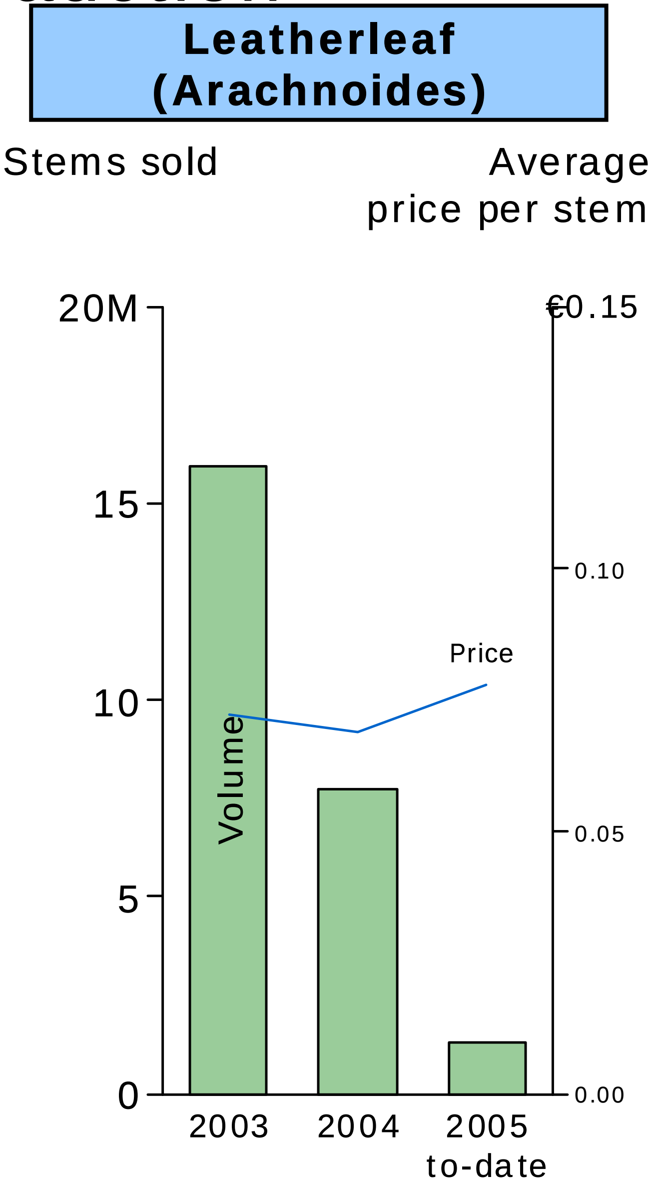
Palm-
New types

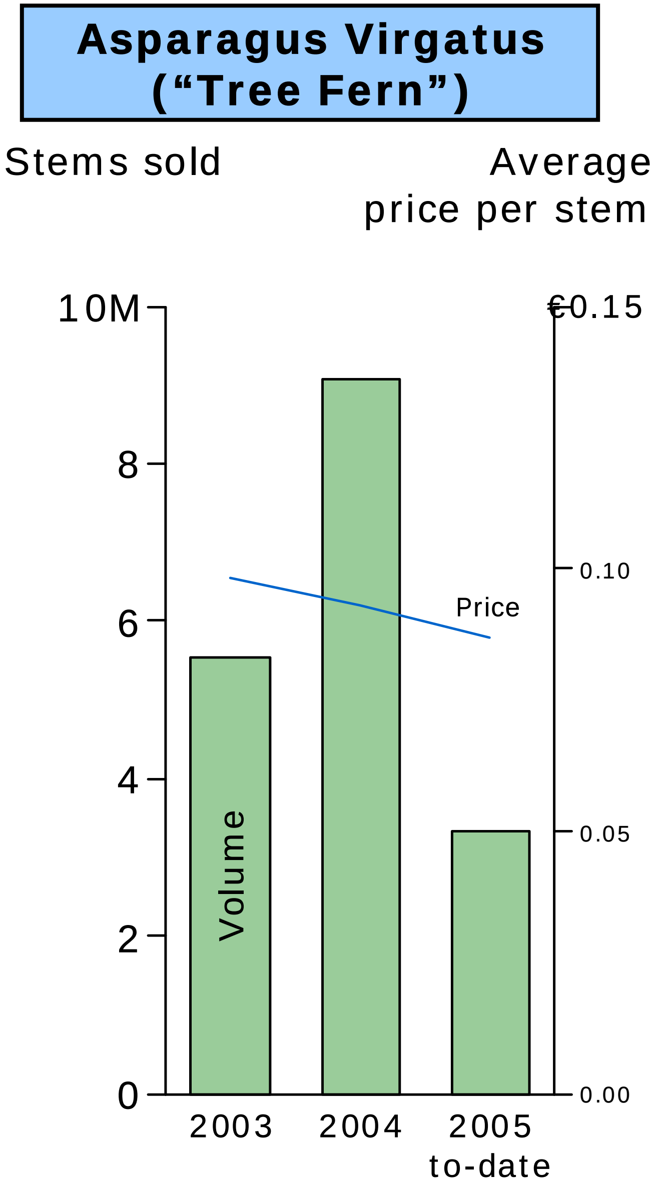
Cordyline – some existing
On the farm

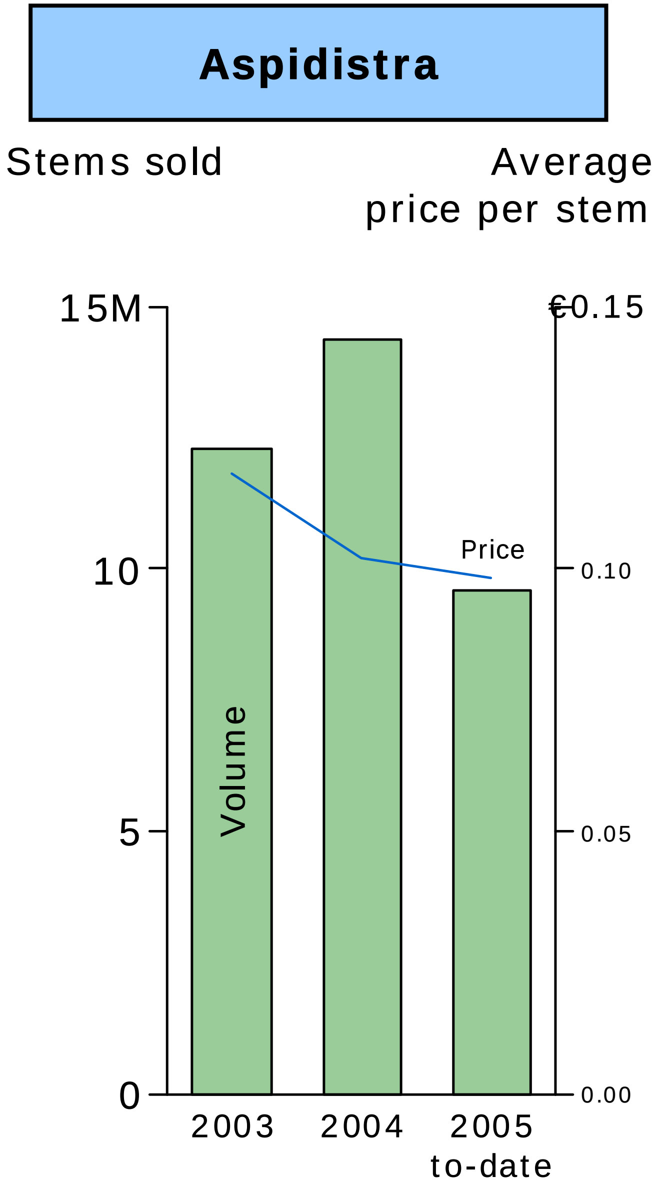
Calathea

Monstera & Philodenron
Existing on the farm

Traditional foliage types Leather leaf, Asparagus, and Aspidistra typically see consistent prices at auction

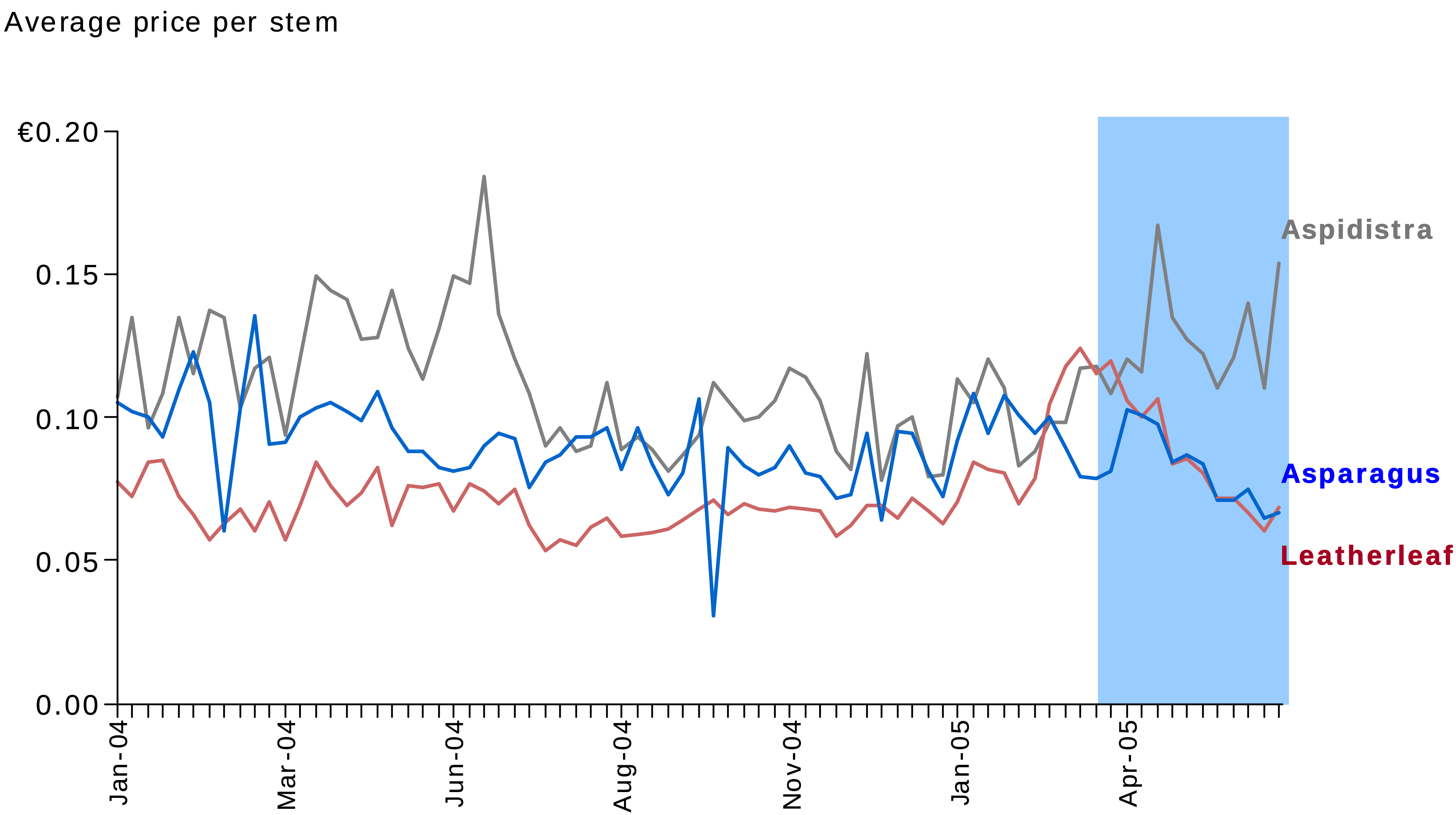






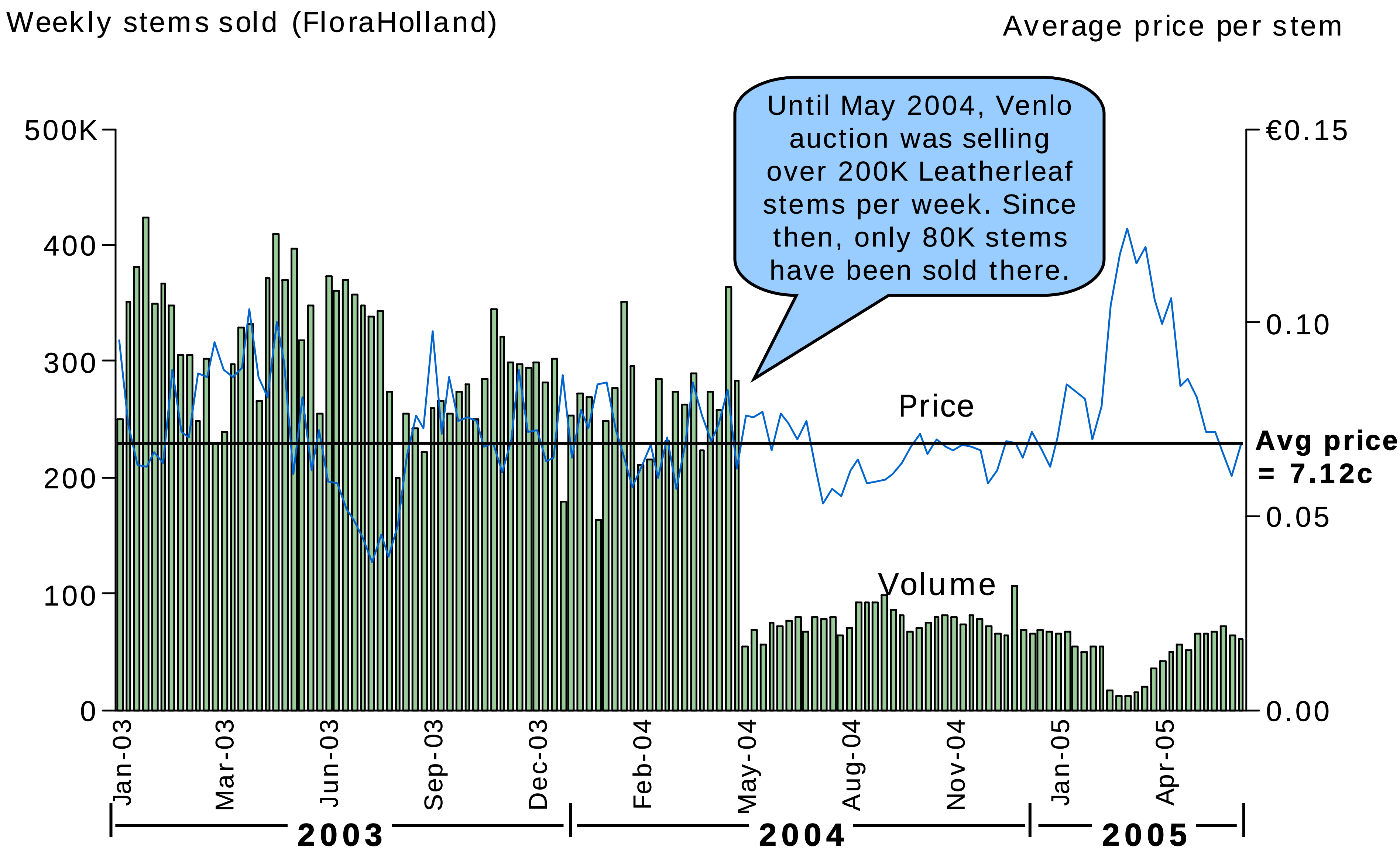
Note: Categories "194 E3lde", "2155 Asp Virg (Tree Fern)", and "5503 Aspidistra". 2005 to-date as of July 7, 2005
Source: FloraHolland auction (FloraNET.com) , combination of Naaldwijk, Rijnsburg, Bleiswijk, Venlo, and Eelde auction sales

However, since April 2005, prices of Leather leaf and Asparagus have both dropped by over 30% opening up for new types of greenery products



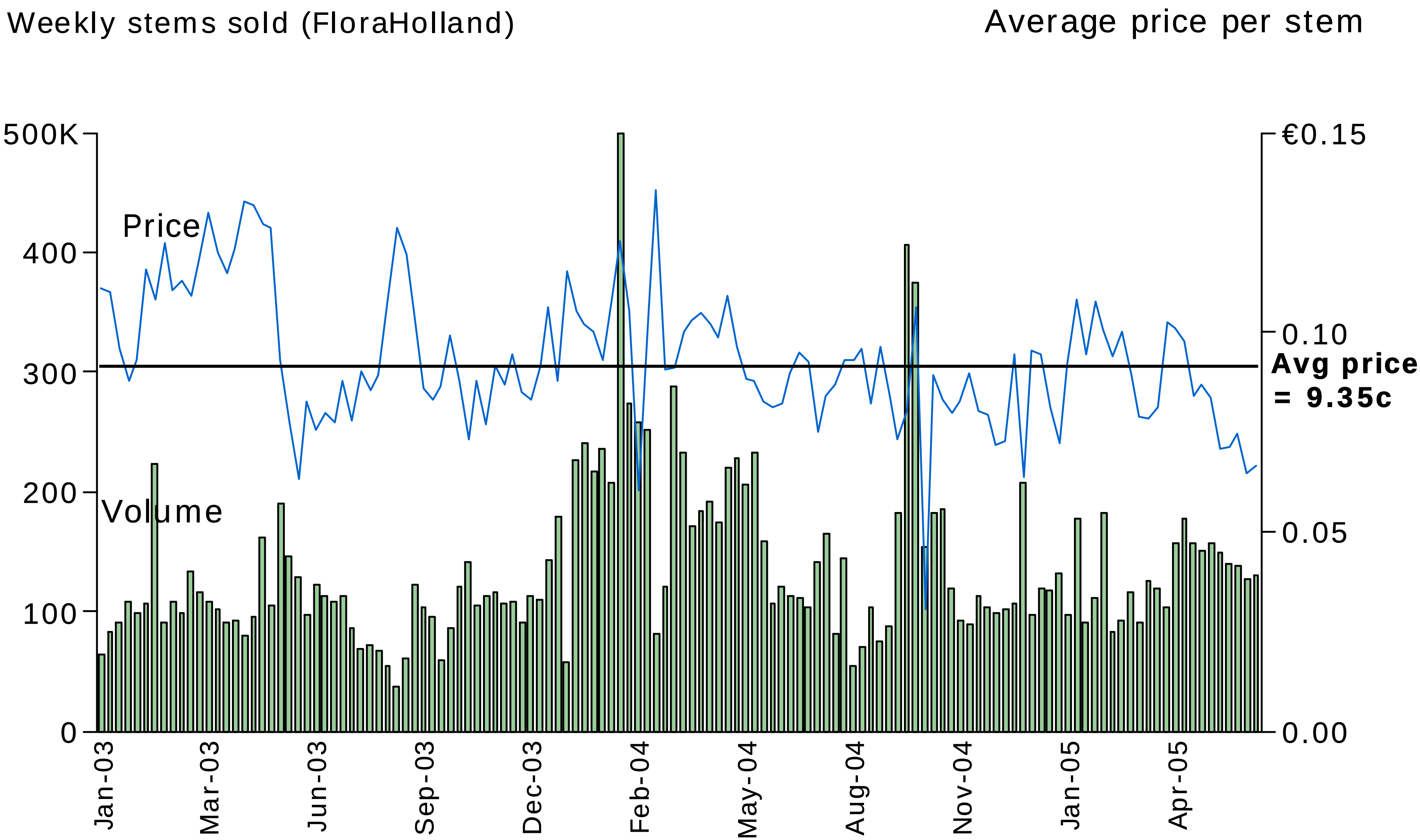
Note: Categories “194 Ledervaren”, “2155 Asp Virg (Tree Fern)”, and “5503 Aspidistra”. 2005 to-date as of July 7, 2005
Source: FloraHolland auction (FloraNET.com) , combination of Naaldwijk, Rijnsburg, Bleiswijk, Venlo, and Eelde auction sales

Still, even though less Leather leaf is auctioned since 2004, the price remains above 5 Euro cents



Category “194 Ledervaren”. 2005 to-date as of July 7, 2005
Source: FloraHolland auction (FloraNET.com), combination of Naaldwijk, Rijnsburg, Bleiswijk, Venlo, and Eelde auction sales

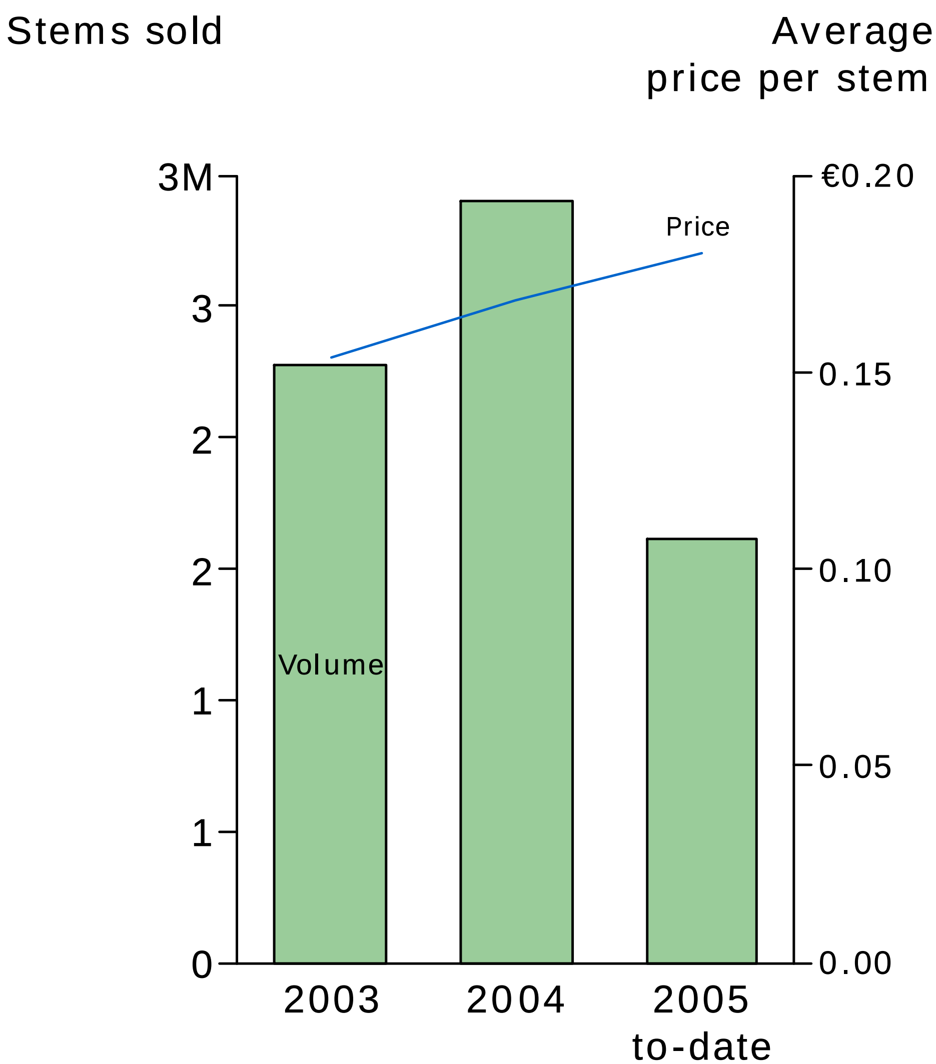
And Asparagus Virgatus (tree fern) is generally sold for around 9 Euro cents per stem



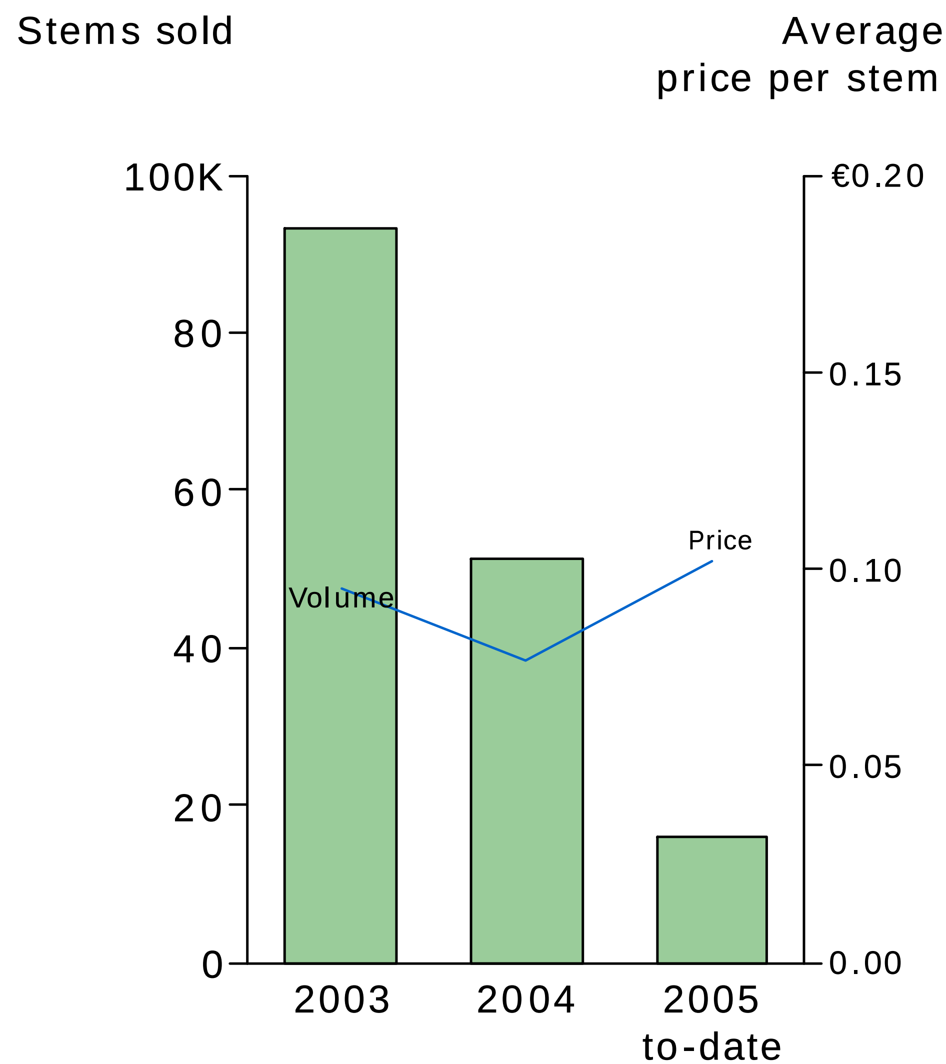
Category "2155 Asp Virg (Tree Fern)" . 2005 to-date as of July 7, 2005
Source: FloraHolland auction (FloraNET.com), combination of Naaldwijk, Rijnsburg, Bleiswijk, Venlo, and Eelde auction sales

Within palm varieties, chamaerops is more commonly sold at auction, and gets a higher price

Palm (Chamaerops)



Palm ("Chico")

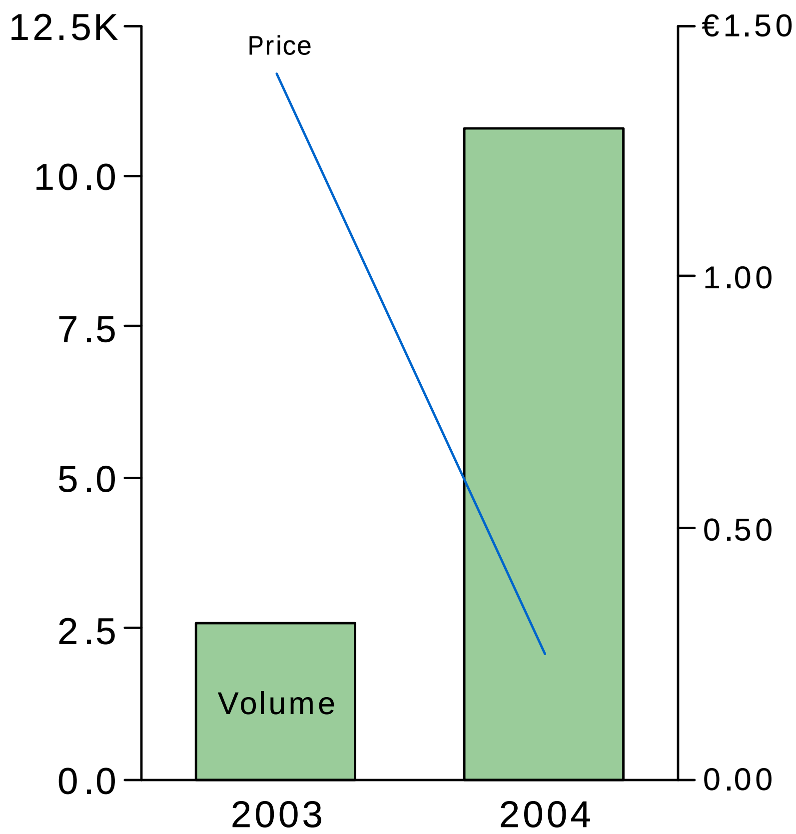


Note: categories "15786 Chamaerops Sp Bl" and "2519 Chicoblad per stuk." 2005 to-date as of July 7, 2005
Source: FloraHolland auction (FloraNET.com) , combination of Naaldwijk, Rijnsburg, Bleiswijk, Venlo, and Eelde auction sales

More exotic varieties sell lower volumes at auction and receive varied prices

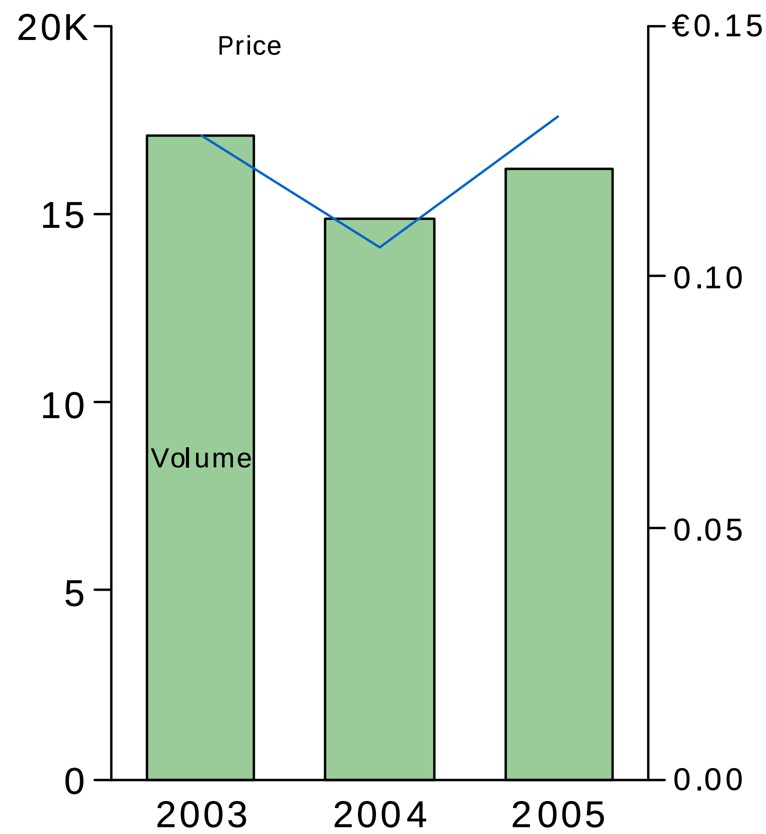
Calathea

Stems sold | Average price per stem



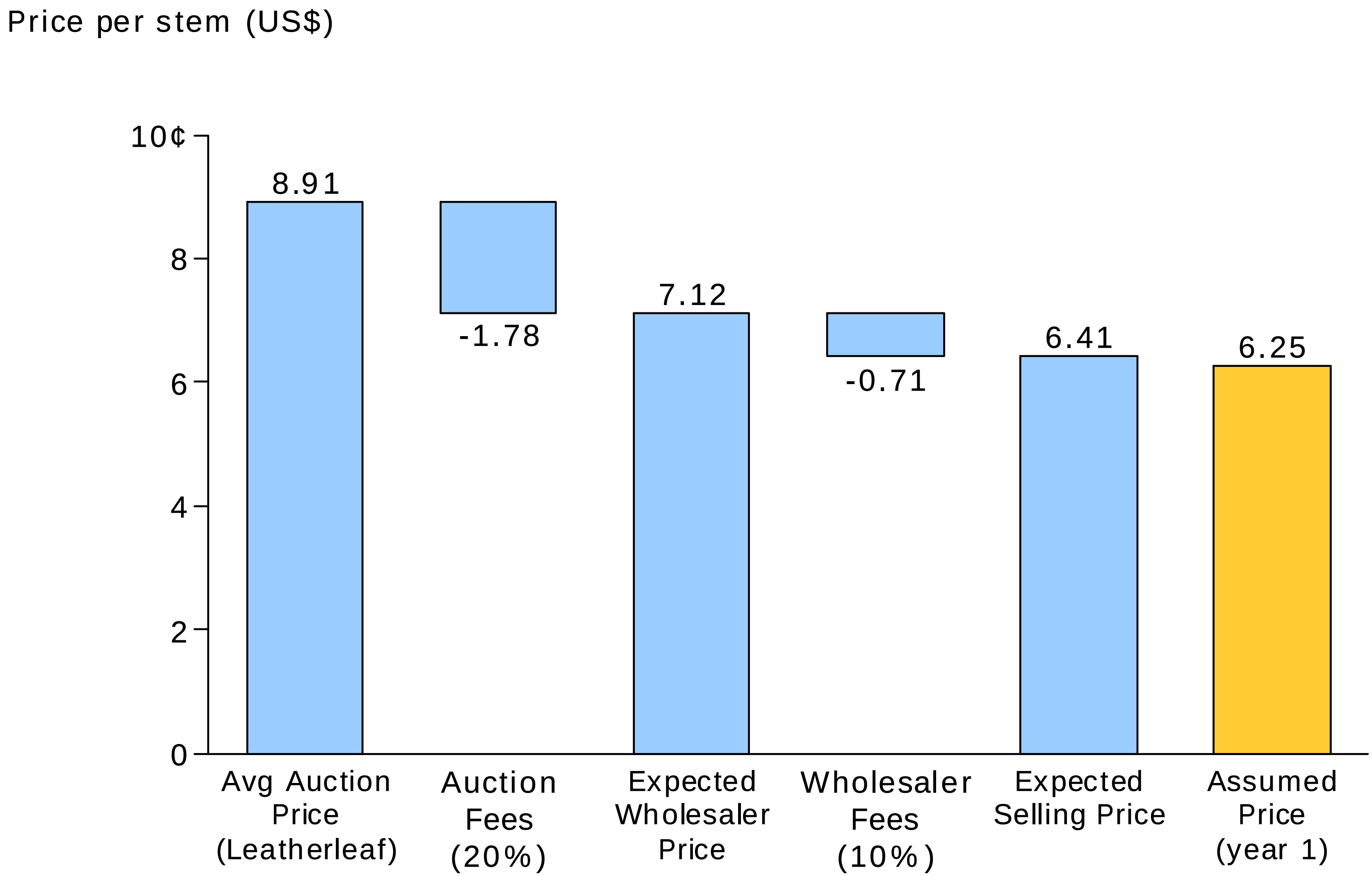
Cordyline Fruticosa (“Black Tie”)

Stems sold | Average price per stem



Note: Categories “10705900 Calathea” and “19738 Cordyline Fruticosa Black Tie”
Source: FloraHolland auction (FloraNET.com)

Based on auction prices, selected foliage varieties should sell for at least 6.25 US cents per stem (increase on Euro rate raises it to 7.81 US cents in 2008)

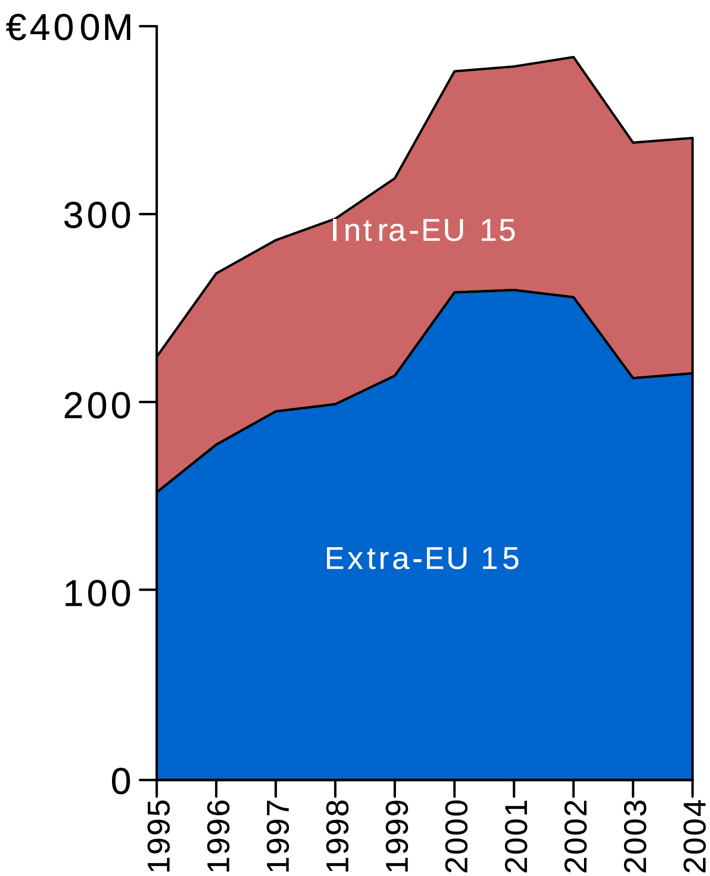


Source: FloraHolland auction (FloraNET.com); CBI 2004 Market Survey "Cut Flowers and Foliage"

The European foliage market is primarily supplied by imports from outside the EU

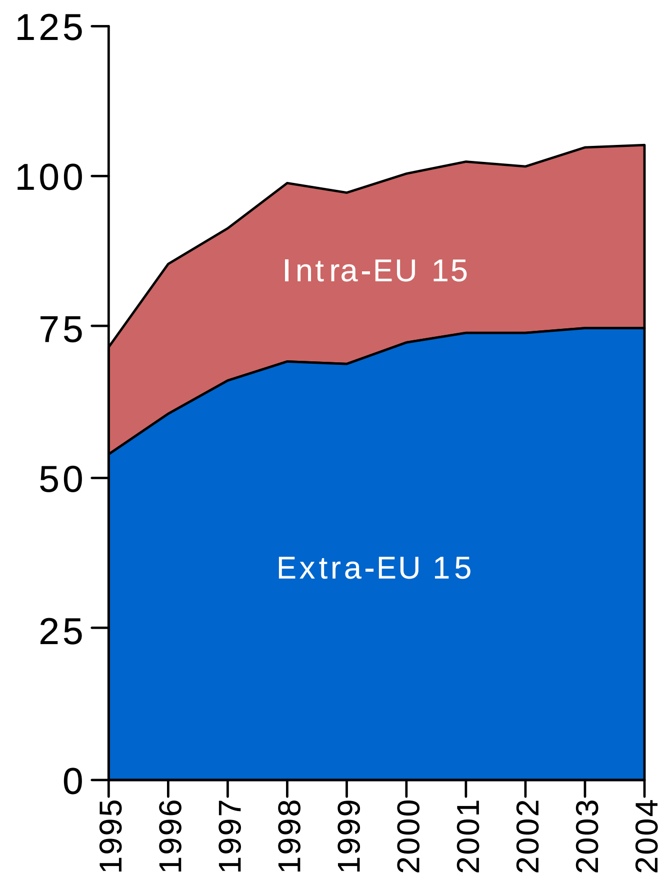
Value of Imports

Foliage imports
in Europe



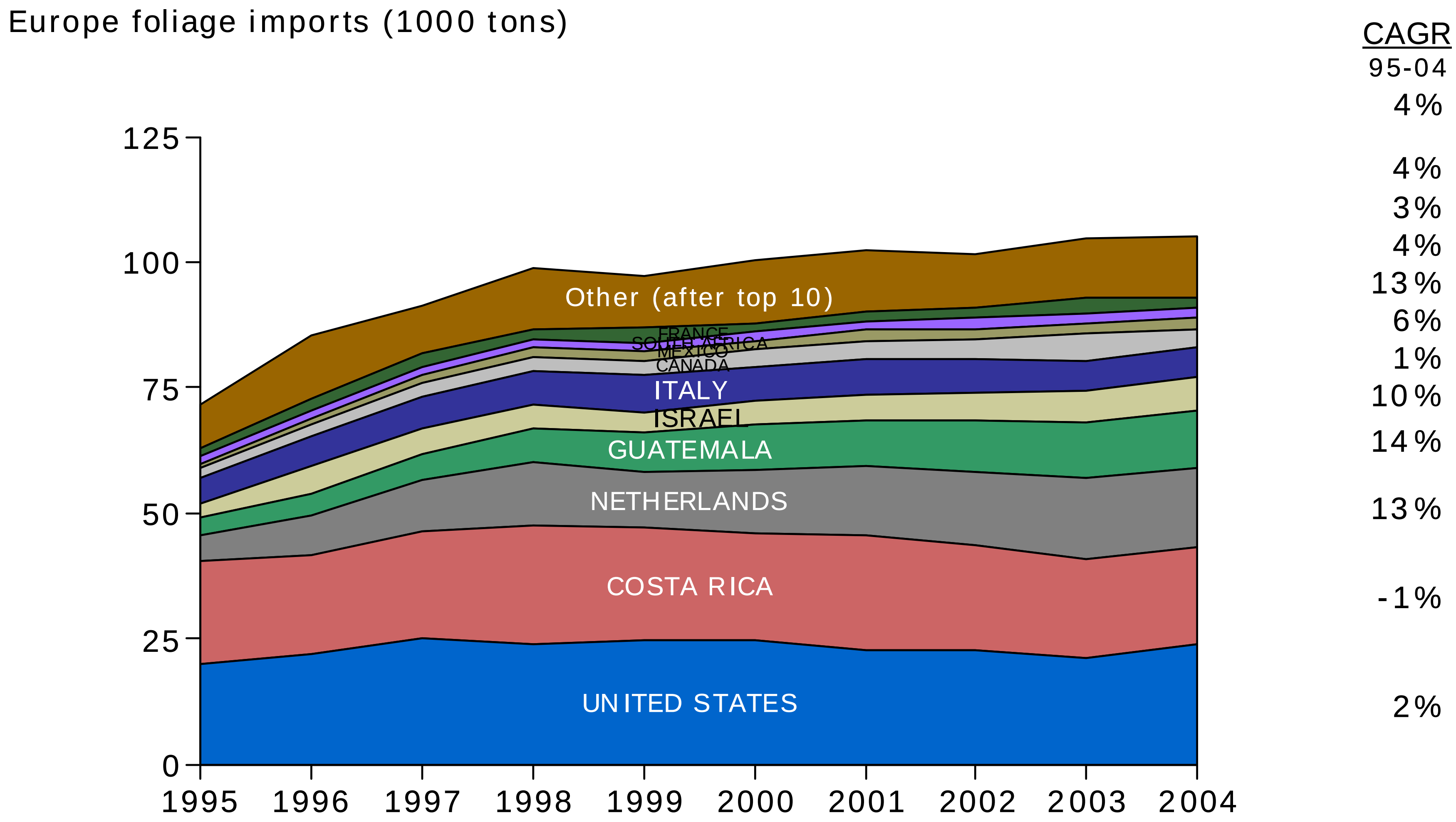
Volume of Imports

Foliage imports in
Europe (1000 tons)



Source: Eurostat 2004, CB category 06049190: “Foliage, branches, and other parts of plants, without flowers or flower buds, grasses, fresh, for ornamental purposes (excl. Christmas trees and conifer branches)”

The US and Costa Rica are consistently the largest foliage suppliers to Europe

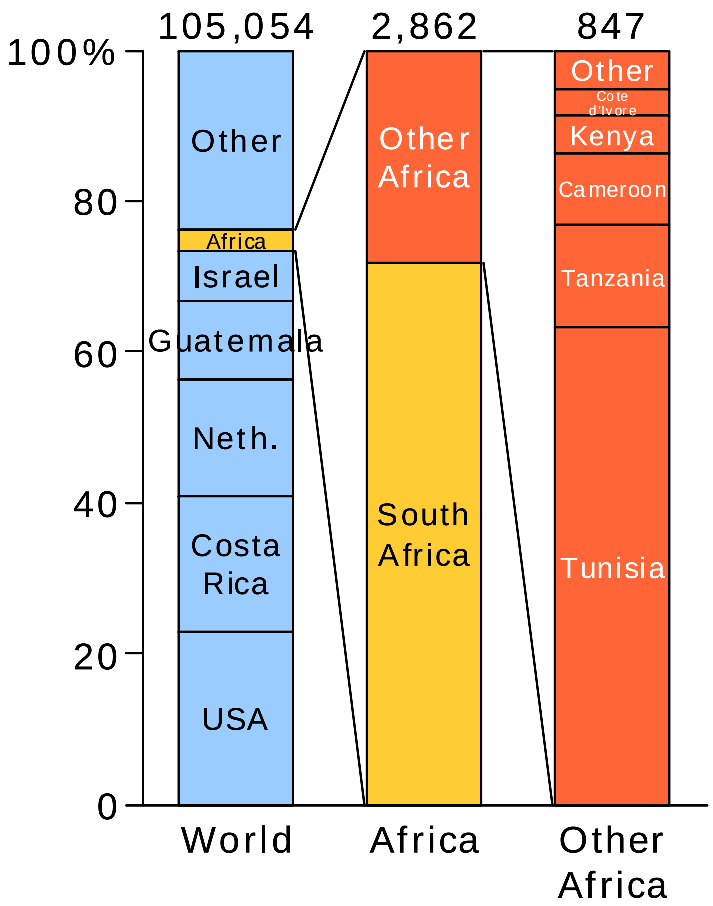


Source: Eurostat 2004, CB category 06049190: “Foliage, branches, and other parts of plants, without flowers or flower buds, grasses, fresh, for ornamental purposes (excl. Christmas trees and conifer branches)”

African countries are small players in European foliage market; a new producer can easily capture volume share

Market Share by Volume

European foliage imports in tons (2004)



- **South Africa** exported about **2,000 tons** of foliage in 2004, including:
  - Leucadendron
  - Typha
  - Cape green
  - Leather leaf
- **Other African countries** only exported **850 tons** in total

Source: Eurostat 2005 ; Economic model

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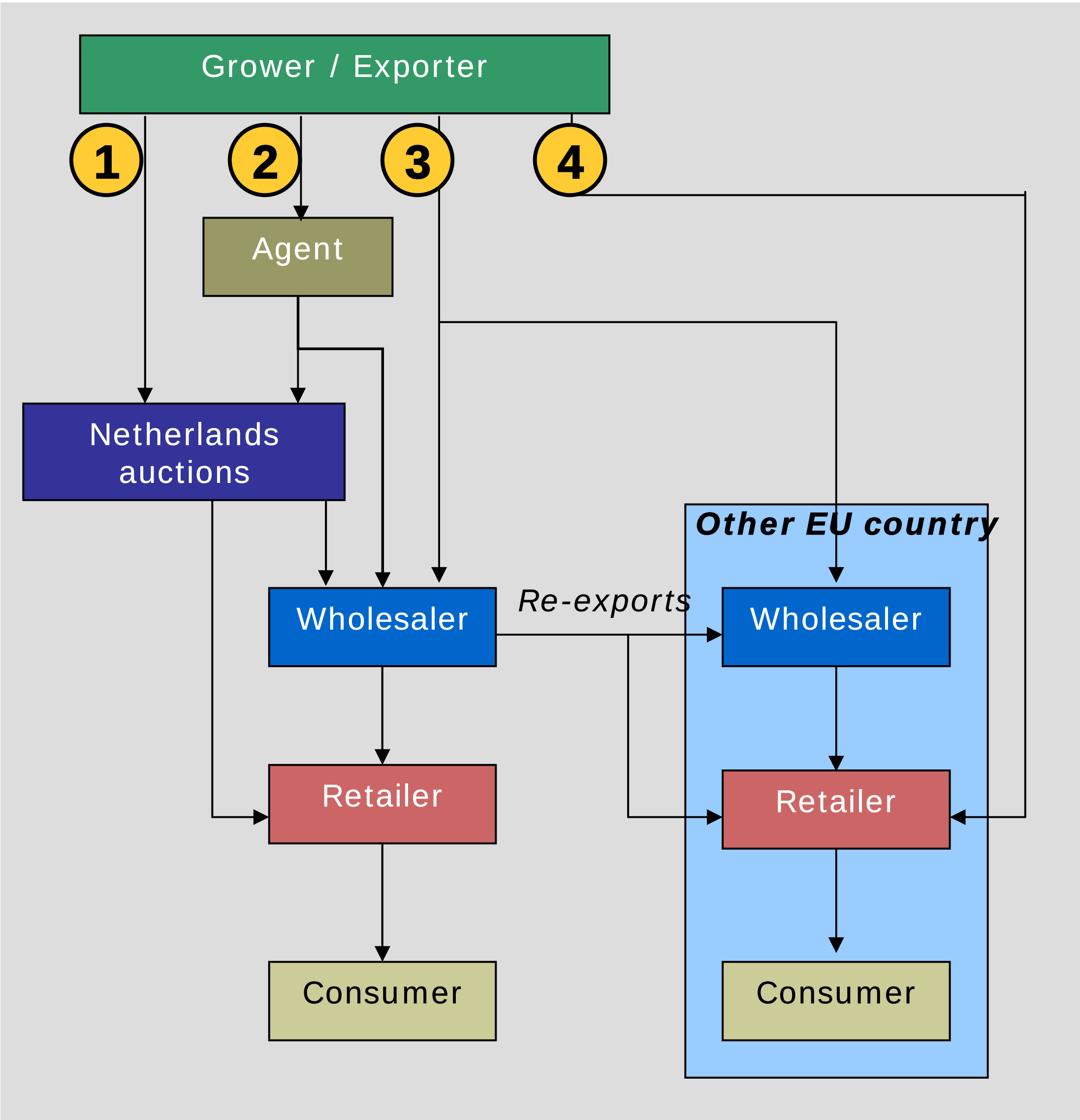
To access the European market, a grower has four options



1 Flower auctions

- Wholesale markets created by the growers to market their products
- There are about 10 flower auctions in Europe, 4 in the Netherlands

2 Agents

- Purchase and consolidate flowers
- Provide marketing information
- Divert growing volumes of flowers to supermarket chains, Dutch wholesalers, and foreign importers

3 Wholesalers/ Retail packers

- Pack product for retailer/ internet sales
- Act as consolidation and distribution facility
- Advise on the best method of selling the product
- Help obtain technical advice on growing of flowers and the young plant material

4 Retail chains

- Quality specifications are high and they are primarily interested in sourcing from large suppliers who can offer both single-species bunches and mixed bouquets
- Being able to supply these chains depends on the ability of the grower to comply with specific requirements of these retail chains (MPS, EUREPGAP)

Source: CBI 2004 Market Survey “Cut Flowers and Foliage”

Wholesalers are the best option for a new grower; auctions are a possibility for higher-end varieties

		Pros	Cons	Recommendation
1	**Flower Auctions**	• Full visibility to sell on open market • Live tracking and immediate and reliable payments	• High transaction costs (20-25% of revenue) make it unprofitable for low-price foliage	• **Possible for higher-price exotic varieties, where margins can be maintained**
2	**Agents**	• Assist with packing requirements and access to auctions, wholesalers, and retailers	• Not necessary if producer has direct access to wholesalers • Payments can be delayed	• Not necessary in the short term
3	**Wholesalers/ Retail Packers**	• A growing channel to consolidate and package product for retailers in several countries	• Little visibility in pricing when product is re-distributed to retailers	• **Best option for a foliage-only supplier to access growing retail market**
4	**Retailers**	• Growing distribution channel, as retailers are increasingly buying directly from producers	• Large volumes and variety required to sell directly to retailers • Strict packaging requirements	• Not feasible at current projected volumes, and without discreet packaging center in Europe

Source: CBI 2004 Market Survey "Cut Flowers and Foliage"

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Floriculture industry programs - summary

- Overview
  - There are several industry certification programs to access floriculture markets, both business-oriented and consumer-oriented
- Decision for certification should be based on target market
  - EUREPGAP is recommended for distribution to European retailers
  - MPS is used in the Dutch flower auctions. However, it is benchmarked with EurepGap, and is not necessary in addition to EurepGap
  - Max Havelaar is the leading “Fair Trade” flower label, targeted to Swiss consumers

Floriculture industry certification programs

		Standards for:					
		Product Safety	Env't	Social, Ethical	Quality, Packing	Target Group	Market
International	ICC	✓	✓	✓		• International growers	• Flower trading organizations
International	FFP (Fair Flowers & Plants)		✓	✓		• Growers • Traders • Importers	• Consumers
Europe	EUREPGAP	✓	✓	✓		• International growers	• European supermarkets
Europe	MPS	✓	✓	✓		• International growers	• Traders (Dutch flower auctions)
Europe	FLP (Flower Label Program)	✓	✓	✓		• Flower growers in developing countries	• German consumers
Europe	Max Havelaar			✓		• Flower growers in developing countries	• Swiss consumers
Europe	VBN (Dutch Flower Auctions)				✓	• Growers wanting to sell at Dutch flower auctions	• Traders (Dutch flower auctions)

Source: Program websites, CBI Access Guide

Overview of floriculture certification programs

Program	History	Description
• Int'l Code of Conduct (**ICC**)	• Created in 1998 with the cooperation of European NGO's and the International Union of Food and Agriculture Workers	• Provides minimum labor, human rights and environmental standards for the international cut-flower industry
• Fair Flowers & Plants (**FFP**)	• A new Fair Trade label, developed by a coalition of trade unions, NGOs and international flower trade organizations	• Environmentally sustainable and socially responsible production, based on ICC and MPS • First label for flowers and plants that will be used at consumer level
• **EUREPGAP**	• Founded in 1997 by a group of 17 European retailers. In 2002, launched standards for flowers and ornamentals	• Farm-gate standard for food safety, environmental, health & safety, social welfare • Flower code stresses minimizing pesticide use, correct application and worker protection
• Milieu Programma Sierteelt (**MPS**)	• Created in 1993 in an effort to reduce environmental impact of floriculture sector • Recent social standards: MPS-GAP and MPS-Socially Qualified • Has certified 85% of the flowers sold at the Dutch auctions	• MPS-ABC analyzes a pesticide use, recycling, energy and water use • MPS-GAP, benchmarked with EUREPGAP, sets requirements to supply participating European supermarkets, including labor and environmental standards
• Flower Label Program (**FLP**)	• Created in 1998 by a German consortium of two major flower trade associations, three human rights NGOs and a trade union	• Sets standards for human rights and environmental protection • Products sold in participating German retailers • Has combined audits with EUREPGAP
• **Max Havelaar**	• In 2001, Swiss supermarket chain Migros introduced flowers with a fair trade mark developed the by Max Havelaar Foundation, for ICC-certified cut flowers	• Provides market access at fair and sustainable conditions in disadvantaged regions in the southern hemisphere. Growers are paid a premium above conventionally-traded price
• Dutch Flower Auction (**VBN**)	• Cooperatives, in which breeders have united to organize their sales jointly • Handle approximately 60% of international cut flower trade (€2.3B sales in 2003)	• VBN issues norm sheets which specify the quality, packing, and marking standards required for each product

EUREPGAP summary

EUREPGAP®

European Retailers Protocol for Good Agricultural Practice
“Global partnership for safe and sustainable agriculture”

Industry standard for farm-gate protocols dealing with issues of food safety, environmental and worker welfare

Key Criteria

1. **Environment Protection**
   - Environmental Protection Good Agricultural Practices, to minimize negative impacts of agricultural production on the environment
2. **Occupational Health, Safety and Welfare**
   - A global level of occupational health and safety criteria on farms, as well as awareness and responsibility regarding socially related issues
3. **Animal Welfare (where applicable)**
   - A global level of animal welfare criteria on farms

Flower & Ornamentals Member Retailers

Switzerland: COOP, MIGROS

U.K.: MARKS & SPENCER, SAINSBURY'S, Somerfield, TESCO

Germany: METRO Group

Netherlands: CBL

Source: EurepGap website and documentation

EUREPGAP certification is recommended if European retailers are the target market

EUREPGAP Advantages

- Access to European retail markets
  - May command higher prices for product (e.g.: Marks & Spencer pays higher prices than other supermarkets)
- Due diligence defense on food safety, environmental and social welfare issues
- Increased customer confidence through meeting internationally recognized standard

EUREPGAP Downsides

- High initial and recurring costs for audit and compliance:
  - Annual verification audits
  - Internal record-keeping
  - Traceability systems
  - Lab analyses
- Only required for 8 European retailers, not necessary for others

EUREPGAP certification is recommended if a grower intends to see to European retailers

Option 1 for EUREPGAP certification is best suited to new commercial farms

			Benchmarking of National Schemes	
	1 Individual Grower Certification	2 Group Certification	3 Individual	4 Group
Description	• Intended for individual large commercial growers	• Intended for a large network of out-growers	• Existing national scheme can be benchmarked with EUREPGAP - For example, Assured Produce Scheme in U.K has been benchmarked and certified as being equivalent. Farmers with APS certificate receive EUREPGAP certification at no extra cost	
Process	1. Application made by individual grower 2. Grower applies to certifying body (CB) for certification, CB conducts audit 3. Grower conducts a minimum of one internal audit per annum 4. CB conducts an annual verification audit, and may make unannounced visits	• Group designated as Primary Marketing Organization (PMO), has 100% control via written contracts • PMO makes a pre-inspection of all sites • CB conducts annual system check of PMO • CB audits the square root of the total number of farm sites • PMO conducts an internal audit of farm sites at least once/yr	• The scheme applying for benchmarking is assessed by the EUREPGAP accreditation body for equivalence by comparing content and performance criteria against EUREPGAP • All registered farm sites are operating under the scheme rules • All certification carried out within the applicant scheme must be done by CB's • The frequency of verification audits must meet the requirements of Options 1 and 2	

Best option for new farm

Add'l certification if working with small-scale growers

No existing national schemes exist in new country

Source: EUREPGAP General Regulations for Flowers & Ornamentals,

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Competitive advantage and potential weaknesses for a new grower in Liberia

Competitive Advantage

- Growing conditions
  - Climate (temperature, humidity, rainfall) is ideal for growing tropical foliage
- Cost position
  - Low labor cost (and availability) can makes products competitive on the market
  - Close proximity to shipping points and markets
  - Land ownership
- Durable year-round product
  - Selected tropical foliage types have life span of up to 2 months, suitable for sea freight, throughout the year
  - Farm close to port and airport
- Marketing partner
  - A technical partner like Flower Dynamics creates immediate linkages to European and regional buyers

- Liberia offers good conditions for foliage products, and Europe is a viable market
- However, structural start-up issues in Liberia need to be addressed early in the process to ensure success

Threats and Weaknesses

- Red tape
  - Government processes for importing/ exporting can be costly and create delays
- Availability of skilled labor
  - It will take time to train staff on the growing procedures and management
- Start-up costs
  - A portion of fixed capital equipment (e.g. cold rooms) will need to be imported from outside Liberia
- Country stability

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Site evaluation summary

- One site was visited during the Feasibility Study and sea/air ports near location.

- Key criteria for evaluating the sites were:
  - Agro-ecological: Water availability, climate
    - Water and soil samples were not analyzed
  - Infrastructure: Electricity, communication, and road condition
  - Land and labor availability
  - Products at the location
  - Other potential product opportunities
  - Possible marketability of products and shipping options

- Project management/owners needs to make several decisions:
  - Whether to create the right infrastructure for commercial production
  - Whether to encourage tourism on a sector of the farm
  - Whether to involve the government in commercial test facilities and national botanical gardens
  - Whether to locate a international commercial partner

Site evaluation

Agro-Ecological

Climate	30 degrees year round 85% humidity
Water	Three small rivers Dam potential High rain fall *No storage facilities
Soil	Loam to sandy – Analysis to be done
Wind	10-15Km/hour
Altitude	<200m
Land Slope	5-7%
Land arable	Approximately 75 acres Proposed that 30 to 40 hectares for commercial production on a 5 year planting program on an assortment of new products. 10 hectares for tourism and test facilities.
Labor availability	>100 workers available

Infrastructure

Road condition	Main road fair Farm road Poor
Transport time to port	2 hours
Distance to port	Approx 60km
Transport time to airport	1 hour
Distance to airport	Approximately 40km
Communications	Fair - needs to be upgraded for farm operation/office
Electricity	Poor - require generators
Offices and buildings	Poor - require all new

Product current and future options

Current products

	Type	Export potential
Palm	Fish tail (Caryota) Bamboo	Yes Yes
Monstera		Yes
Codyline	Various	No - old varieties
Calathea	Various	Possible - old varieties
Heliconia	Various	No - limited (Air freight)
Ginger	Various colours	No - limited (Air freight)
Various annuals	Celosia	No
Various perennials	Aster Hydranger	No Yes - Limited (Air freight)
Philodendron Monstera	Various	Yes

Potential new products for commercial exports

Palm	Red Chamardorea Blechnum Areca Licuala Howea Phoenix Roebelenii Washingtonia
Cordyline	All new types
Guzmania	All new types Small plants/full
Asparagus fern	Virgatus Densiflorus Setaceus
Calathea	All new types
Philodendron	All
Fern	Leather leaf Nephrolepis - Sword fern Other new types (Umberella, etc)

Local market opportunities

Opportunities local

Tourism (Lodges and botanical garden)
Palms for the refurbishment of Monrovia
Office plants – pots and monthly rentals
Landscaping
Commercial pot plant sales (Refurbishment of brand and product) Increase range of products available

Potential new products local

		Foliage/cut Flower	Pot plants	Landscape	Other use
Orchid	All types	yes	yes	no	no
Vanilla	Spice	no	no	no	yes
Guzmania	All types	yes	yes	yes	no
Palms	All types	yes	yes	yes	yes
Anthurium		yes	yes	yes	no

Foliage opportunity – Liberia Terravilla Gardens

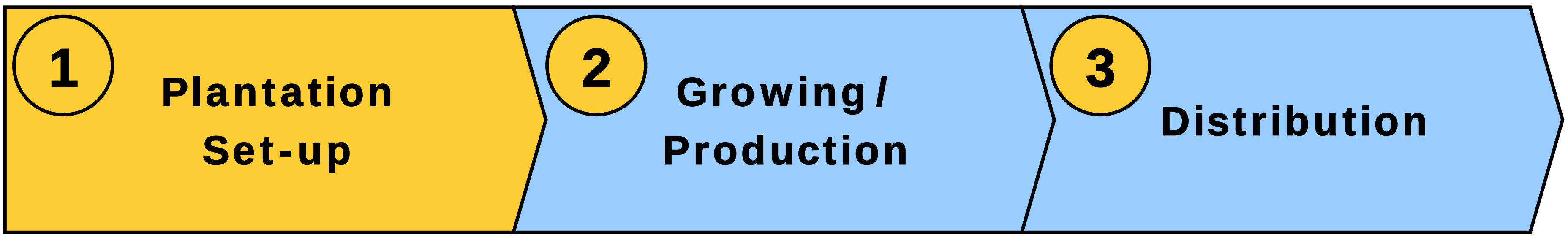

1. Identifying the potential

2. Developing the base

3. Capturing the value

4. Integrating for impact


Foliage value chain



Plantation set-up requirements

	Land Clearing	Electricity	Irrigation	Shade Structure	Planting
Description:	• Clear brush • Prepare land • Remove debris • Road improvements	• Connect to power line • Purchase diesel generators	• Construct: -Pump house -Reservoir -Pipes -Sprinklers -Fertigation units	• Build framework • Assemble shade cloth	• Soil preparation • Soil sterilization • Planting
Capital equipment required:	Tractor and Implements • Road	• Generators • Power line • Possible hydro for future	• Pump house and equipment • Irrigation system	• Poles • Wire • Shade cloth	• Tractor (as before) • Implements (as before)
Inputs:	• Diesel/petrol for tractor	• None	• None	• None	• Growing medium program with coconut husks • Plant material
Staff required:	• Contractor	• Contractor	• Contractor	• Contractor or employed staff	• Temporary labor or employed

Foliage value chain

Foliage production requirements

	Growing	Harvesting	Storage	Sorting	Packing
Description:	• Continuous watering, spraying, fertilizing	• Manual harvesting - Cut plants - Aggregate into buckets - Transfer to cold storage	• Store stems in cold rooms at 2-4 degrees until ready for packing and transport	• Sort stems by length, color, freshness, thickness	• Pack stems in cold room according to market standards
Facilities required:	• None	• None	• Cold rooms • Shelves	• Pack house	• Pack house
Capital equipment required:	• Irrigation structure • Spraying system (for tractor)	• Cutting equipment - Secateurs - Buckets - Trolleys	• Buckets for storage	• Sorting tables	• Sorting tables
Inputs required:	• Pesticides, herbicides, fertilizer	• Post-harvest treatment - Mineral oil - Surfactant	• Water treatment (chlorine, surfactant)	• None	• Packing boxes, lining paper, elastic bands
Staff required:	• 5 per hectare	• 5 per hectare	• None	• 3 per hectare in pack house	• 3 per hectare in pack house

Once plantation is established, production can be extended to out-growers and smallholders

More control ⟷ **Less control**

	Plantation	Out-growers	Smallholders

Description:	• 30 to 50 hectare own farm
	• Plantation pays for infrastructure, inputs
	• Permanent staff hired to maintain and harvest product (5 per hectare)
		• Each farmer manages 1-2 hectares adjacent to plantation
		• Plantation provides
		  - Infrastructure (land, irrigation)
		  - Inputs (seeds, tools)
		  - Technical assistance
		• Farmers receive commission based on production
			• Each family grows their own 5-6 hectares
			• Plantation provides
			  - Inputs (seeds, tools)
			  - Technical assistance (regular visits from extensioner)
			• Inputs are paid back after harvest

Pros:	• High quality control	• Low ongoing costs • Incentive to grow volumes	• Low investment • Community training and involvement
Cons:	• High initial and ongoing costs	• High initial investment • Lack of land ownership may lead out-growers to grow other products	• Difficult to manage quality remotely • Potential risk of side-selling

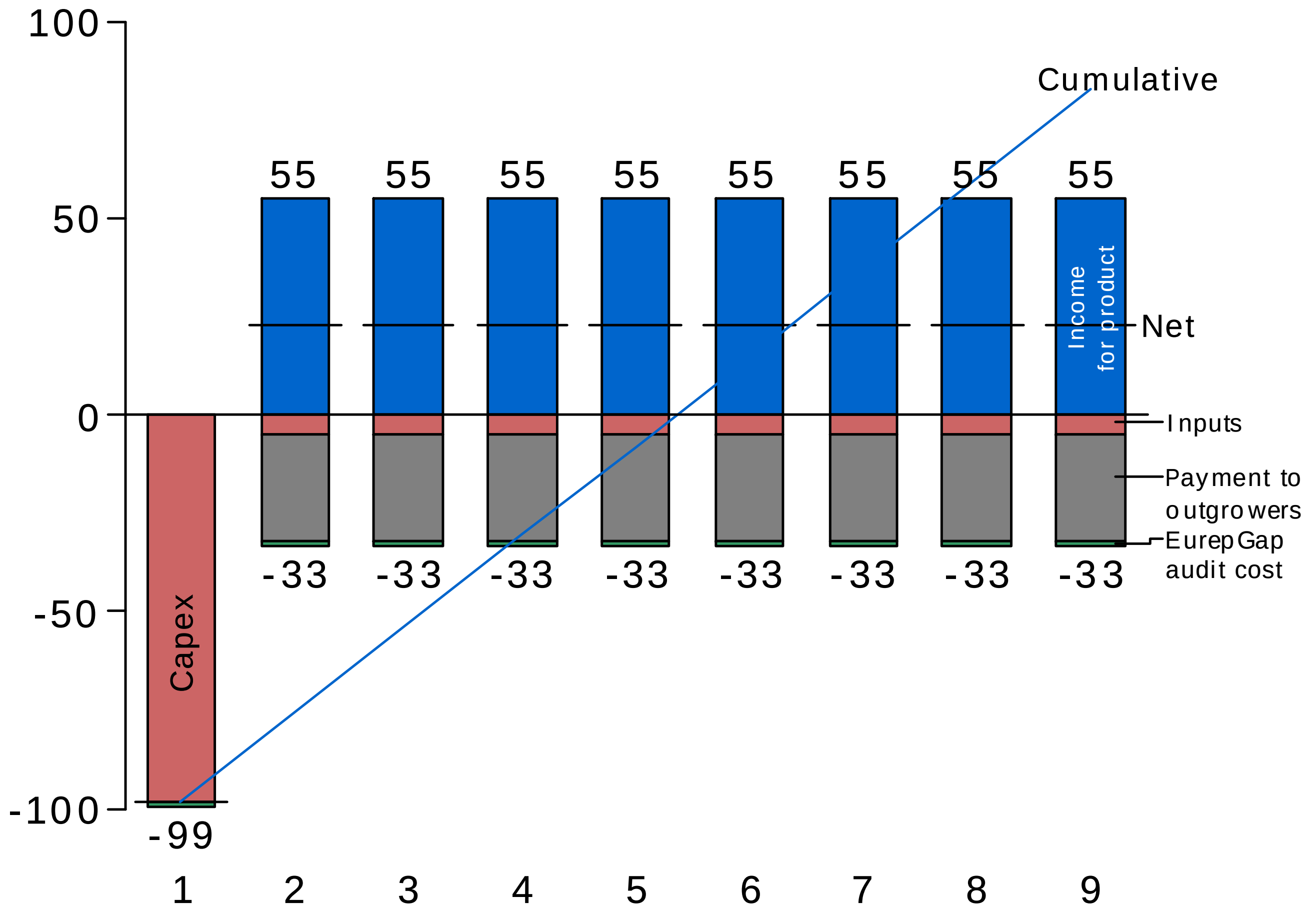
Year 1 → **Training** → Years 2-5 → **Experience** → Year 5+

Out-grower program can be profitable for the plantation...

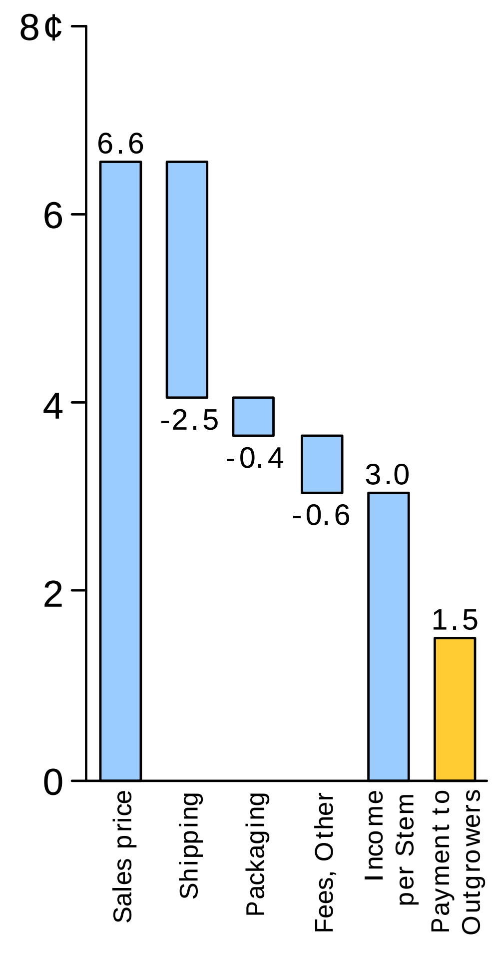
Plantation would break-even on out-grower program by year 6

By selling foliage at twice the purchase price

Plantation cash flow



Income per stem

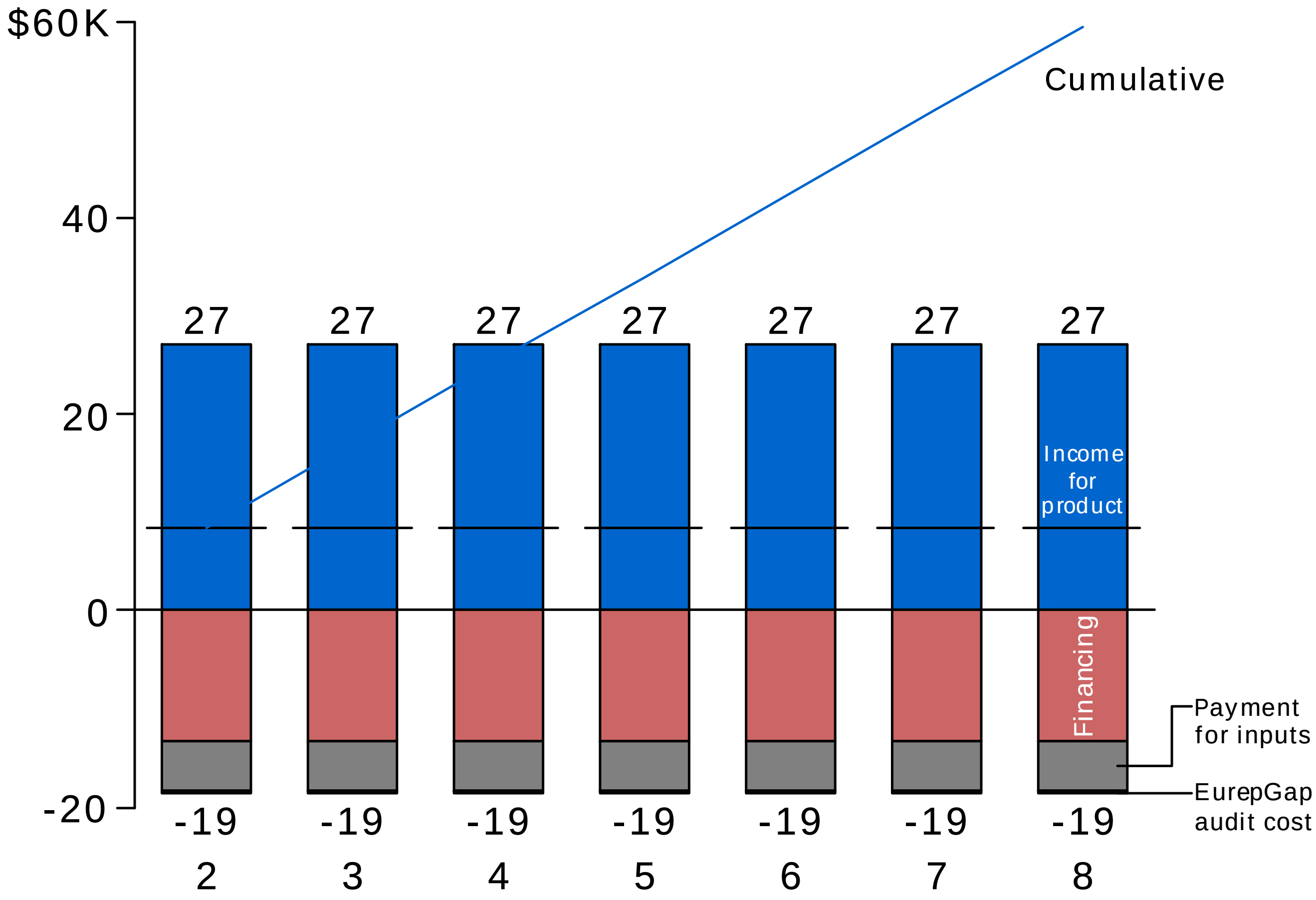


Source: Economic model

...and for the out-growers involved

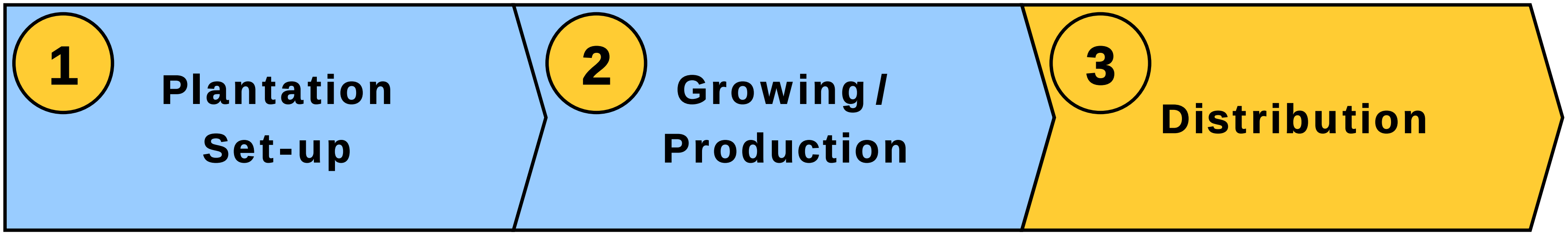
Out-growers would receive financing for infrastructure that would be deducted from the sales of the foliage

Outgrower cash flow
(for one hectare)



Note: Foliage out-grower monthly income based on family of 5 per one hectare

Foliage value chain



Distribution - summary

- In the short-term of commercial planting (First year of planting), low volumes of production can be sent to Kenya and Europe by air. There is two flights to both locations weekly with good cargo capacity. Identification of cliental based on product availability. Current cliental identified as the following –
- East African Flower Group – Kenya
- Homegrown/Flamingo Flowers – Kenya
- Oserian group – Kenya
- Oudendijk – The Netherlands – Distribution to retail consumers and auctions.
- Straelener – Germany – Distribution to retail consumers, wholesalers and NBV.

- Once at full-scale production, shipping times to Europe are suitable to sea-freighting foliage
  - Average shipping times 12 days from Monrovia fits well into the 8-week lifespan of foliage
  - However, with only there is a limitation of shipping lines and deliveries need to be scheduled according to shipping schedules

Airfreight

- No facilities at Monrovia airport.
- Product packed on farm, palletized in air containers and delivered directly to the aircraft.
- Good air freight capacity to Nairobi and Brussels (Trucking to Holland)

Monrovia port and Umarco/Maersk offer sufficient facilities for refrigerated containers

Pick-Up and Packing

- Containers (Refrigerated) delivered to location. Containers packed on the farm.

Facilities

- Refrigerated containers loaded immediately on ship – no power points at harbor

Monitoring

- Umarco/Maersk staff measure and monitor temperature of each container

Loading

- refrigerated containers get priority for loading

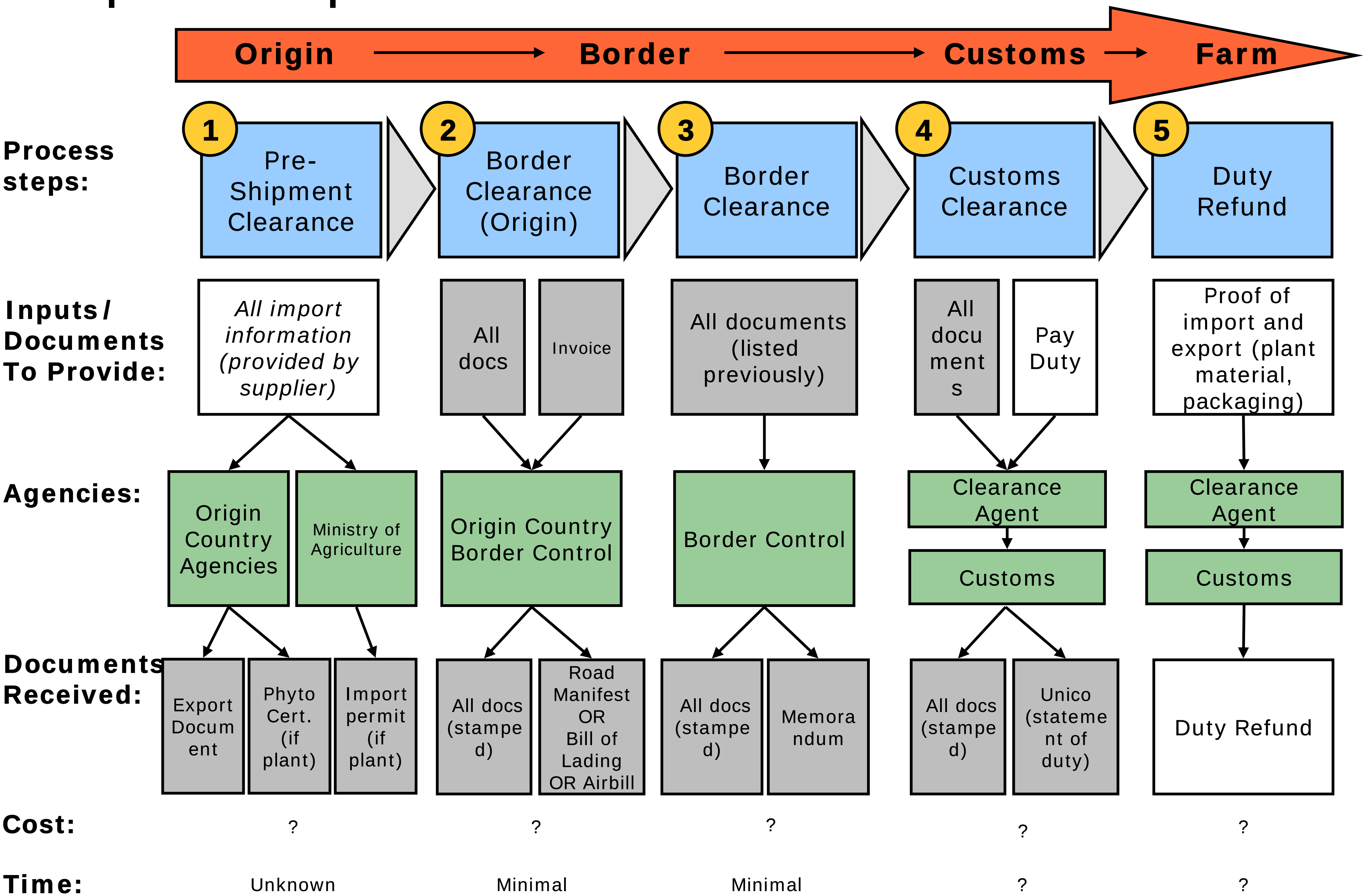
Source: Umarcoand quotes from interviews

Horticulture export requirements in Liberia

Farm → **Customs** → **Port / airport**

	1	2	3	4	5
Process steps:	Certificate of Origin	Phyto-sanitary Inspection	Invoice Registration	Customs Pre-Clearance	Border Clearance
Inputs / Documents To Provide:	Shipment and Product Details	*Sample of Product for Shipment (often nominal)*	Invoice; Bank Letter of Pay-ment/ Mother Invoice	All documents; Pay Fees	Copies of All Documents
Agencies:	Commerce **or** Customs	Ministry of Agriculture	Ministry of Industry & Commerce	Clearance Agent → Customs Office	Customs (at border)
Documents Received:	Form A **or** Euro 1	Phyto-sanitary Certificate	Stamped Invoice	All Documents (stamped); Road Manifest OR Bill of Lading OR Air waybill	
Cost:	? ?	?	?	?	?
When:	Apply 1 week before shipment, fill out same-day	1-2 days before shipment	Begin 1 week before shipment	Send documents 1-3 days before shipment	

Import requirements in Liberia



Foliage opportunity – Liberia Terravilla Gardens

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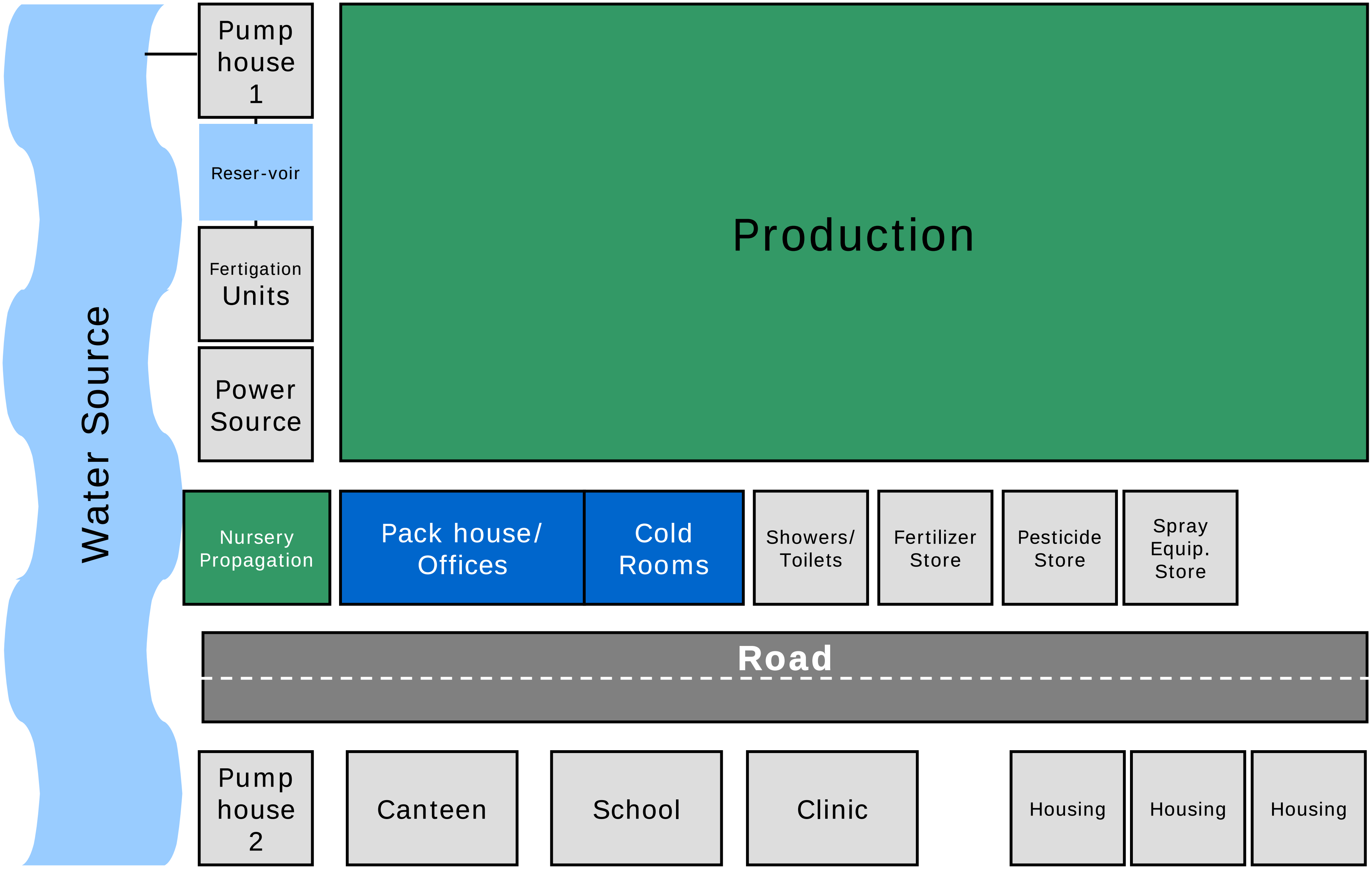
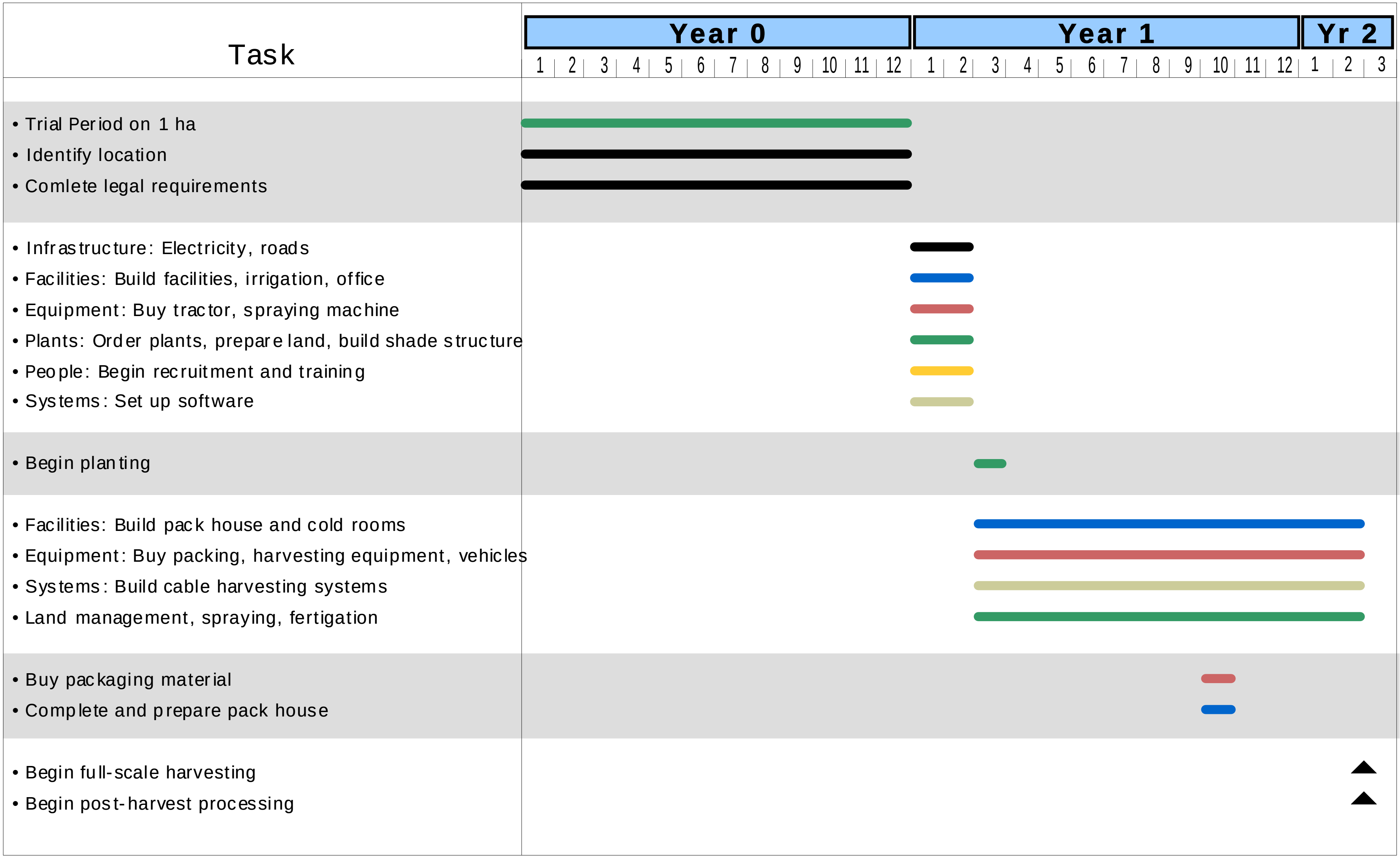
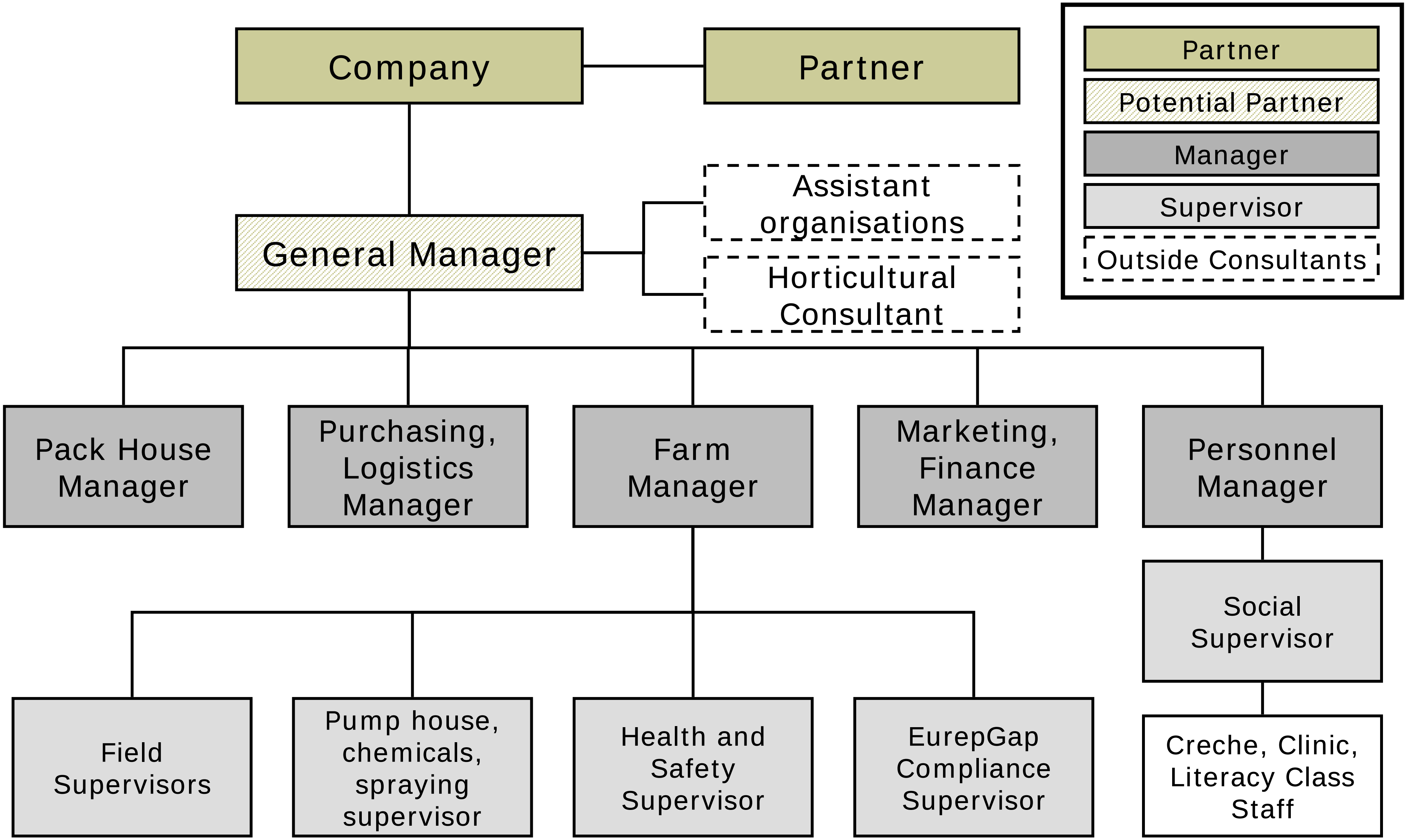
Foliage plantation set-up example



Proposed timeline



Proposed management structure

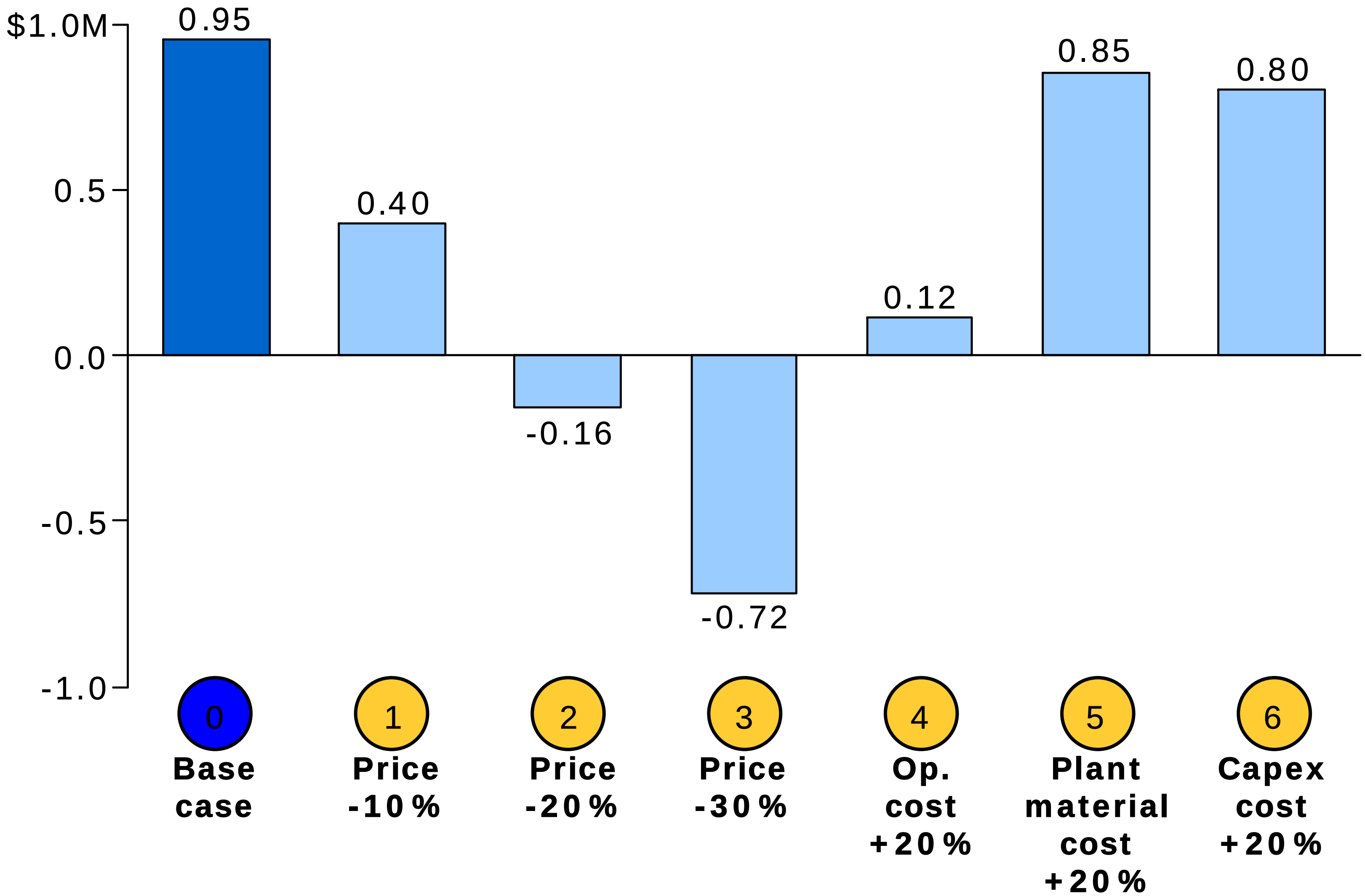


Risk analysis

	Risk Factor	Cause	Steps to Mitigate Risk
Sales	**Price fluctuation**	• Prices of varieties drop by over 30% due to oversupply	• Grow at least 3-4 varieties to minimize market risk
Sales	**Change in demand**	• Varieties are not bought, or bought at low-price	• Same as above
Costs	**Increased operating costs**	• Minimum wage, fuel or shipping costs increase	• Ensure regular cost controls and solid management
Costs	**Increased capex costs**	• Cost of plant material increases	• Set up nursery, propagate plant material if possible
Other	**Wrong variety choice**	• Varieties chosen don't grow or don't sell	• Conduct "trial period" to test how varieties grow
Other	**Low productivity**	• Yields per hectare are below expectations	• Invest in staff training year 1 • Invest in staff retention
Other	**Loss of selling agent / partner**	• Contract cancelled or buyer pulls out of agreement	• Establish relationships with several buyers • Possible to sell through auctions as "last resort"

Risk evaluation

Year 2 EBIT



Note: EBIT is earnings before interest and tax
Source: Financial model