



Grapefruit

Small-scale Review of Grapefruit

Short analysis of the grapefruit/pomelo sector as regards demand, competitiveness, impact and opportunities with the aim of helping to eradicate poverty in Vietnam through market forces

December 2008

Prepared by the Center for Agricultural Policy with Prosperity Initiative

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Foreword

This is one of a group of studies carried out by staff from the Center for Agricultural Policy (CAP) of the Institute of Policy and Strategy for Agriculture and Rural Development ([IPSARD](#)), the think-tank associated with Viet Nam's Ministry of Agriculture and Rural Development (MARD, supported by managers from Prosperity Initiative (PI), a non-profit company which develops market sectors to create prosperity for large numbers of poor people in the Mekong Region.

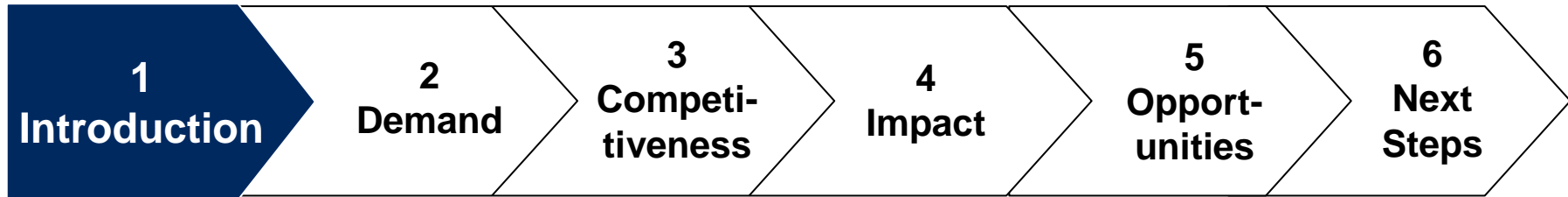
PI and its partners find and develop sectors that can reduce poverty for hundreds of thousands of people. It works with public, private and development organisations across the Mekong Region to identify and implement viable and sustainable ways of developing and growing a sector to achieve a measurable impact on poverty.

In the light of IPSARD's central role in rural policy development and its mandate to develop a commodity expert group, PI has been working with CAP-IPSARD to contribute to the development of appropriate skills and market knowledge. A group of staff from CAP has been working with a team of managers from PI since the beginning of 2008 and has been completing ten short sector studies during this first year. The work has also included contributing joint research on the coffee industry, and – arising out of one of the short studies – providing support to a continuing in-depth study by PI on the coconut industry. Other sectors covered have included honey, bananas, soybeans, groundnuts, pomelo, chili, cardamom and cocoa. This joint work has been the context for technical skills development and capacity building of 9 staff from CAP-IPSARD during 2008.

The majority of the work in the studies was carried out by staff from CAP using both primary research in Vietnam and data from local and international secondary sources, with guidance and coaching from PI's managers. Samples of this work can be downloaded at <http://www.prosperityinitiative.org/>. During this work, appropriate efforts have been made to ensure accuracy and to acknowledge secondary data sources; any error of omission or commission or any misattribution is accidental.

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1. Introduction



- PI / CAP approach to sector analysis

- Overview of the grapefruit/pomelo sector
- Segments and study focus

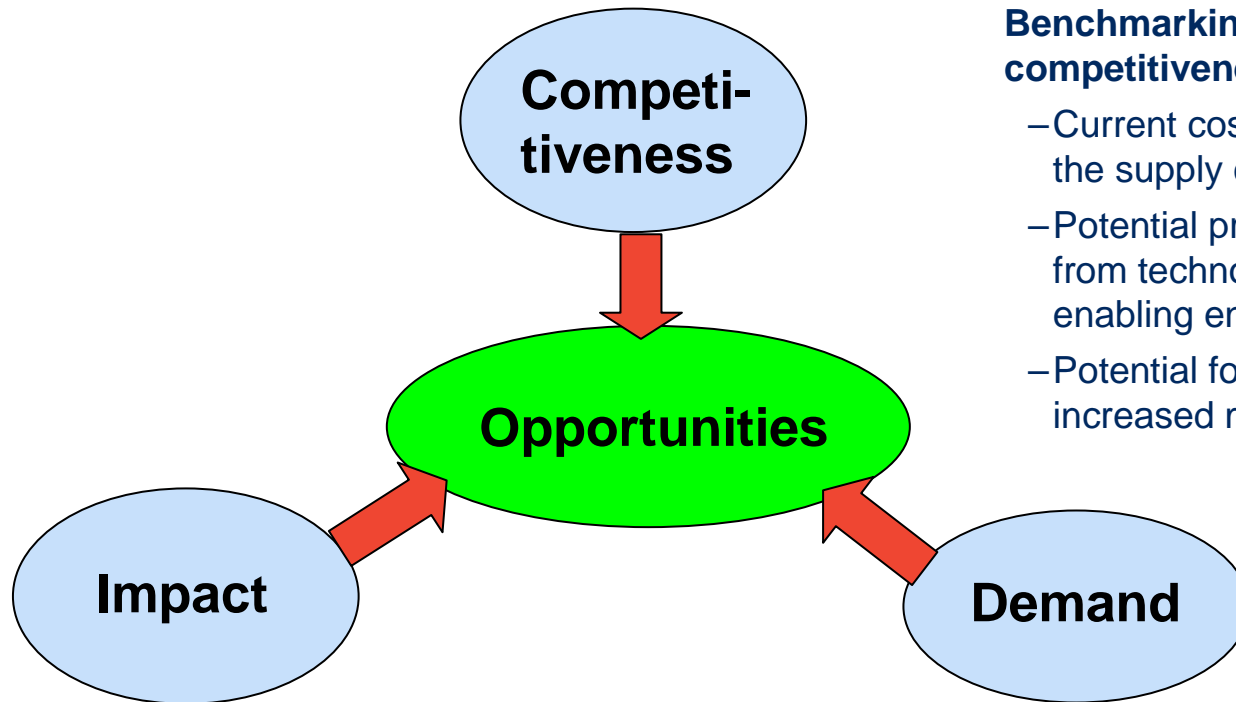
This is one of a series of small-scale studies carried out by the Center for Agricultural Policy* supported by Prosperity Initiative to identify opportunities to assist in eradicating poverty in rural Vietnam through market forces

While small in scope, these studies seeks to provide provisional answers to several questions:

- ❖ Is there likely to be sufficient future demand, i.e. a domestic or international market with the willingness and ability to spend on the relevant commodity?
- ❖ Are there international benchmarks to support the case for industry investment in Vietnam as against other countries?
- ❖ What other opportunities do there appear to be to enhance the competitiveness of the industry in favour of the target group of poorer people?
- ❖ How is development of the industry likely to benefit poor people in the rural areas of Vietnam?
- ❖ Why should a target poor group choose to make their livelihood from the commodity rather than an available alternative?
- ❖ Does the sector look sufficiently promising in terms of potential size and impact on rural poverty to merit more in-depth review/feasibility?
- ❖ If the sector presents opportunities for a reduction in poverty, are CAP and PI best placed to take this further or how should it otherwise be handled?

* The Center for Agricultural Policy (CAP) is a semi-autonomous center within the Institute of Policy and Strategy for Agricultural and Rural Development (IPSARD) within the Ministry of Agriculture and Rural Development (MARD) of the Government of Viet Nam

Achieving poverty reduction at scale through market forces requires assessment of demand and competitiveness in the sector with potential to have a positive impact on household incomes.



Benchmarking and analysis of competitiveness

- Current costs of production along the supply chain
- Potential productivity gains, e.g. from technology, skills, sector-enabling environment, etc.
- Potential for market access and increased market share

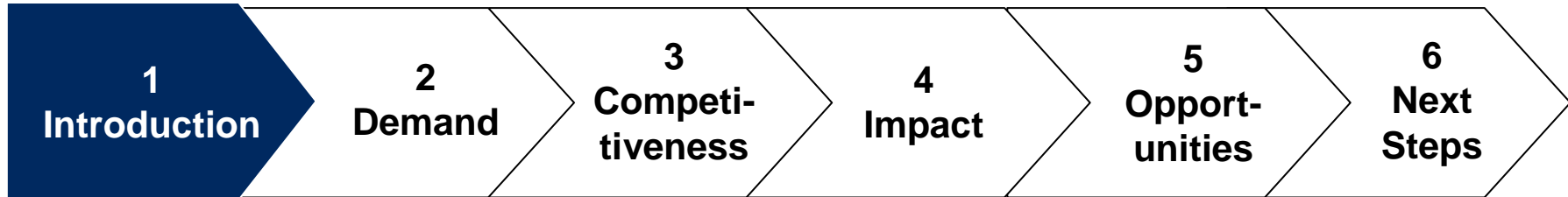
Distribution of potential benefits

- People out of poverty per \$ invested
- Environmental impact
- Social implications

Understanding market dynamics

- Supply, demand, stocks and prices
- Market outlook
- Scale of production supportable by future demand

1. Introduction

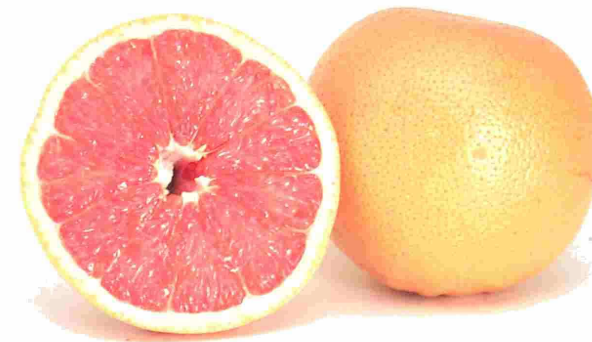


- **PI / CAP approach to sector analysis**
- **Overview of the grapefruit/pomelo sector**
- **Segments and study focus**

Grapefruit – Summary of the fruit

- **Botanical name:** CITRUS PARADISI
- **Description:** The grapefruit tree is evergreen and small. The leaves are often large and oval in shape, glossy green in colour, are dotted with oil glands and have broadly winged petioles (leaf stalks). Branches sometimes have spines but these tend to be flexible, slender and blunt
- **Growing Environment:** The major citrus production areas of the world are generally characterised by low to moderate rainfall, with cool winters and warm to hot dry summers. Grapefruit will grow in a wide range of soil types. They will grow best in soils of a medium texture, moderate depth, good drainage, high fertility, slightly acid pH and low in soluble salts
- **Season:** The grapefruit season is exceptionally long. In certain climates it can be all year round. After reaching maturity the fruit does not lose quality but keeps well on the tree and continues to grow in size for several months. In areas where the main harvesting season starts in September – October, grapefruit can be picked until the end of April. This prolongs the season and improves productivity. The only drawback is that it delays new flowering but picking the ripest fruit evenly around the tree minimizes the effect
- **Uses:** The juice and the flesh of the grapefruit have traditionally been popular as part of breakfast, but are also used to flavour and garnish food
- **Native Range:** The United States is the dominant grapefruit producer in the world. Other important producers are Israel, Cuba, Mexico, Argentina and Southern Africa.

Source: Northern Territory Government



Note: As explained later in this report, grapefruit and pomelo are very closely related but not exactly the same. Since Vietnam primarily produces pomelo rather than species of grapefruit, this report has a particular focus on pomelo. However, in view of the interchangeability of the products in many markets, this report covers both fruits and the terms “grapefruit” and “pomelo” are frequently used interchangeably.

There are three main varieties of grapefruit based on their colours

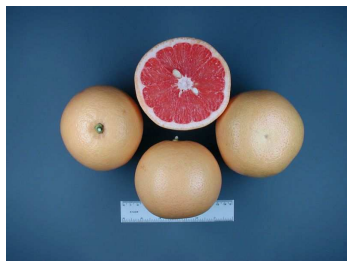
Grapefruit can be divided into three main categories according to the colour of their flesh, juice and skin. The exact colour of any grapefruit variety is affected by soil and climate and can vary from one year to the next



Yellow or pale coloured varieties include:
Duncan, Marsh, Oroblanco, Goldens, Wheeney, Sweetie and Melogold.



The most common pink varieties are:
Henderson Ruby, Ruby, Marsh Ruby, Ray Ruby, Red Blush, Thompson and Foster.



Grapefruit varieties often exhibiting a deeper shade of red are:
Star Ruby, Ruby Red, Ray, Rio, Rio Star, Rio Red, Sunrise and Jaffa Sunrise.

- During the period of growing, the intensity of colour changes due to chemical processes in the fruit. The maturation from flowering to ripe fruit is fairly long; depending on the geographical area, soil and prevailing weather it can take 8 - 13 months
- The colour is medium strong in a fruit that is about to reach maturity and reaches maximum strength during the first weeks of full ripeness. After that the colour starts to fade and in a few months decreases significantly.

Source: users.kymp.net

Pomelo (Shaddock) is the largest citrus in the world

- **Botanical name:** Citrus maxima, Citrus grandis.
- **Description:** Small to medium sized tree, usually only 10-20ft high, but may grow to 50ft under ideal conditions. Trees can flower up to four times a year.
- **Growing Environment:** The pomelo is frost hardy, but grows best in warmer climates with lots of rainfall. It is an ideal choice for tropical zones, but also grows well in subtropical climates. Trees also grow well in swampy damp soil and are often found growing wild along river banks and streams.
- **Uses:** Commonly eaten fresh, much like the grapefruit. The fruit is also squeezed for its juice
- **Native Range:** Native to southeast Asia and a number of Pacific Islands. It is grown commercially in Asia.



Source: tradewindsfruit.com

Grapefruit and Pomelo (Shaddock) are closely related and frequently confused

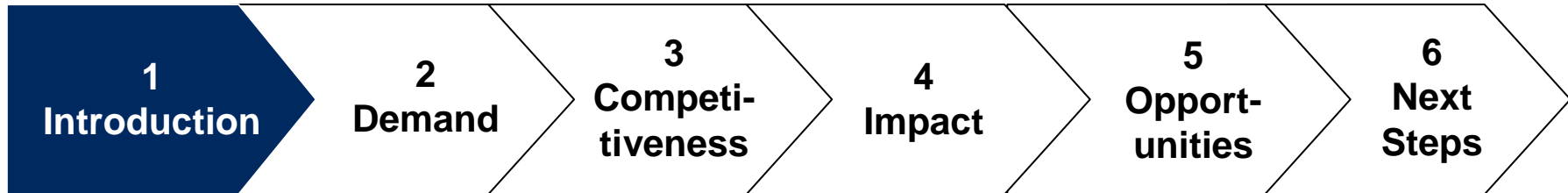
Grapefruit and pomelo are frequently confused in common or trade usage. But the two fruits are not in fact the same species and have different characteristics:

- Grapefruit (**Citrus paradisi**): the tree resulted from a cross between a sweet orange (**Citrus sinensis**) and pomelo (**Citrus maxima**). Grapefruit is intermediate in size between pomelo and orange, but like either parents is acidic instead of sweet
- While grapefruit has a thick tough skin and somewhat bitter flesh, Pomelo has very thick skin, which is loose, fibrous and easily removed. Pomelo is firmer and less juicy than grapefruit

		
Fruit characteristics	Grapefruit	Shaddock
Size (diameter)	8 – 15 cm	10 – 30 cm
Weight	250 – 500 g	400 g – 2 kg
Shape	flattened to pear-shaped	flattened to pear-shaped
Peel	fine to medium thickness	thick to very thick
Central axis	open, little or medium-developed	open or closed, well developed
Seeds	few or none	from none to numerous
Pulp colour	pale yellow, pink or strong red	pale yellow, pink or strong red
Pulp texture	juicy	firm or even crunchy
Bitterness	weak to strong	none to weak

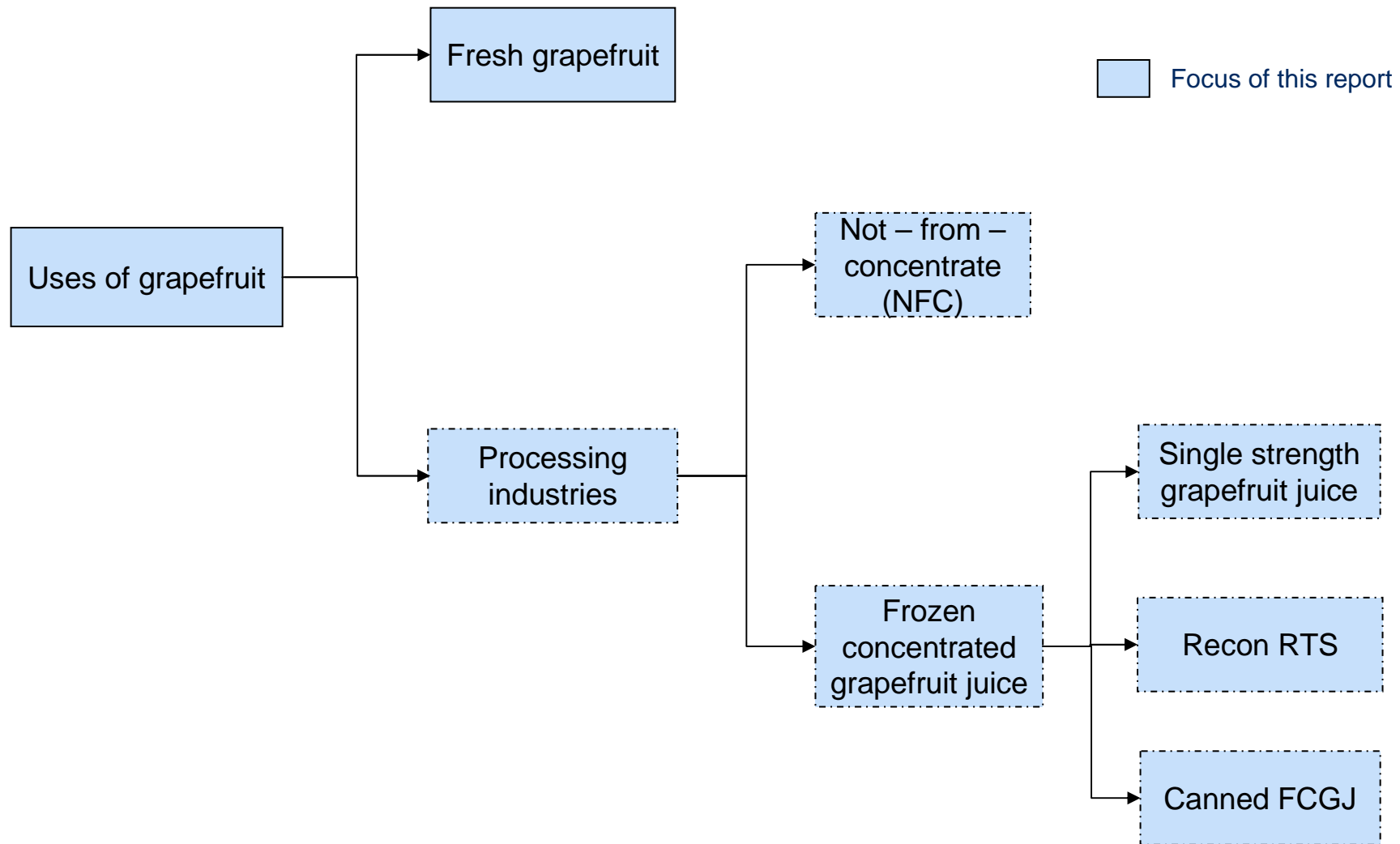
Source: Fruitrop

1. Introduction



- PI / CAP approach to sector analysis
- Overview of the grapefruit/pomelo sector
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World grapefruit production has two main outlets – the fresh fruit market and the processing industry. This report focuses on the fresh fruit market

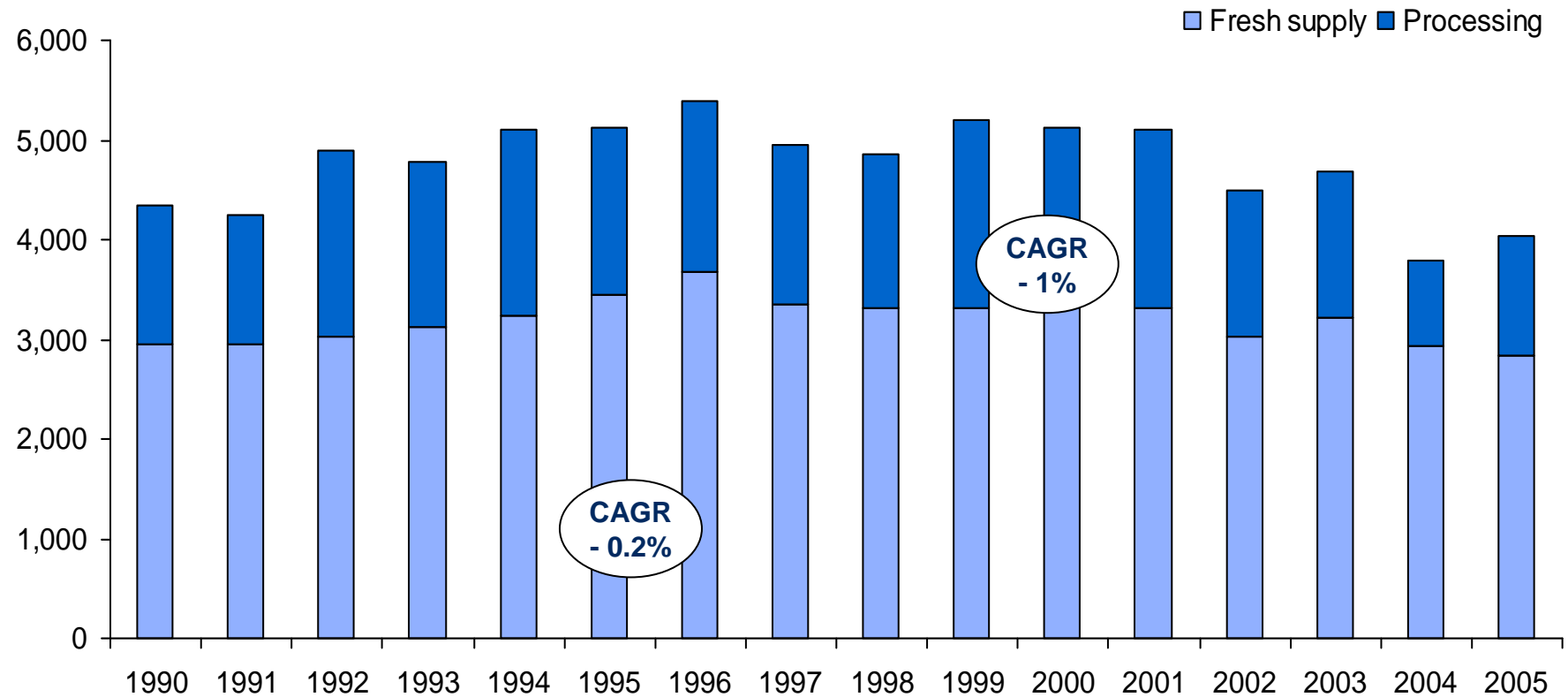


Source: ultimatecitrus, answers.com

Fresh fruit sales account for about 70% of the market, with the remainder used for processing

Total production of grapefruit 1990-2005

In 1000 Tons



Source: FAO - USDA

The processed grapefruit product takes several different forms, but is not reviewed in any depth in this report

Frozen concentrated grapefruit juice	<ul style="list-style-type: none">After fruit enter the plant, they are washed, juiced with a press or extractor, and strained to remove peel and rag. The juice then goes to the finisher, where excess pulp and essential oils are removed from the juice. It is then concentrated by an evaporator. The bulk concentrate is stored in tank farms and transported in refrigerated trucks, train cars, or ships. The bulk concentrate is packaged into consumer-or industrial-sized containers.
NFC (Not from concentrate)	<ul style="list-style-type: none">After juice extraction, it is de-oiled to .02%-.04% oil levels with a centrifuge, then either pasteurized, chilled and packaged or stored for future sale and/or packaging. NFC is stored a number of ways: frozen as blocks in warehouses; frozen in 55-gallon drums; pasteurized and chilled in large stainless steel aseptic tanks; or, pasteurized and chilled in 4'x4' wooden boxes containing a plastic bag which holds about 300 gallons of juice.
Canned FCGJ	<ul style="list-style-type: none">Bulk FCGJ is packaged by marketers into chilled reconstituted (recon) ready-to-serve (RTS) grapefruit juice. Packaged FCGJ is made by adding single-strength juice or water and flavor oils and essences to bulk FCGJ to reduce it from 65°brix to 42°brix, which is a four-to-one strength ratio to normal single-strength juice. Then the product is packaged into 6-, 12-, or 24-oz. cans and sold in frozen form. To convert this FCGJ into ready-to-drink grapefruit juice, consumers thaw it and then mix it with three parts water.
Recon RTS	<ul style="list-style-type: none">Recon RTS is made by adding water and flavor oils and essences to bulk FCGJ to reduce it from 65°brix to 11.8°brix, pasteurizing it, packaging it in cardboard cartons or glass containers and selling it as chilled RTS orange juice.
Single strength grapefruit juice	<ul style="list-style-type: none">Single strength grapefruit juice is reconstituted from frozen concentrated grapefruit juice

Source: ultimatecitrus, answers.com

2. Demand



- Overall global demand for fresh grapefruit
- Demand in producing and importing countries
- Driver for increased fresh grapefruit consumption
 - GDP per capita
 - Health concerns
 - Cultural preferences
 - Grapefruit quality
- EU market
- Overview for processed grapefruit

2. Demand

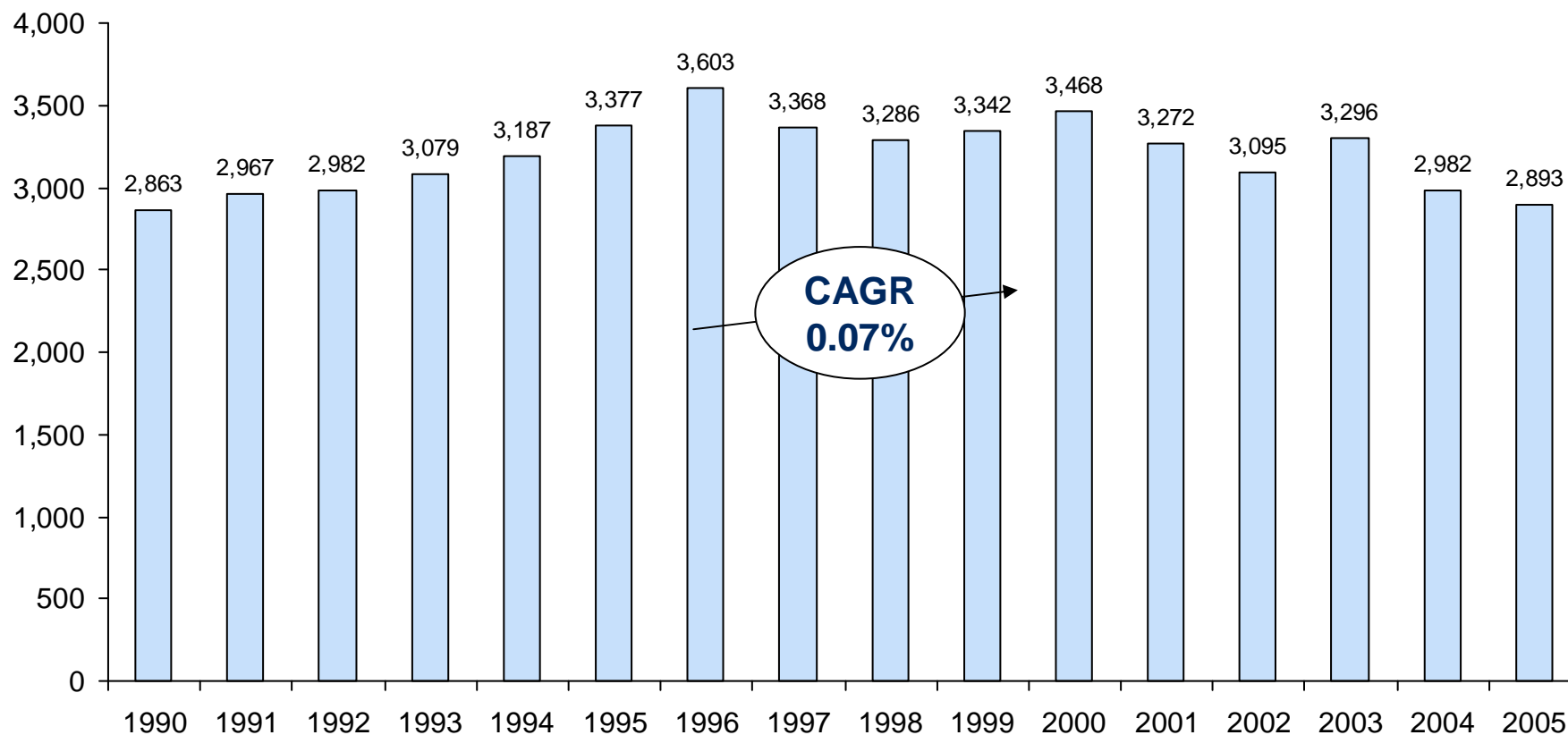


- Demand for fresh grapefruit globally and in key markets
- Some drivers of increased fresh grapefruit consumption
- Overview of processed grapefruit

Growth in world fresh grapefruit consumption has slowed with consumption increasing very slightly from 2.863 million MT in 1990 to 2.893 million MT in 2005, a CAGR of only 0.07 percent

Total annual consumption of fresh grapefruit 1990-2005

In 1000 Tons

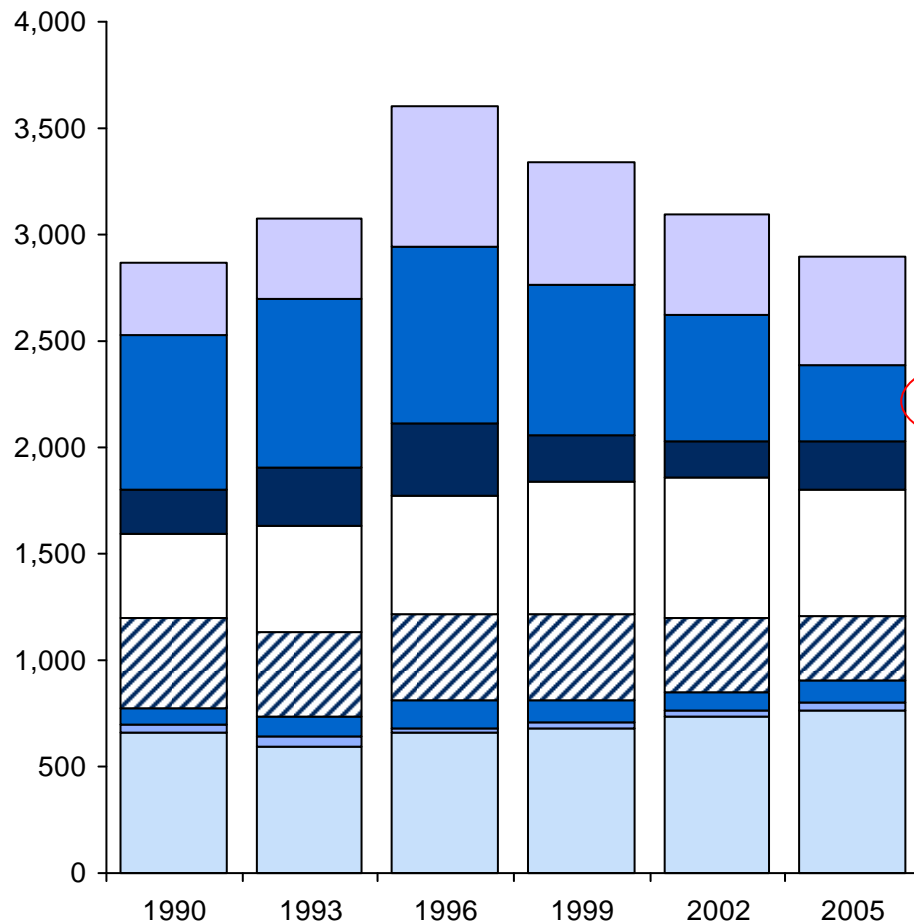


Source: FAO - USDA

Global consumption is dominated by producing regions such as Northern America, the Caribbean and Asia, and growth has been fastest in Eastern Asia and Central America

Total global consumption in different regions

In 1000 Tons



	Share in 2005	CAGR 1990 - 2005
Central America	17.3	2.8
Northern America	12.3	- 4.6
Southern America	7.8	0.6
Eastern Asia	20.6	2.7
EU - 15	10.3	- 2.3
Western Asia	3.6	2.2
Southern Africa	1.4	1.8
Other	26.3	0.9

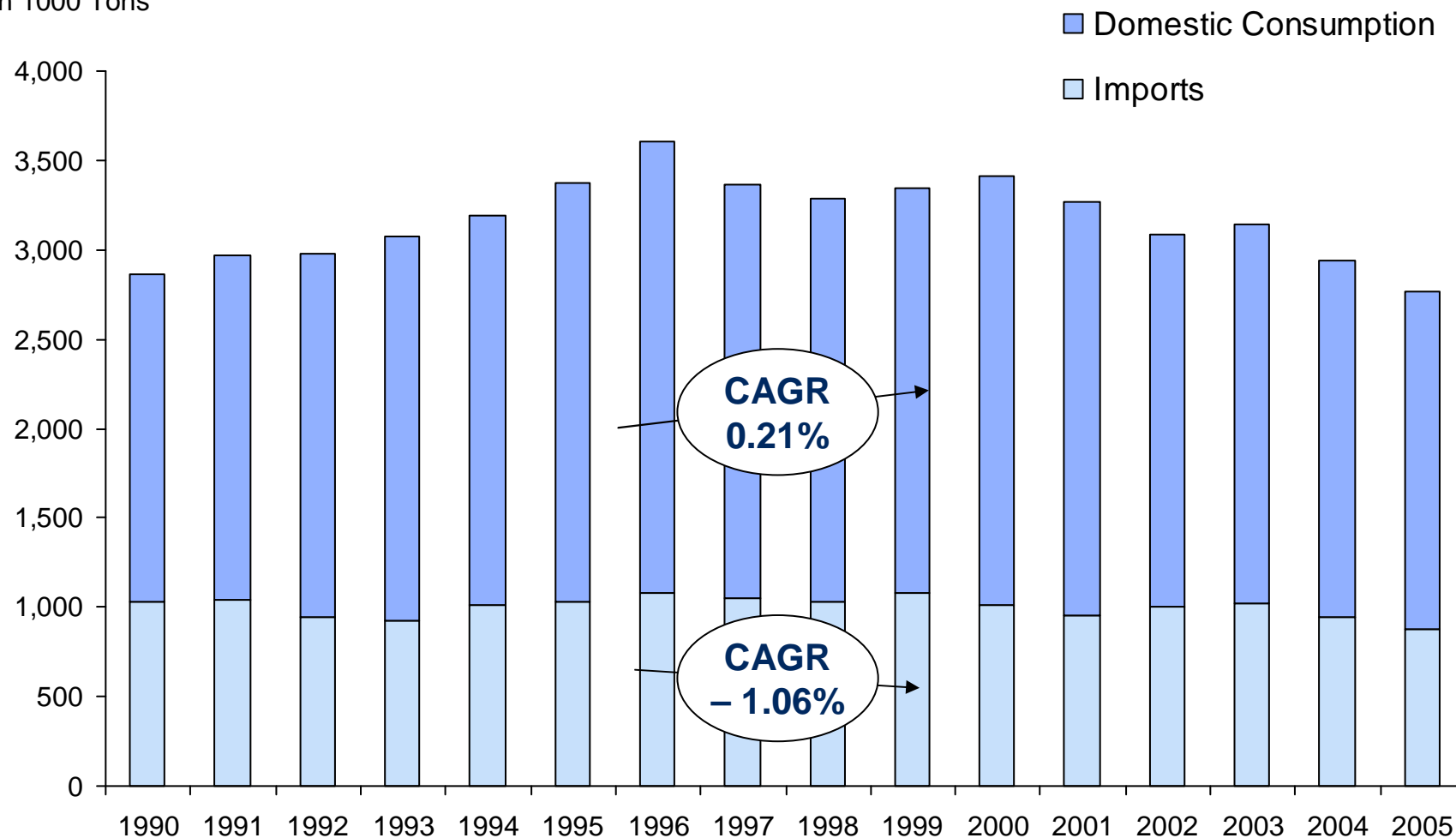
Source: FAO - USDA



Domestic consumption in producing countries has fluctuated on a slightly rising trend, while it has been more stable but declining in importing countries

Total consumption divided into domestic consumption and imports over time

In 1000 Tons

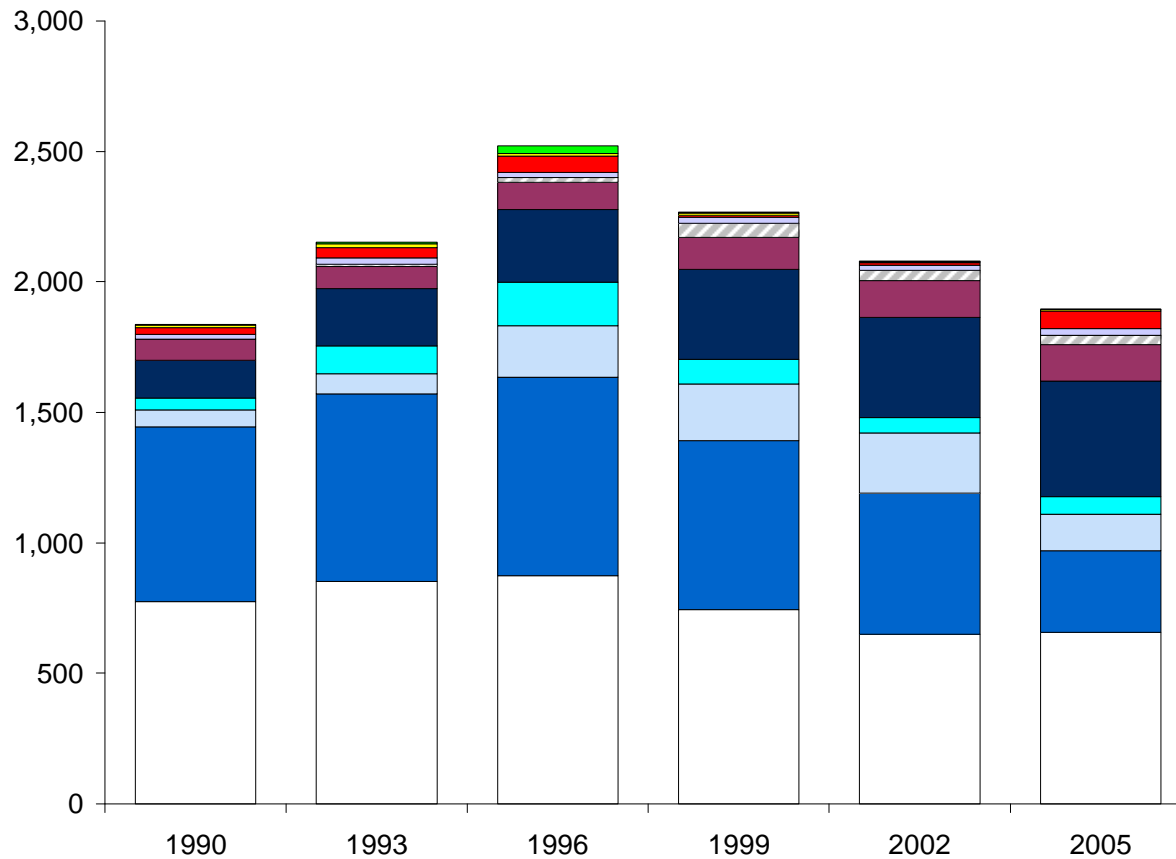


Source: FAO - USDA

While the USA still accounts for around 16.5% of consumption, the increase in consumption in producing countries is mainly driven by China which now accounts for 23% of consumption – a CAGR of 7.6% since 1990

Domestic consumption by producing countries

In 1000 Tons



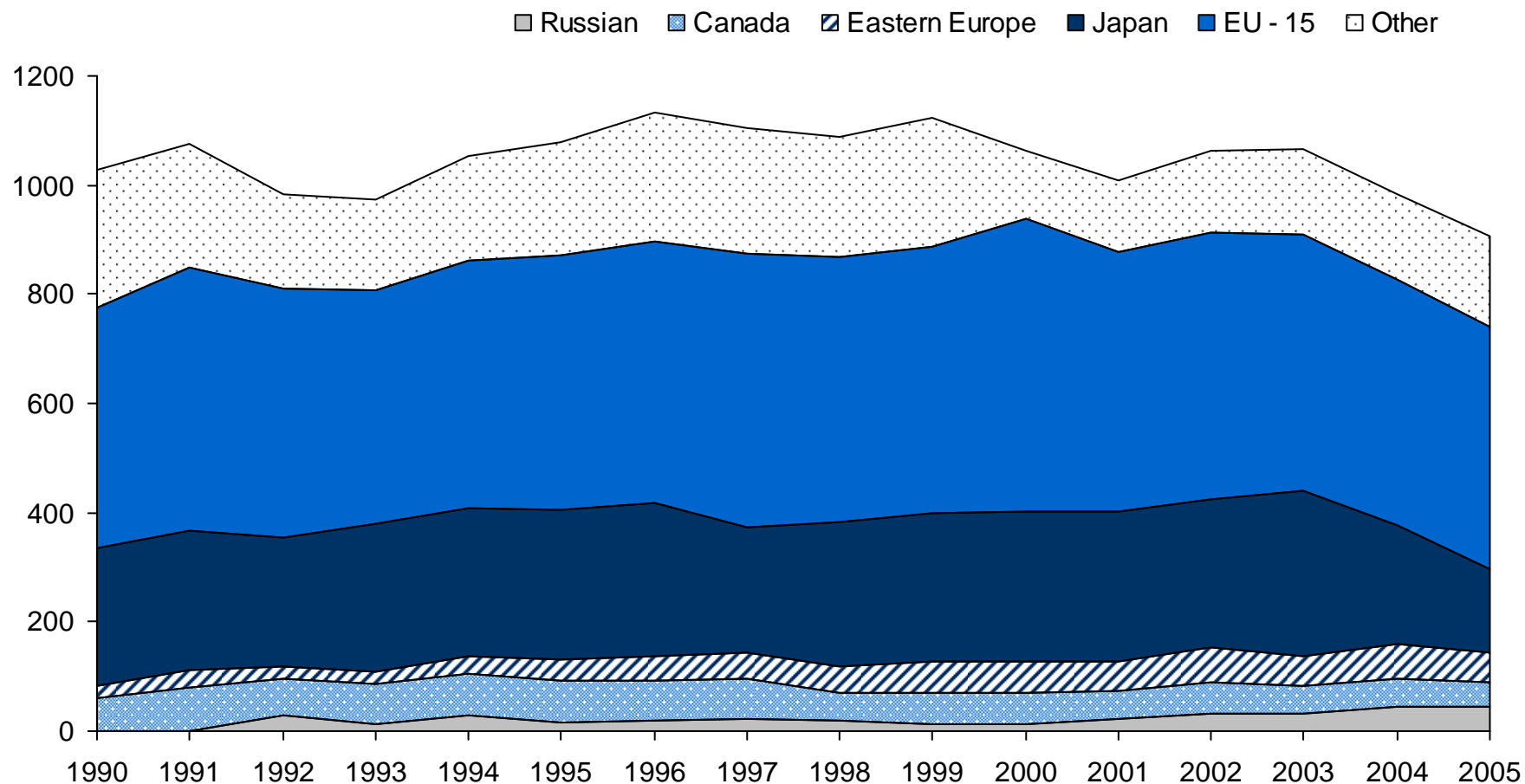
	2005 Share	Annual Growth '90-05
Cyprus	0.06%	-4.2%
South Africa	0.33%	-1.9%
Brazil	3.6%	6.5%
Israel	1.32%	1.4%
Turkey	1.85%	14.6%
India	7.44%	3.85%
China	23.29%	7.6%
Argentina	3.55%	2.8%
Mexico	7.45%	5.1%
USA	16.46%	-4.9%
Other	34.66%	-1.0%
Total	100%	0.2%

Source: FAO - USDA

The gradual decline in consumption by importing countries has been mainly due to stagnation in the EU-15 and Japan

Consumption by main importing countries

In 1000 Tons

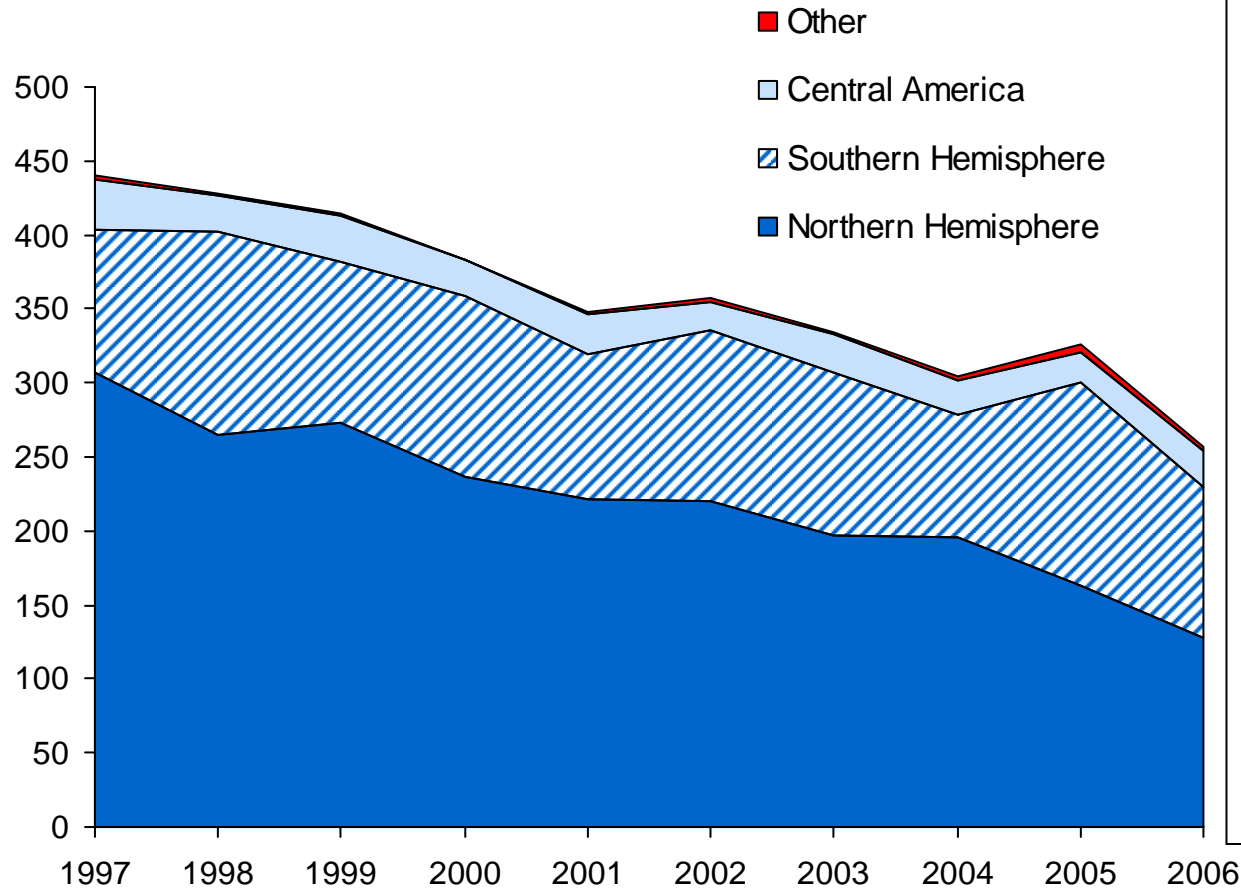


Source: FAO - USDA

While the EU-15 remains a major importing region of fresh grapefruit, its imports have declined by a quarter over the last 10 years or so

EU – 15 fresh grapefruit imports by region of origin

In 1000 Tons



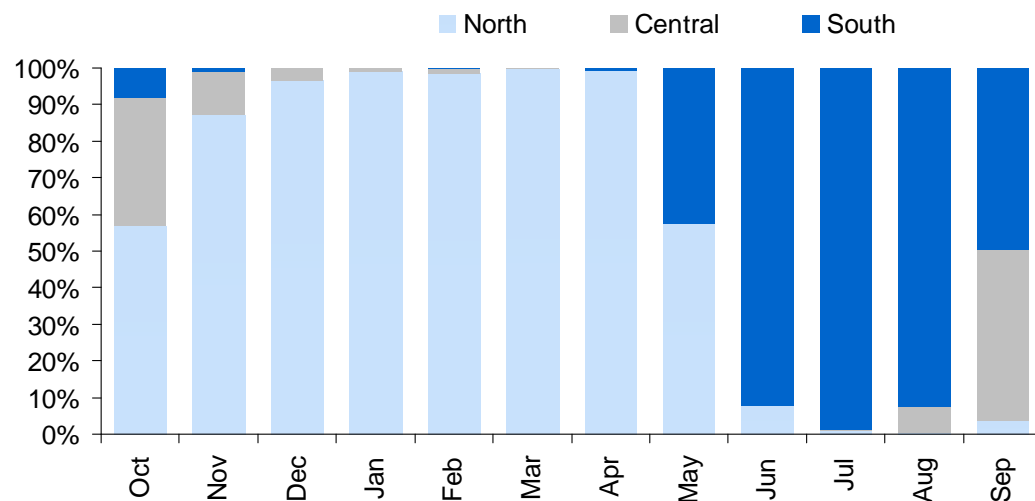
Fresh grapefruit imported into the EU-15 have decreased by 26% over the nine-year period from 1997 – 2005

- About 62% of the imports came from the Northern Hemisphere countries, 31% from the Southern Hemisphere countries, and 7% from the Central American countries.
- Imports from the countries in the Northern Hemisphere have decreased 47% from 1997 to 2005. Imports from Central American countries also decreased during the same period, a decrease of 38%. Imports from countries in the Southern Hemisphere stay around a little over 110,000 MT per year.

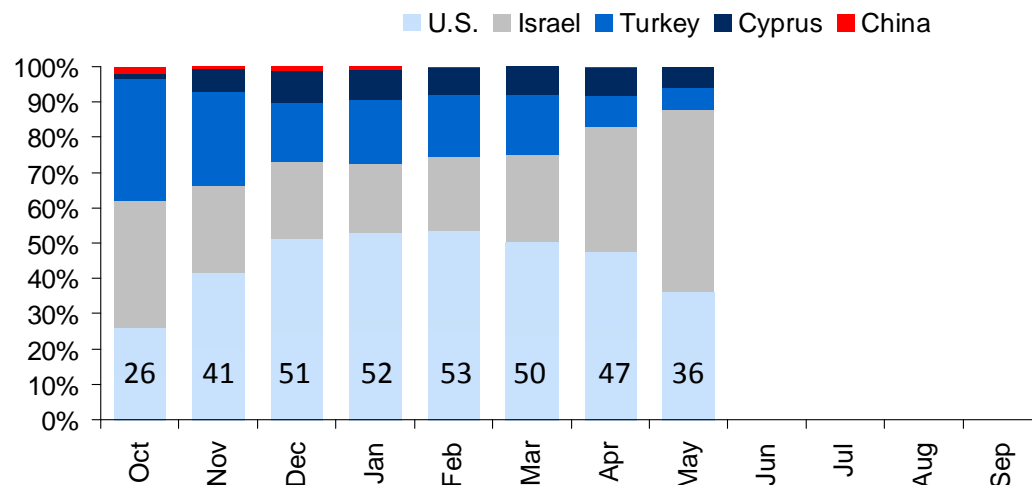
Source: Eurostat

The EU imports grapefruit throughout the year, but origin depends on season

EU average fresh grapefruit imports by month: 1997-2006 (MT)



Fresh grapefruit imports from Northern hemisphere countries, 1997-2006



■ The EU-15 countries import fresh grapefruit all year around

- Between **October** and the following **May** almost all imports to the EU came from Northern Hemisphere countries
- Between **June** and **September** more than 90% of the imports came from Southern Hemisphere countries
- Imports from Central American countries filled the gap in **September** and **October**

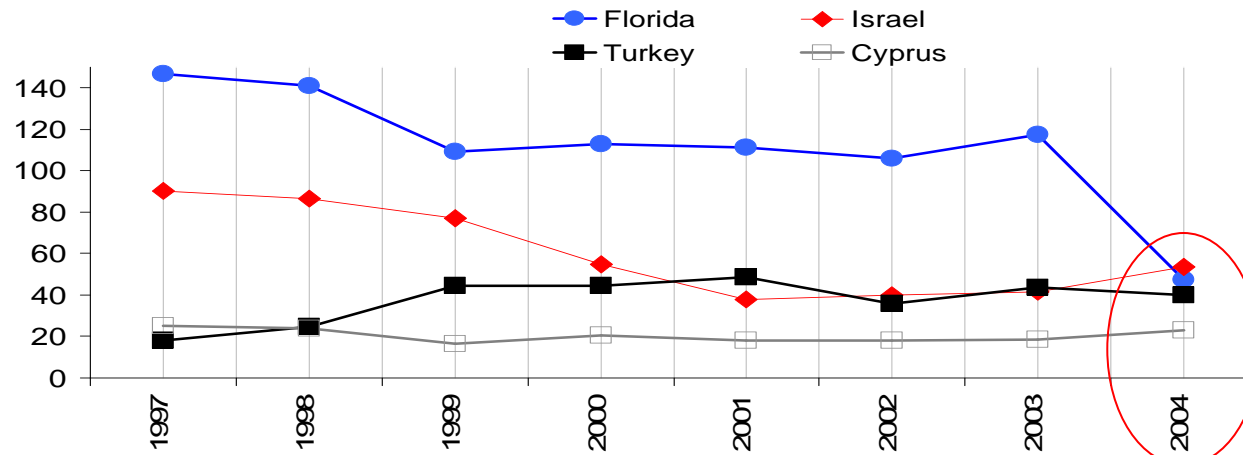
■ The US has been a major supplier of fresh grapefruit for the EU-15, especially **during winter months**

- The peak season for US fresh grapefruit imports is between November and April
- The US peak season coincides with the peak season of several major fresh grapefruit exporting countries in the Northern Hemisphere – Turkey, Israel and Cyprus

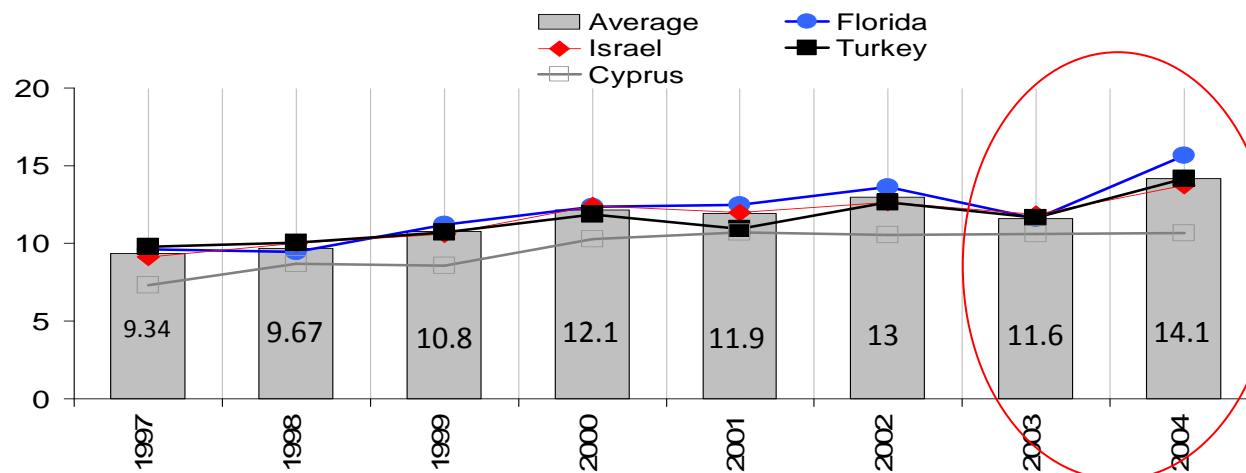
Source: Eurostat

Grapefruit imported to the EU from Florida is considered high quality with unique organoleptic differences and thus no close substitute

Grapefruit - Estimated market releases in the EU by origin



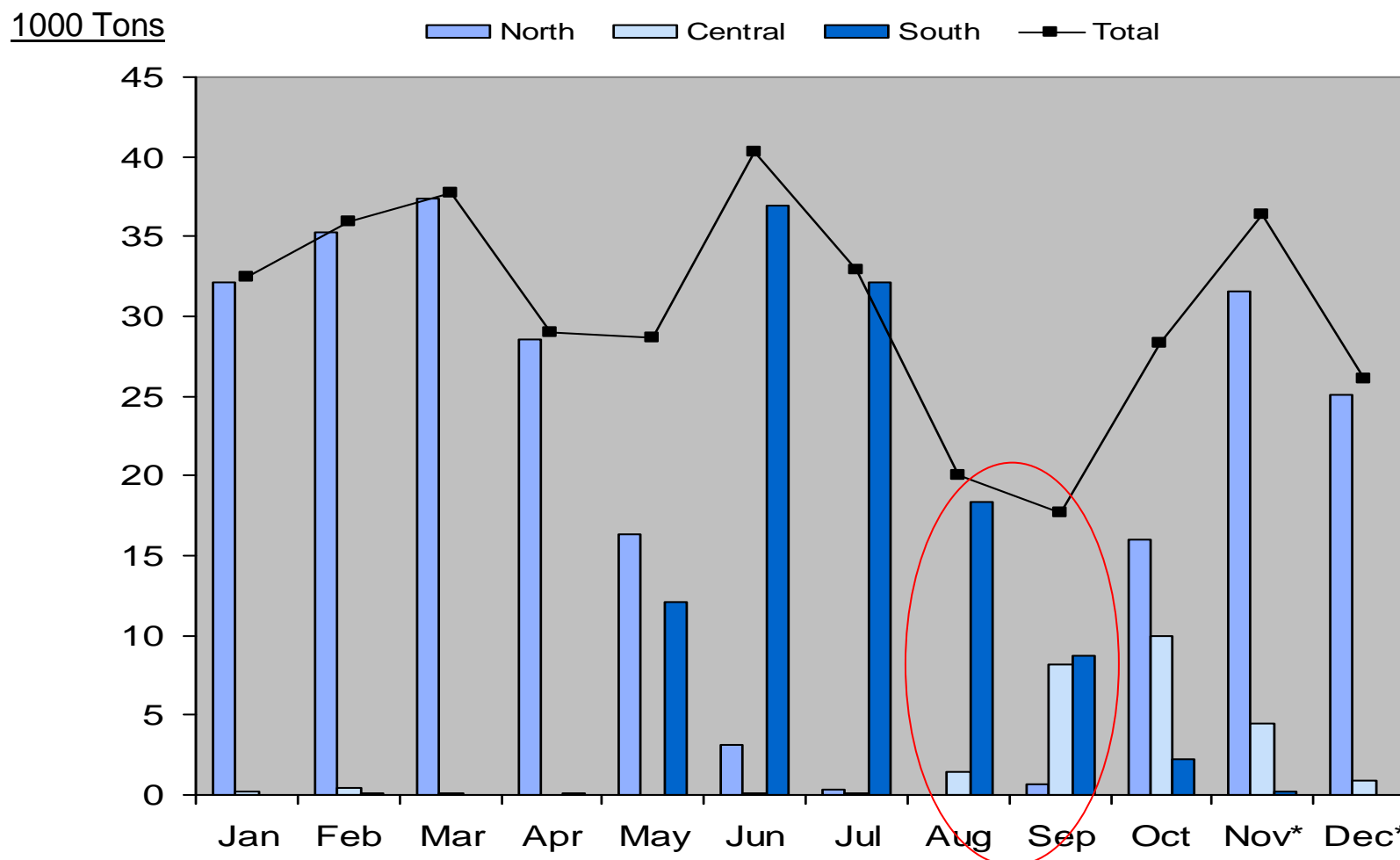
Average import price per carton (€/42.5 lbs)



Import prices for fresh grapefruit from the US are typically slightly higher than for grapefruit imported from other Northern Hemisphere countries

The import of grapefruit into the EU market appears to decline in August and September, perhaps due to the limited availability of Florida grapefruit

Average fresh grapefruit imports by month -- 1997-2006

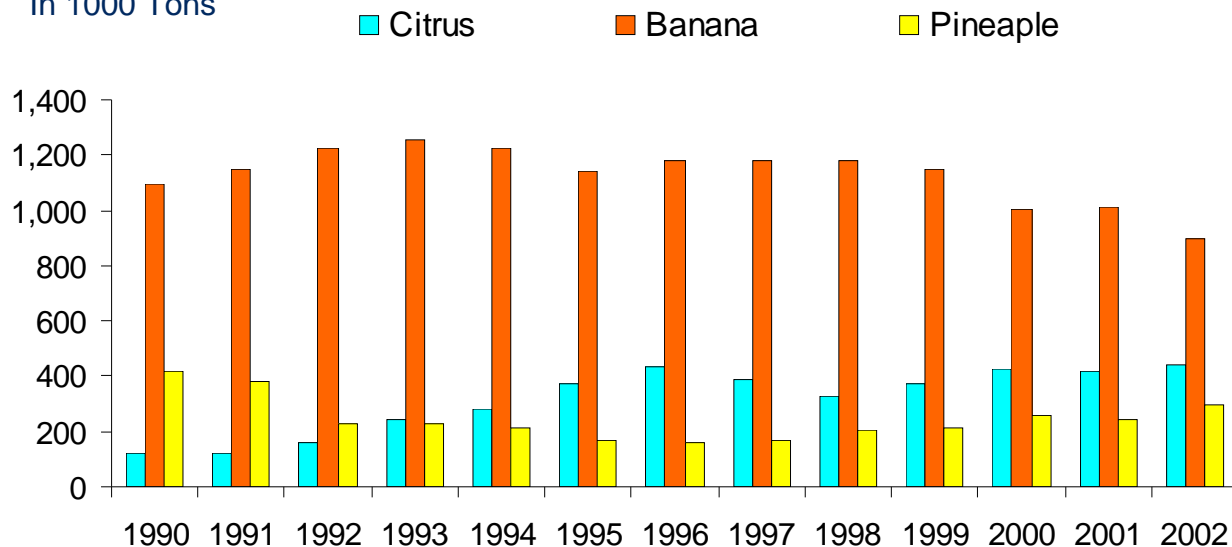


Source: Eurostat

Consumption of citrus and other fruits in Vietnam increased in the early part of the 1990s, but since then growth has slowed

Total annual consumption of selected fruits in Vietnam

In 1000 Tons



Average consumption per capita of selected fruits in Vietnam and its major cities

kg/person

	Hanoi and HCM city				Average			
	'93	'98	'02	'04	'93	'98	'02	'04
Banana	7.4	9.7	9.6	8.5	6.5	8.1	7.1	7.5
Citrus	1.2	3.6	3.9	4.1	0.6	1.5	1.5	1.8
Mango	0.4	2.0	2.2	2.5	0.7	0.9	1.2	1.8

Source: Fruit demand, GTZ, VLSS/VHLSS

2. Demand



- Demand for fresh grapefruit globally and in key markets

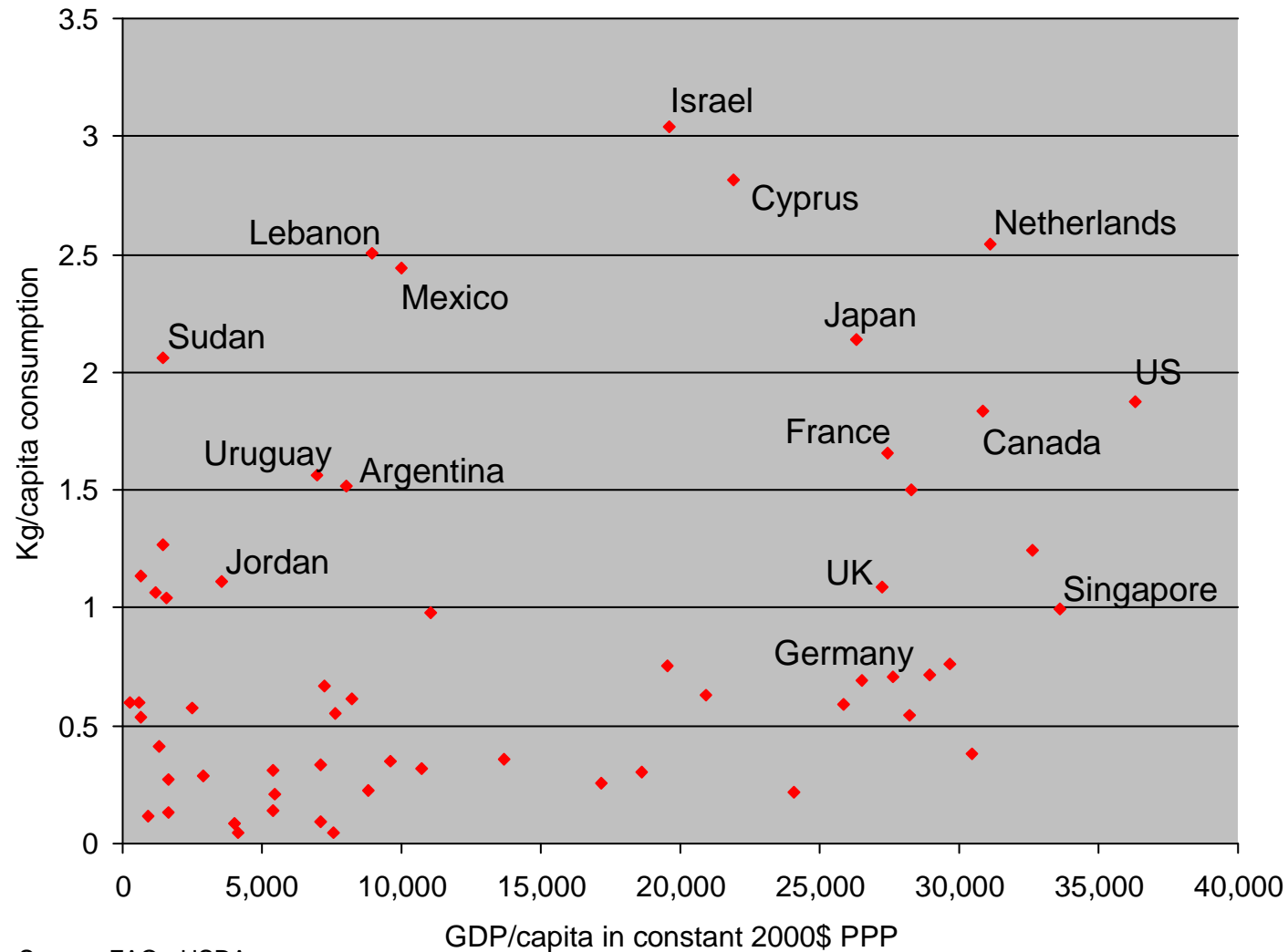
- Some drivers of increased fresh grapefruit consumption

- GDP
- Availability
- Price

- Overview of processed grapefruit

GDP: There appears to be no strong relationship between income levels (GDP per capita) and fresh grapefruit consumption

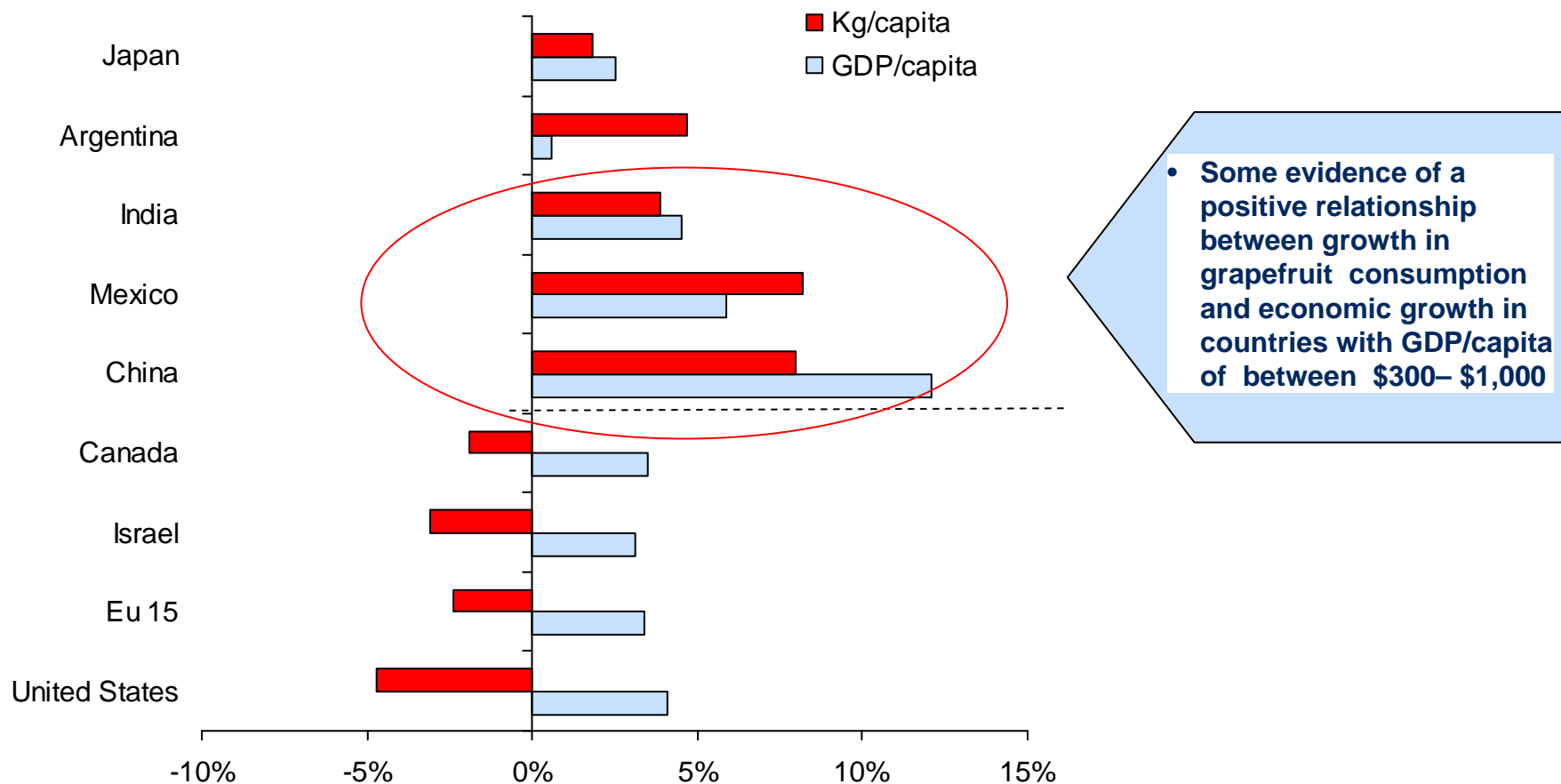
Fresh grapefruit consumption relative to GDP per capita (2004)



Source: FAO - USDA

GDP: However, for some developing countries per capita grapefruit consumption has increased as GDP per capita has increased

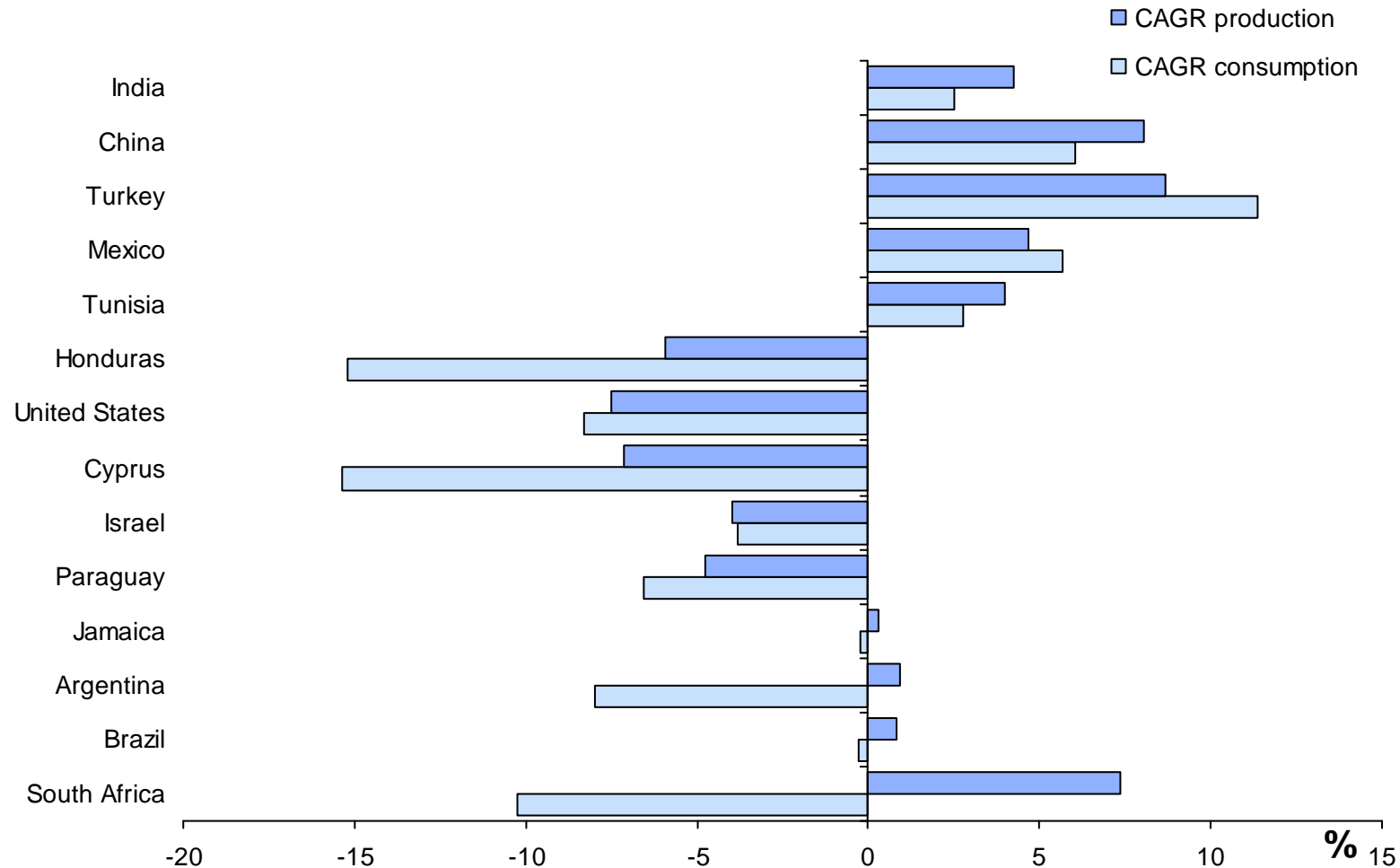
GDP growth and grapefruit kg/capita growth 1990 -2005 for selected countries



Source: FAO, WDI World Bank

Availability: Similarly there appears to be a relationship between the trend in the availability of product in producing countries and their consumption, although this issue needs further analysis

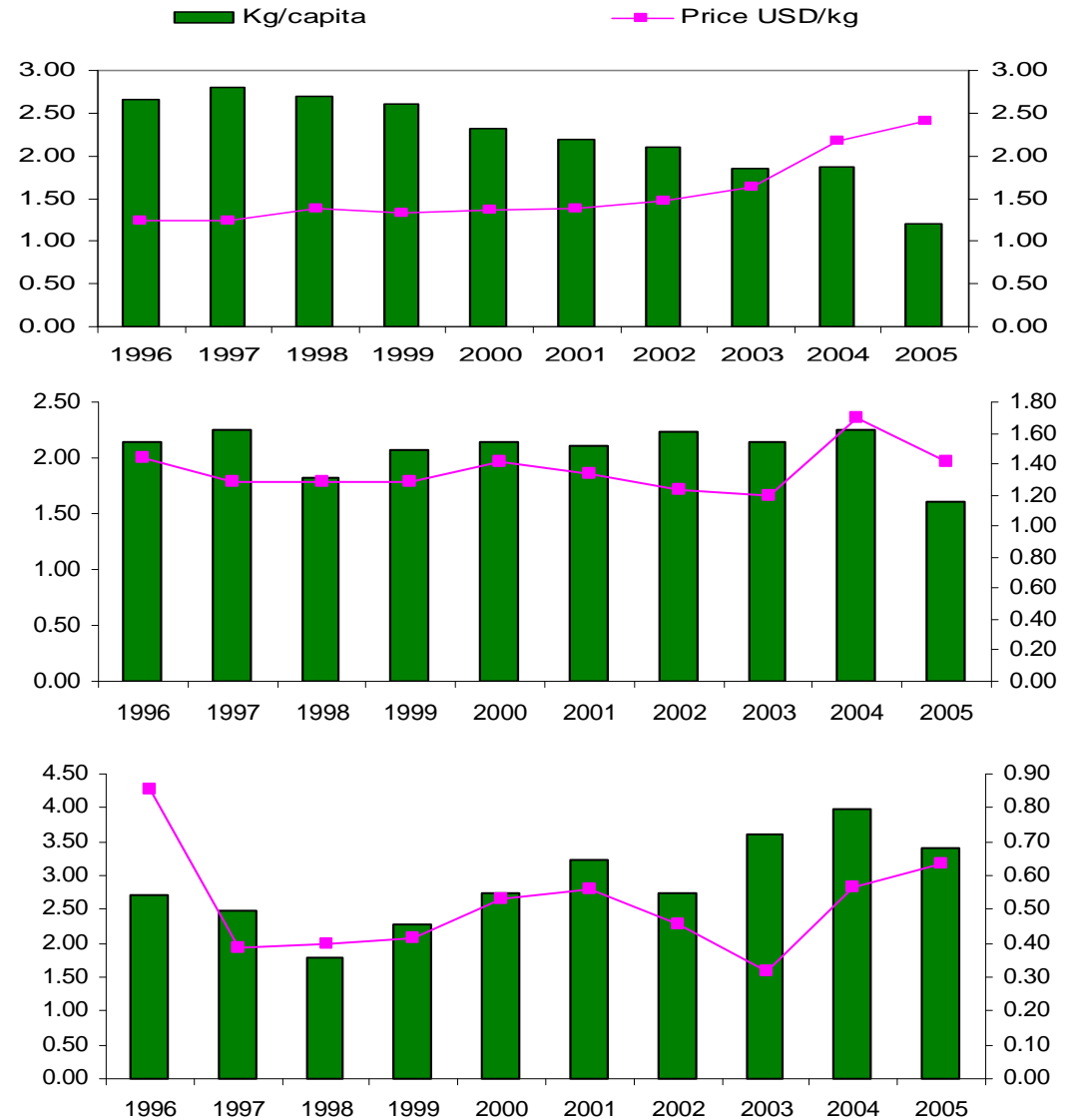
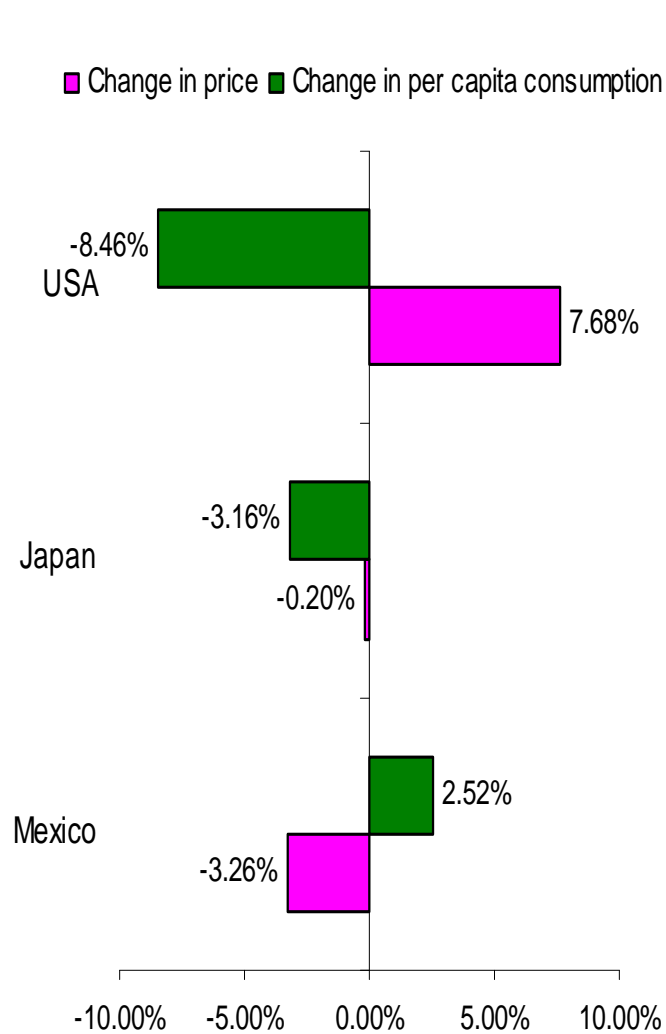
Growth rate of production and consumption in producing countries 1990 - 2005



Source: FAO – USDA

Note: South Africa is an export-oriented grapefruit producer

Price: For some key consumption countries there appears to be an inverse relationship between price and demand although the true causality is unclear



Source: FAOSTAT

2. Demand

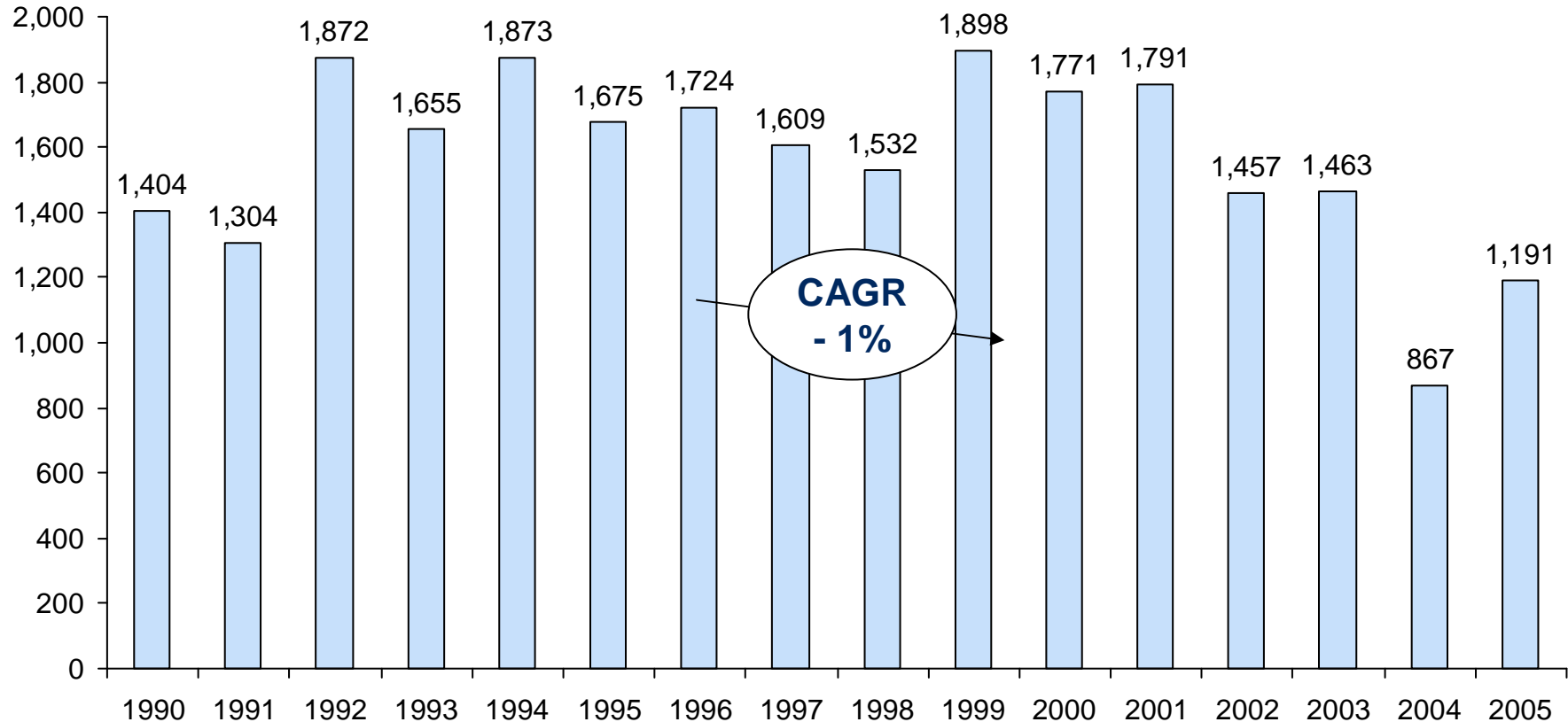


- Demand for fresh grapefruit globally and in key markets
- Some drivers of increased fresh grapefruit consumption
- Overview of processed grapefruit

The global use of grapefruit for processing has fluctuated, but there has been a downward trend of some 1% since 1990

Total annual grapefruit utilization for processing 1990-2005

In 1000 Tons

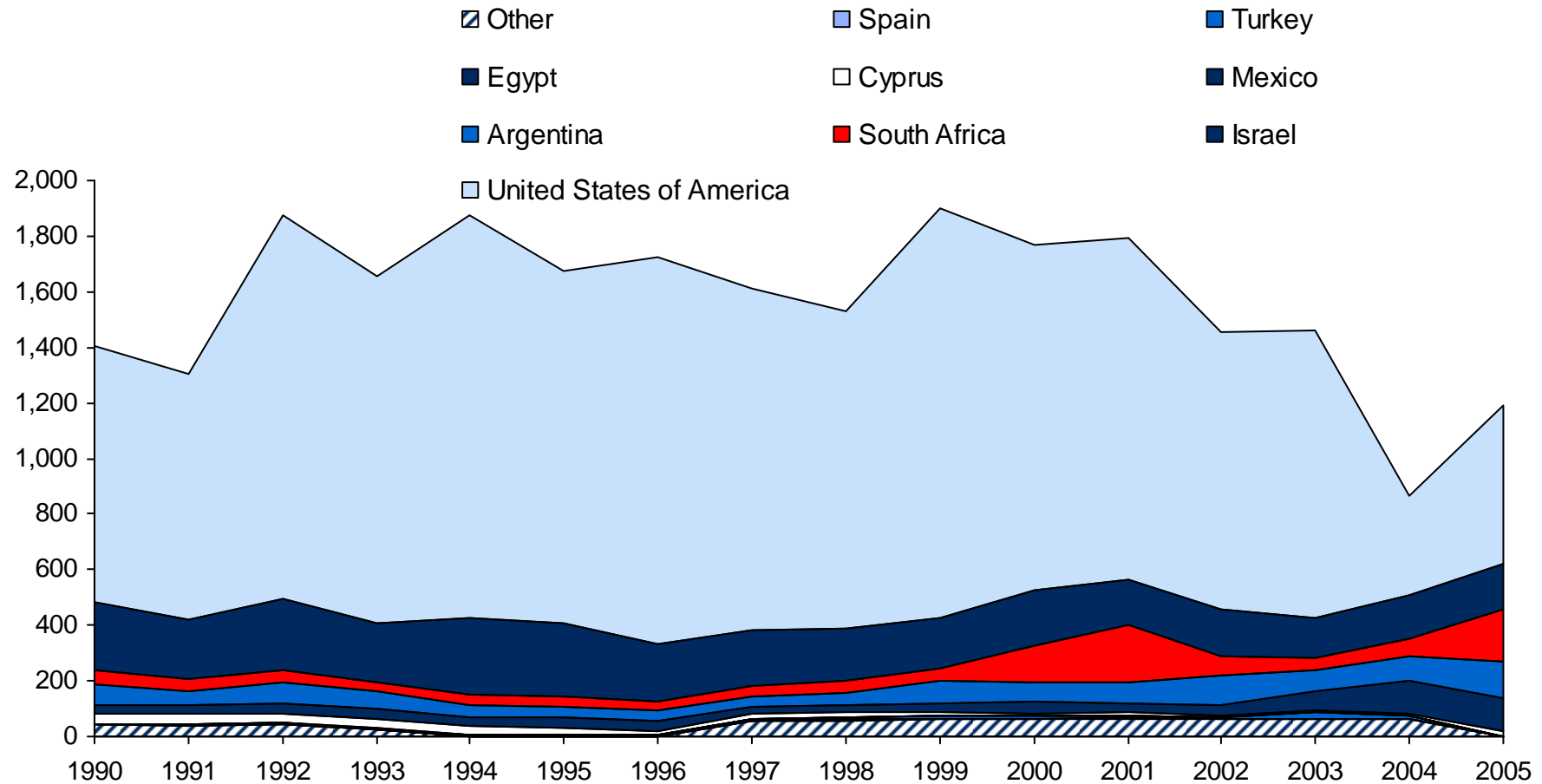


Source: FAO - USDA

The use of grapefruit for processing is mainly driven by the US which accounted for as much as 70% of the total volume in 2003

Grapefruit utilization for processing in top 10 countries 1990-2005

In 1000 Tons

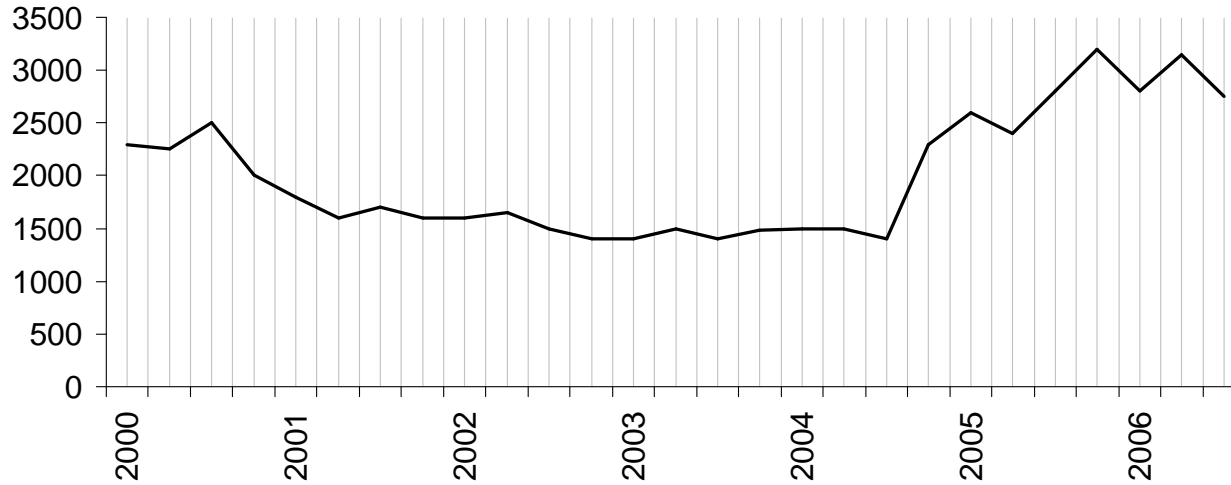


Source: FAO - USDA

The market for the key processed product of grapefruit juice is sensitive to variations in supply

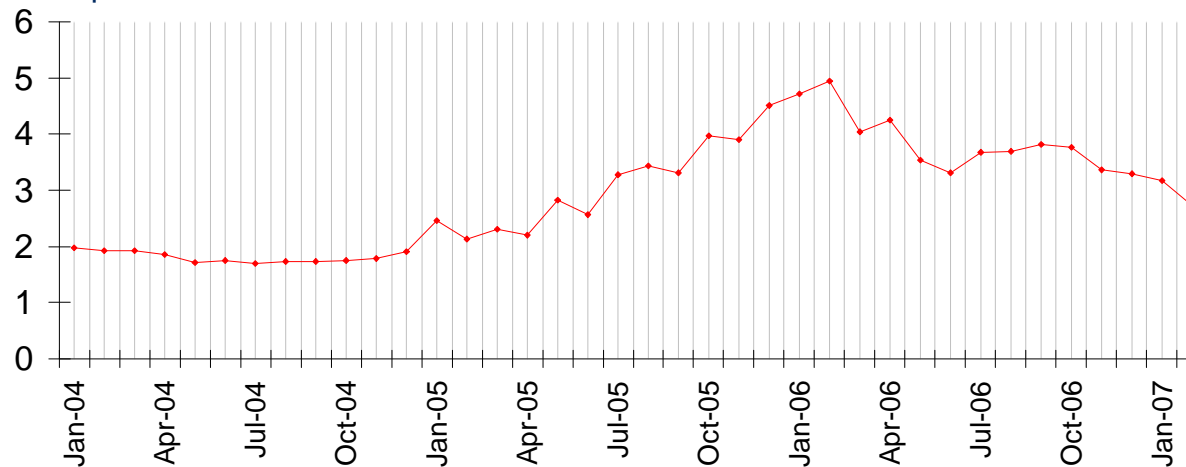
White grapefruit price at EU import stage

In US \$ per tons



Market pricing trend in US market

In US \$ per liter



- The market is very sensitive to any variation in production zones supplying the international market
- For example, the world price of concentrated grapefruit juice fell from the end of 2000 onwards and remained at just over 1000 USD per ton at EU import stage. However, it then **tripled** from the end of September 2004 when three major hurricanes swept Florida and Cuba, the two most important production zones

Source: USDA - Foodnews, juicemarket.com.uk, ITC-MNS

Chapter 3 – Competitiveness



1. Supply

- International production
- Main exporting countries

2. Supply chain in Vietnam

3. Competitiveness

- Characteristics and performance of Vietnam
- Some comparisons with other countries
- Improving product quality in Vietnam

Chapter 3 – Competitiveness



1. Supply

- International production
- Main exporting countries

2. Supply chain in Vietnam

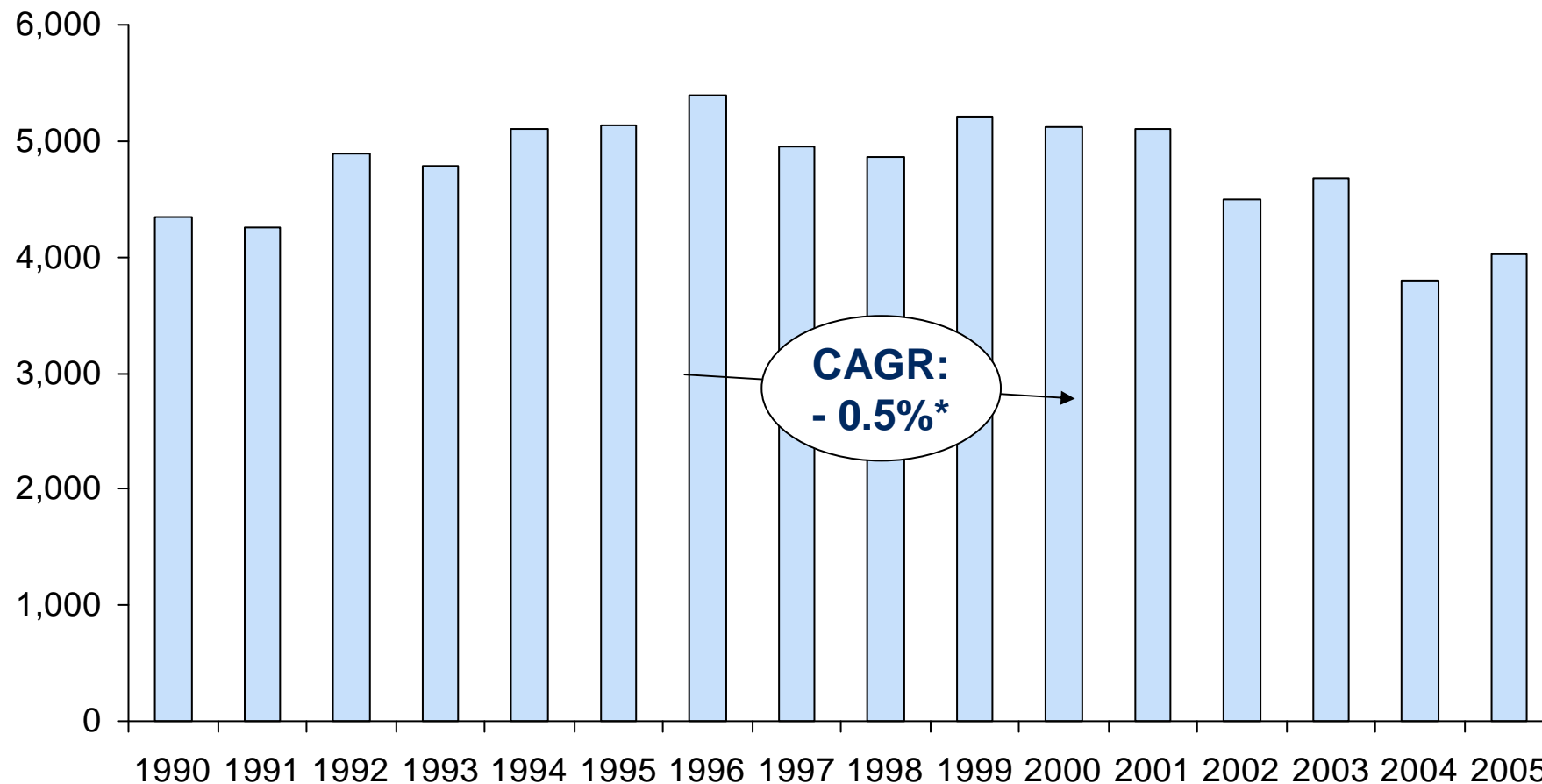
3. Competitiveness

- Characteristics and performance of Vietnam
- Some comparisons with other countries
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World grapefruit production peaked in 1996 at about 5.4 million tonnes and has been on a gradual decline since then

Total production 1990 – 2005

In 1000 Tons

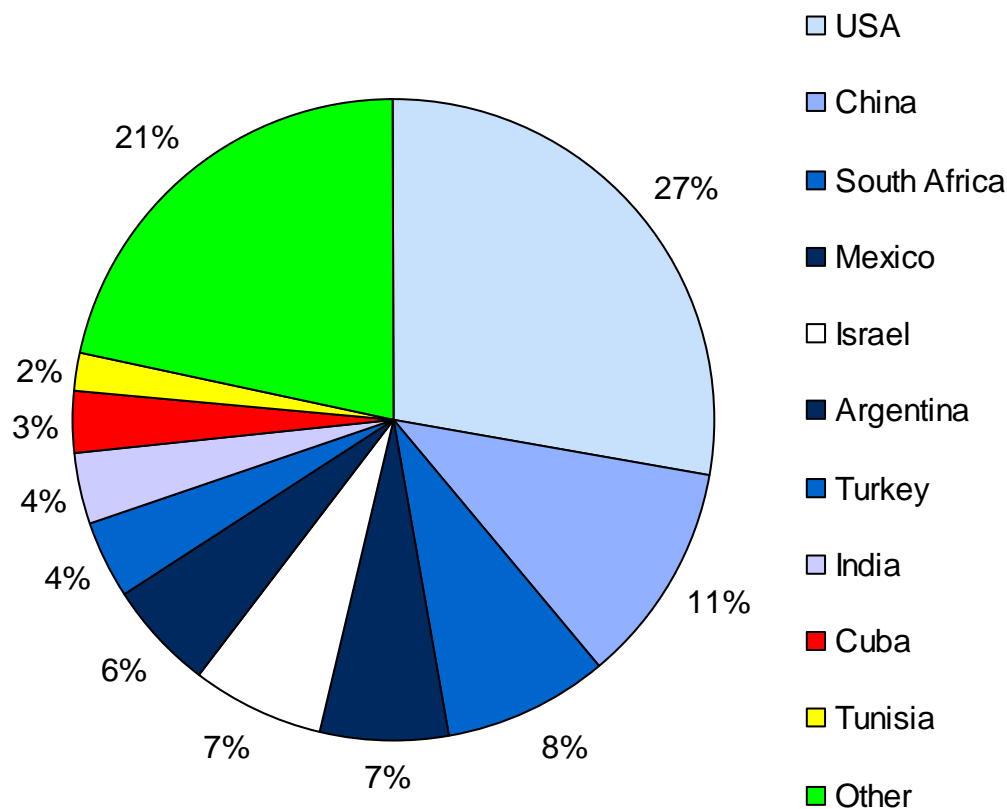


Source: FAO - USDA

World production is dominated by a few countries with the top 10 countries accounting for around 80% of total global production

Grapefruit Production of the Top 10 Countries (2005)

In %

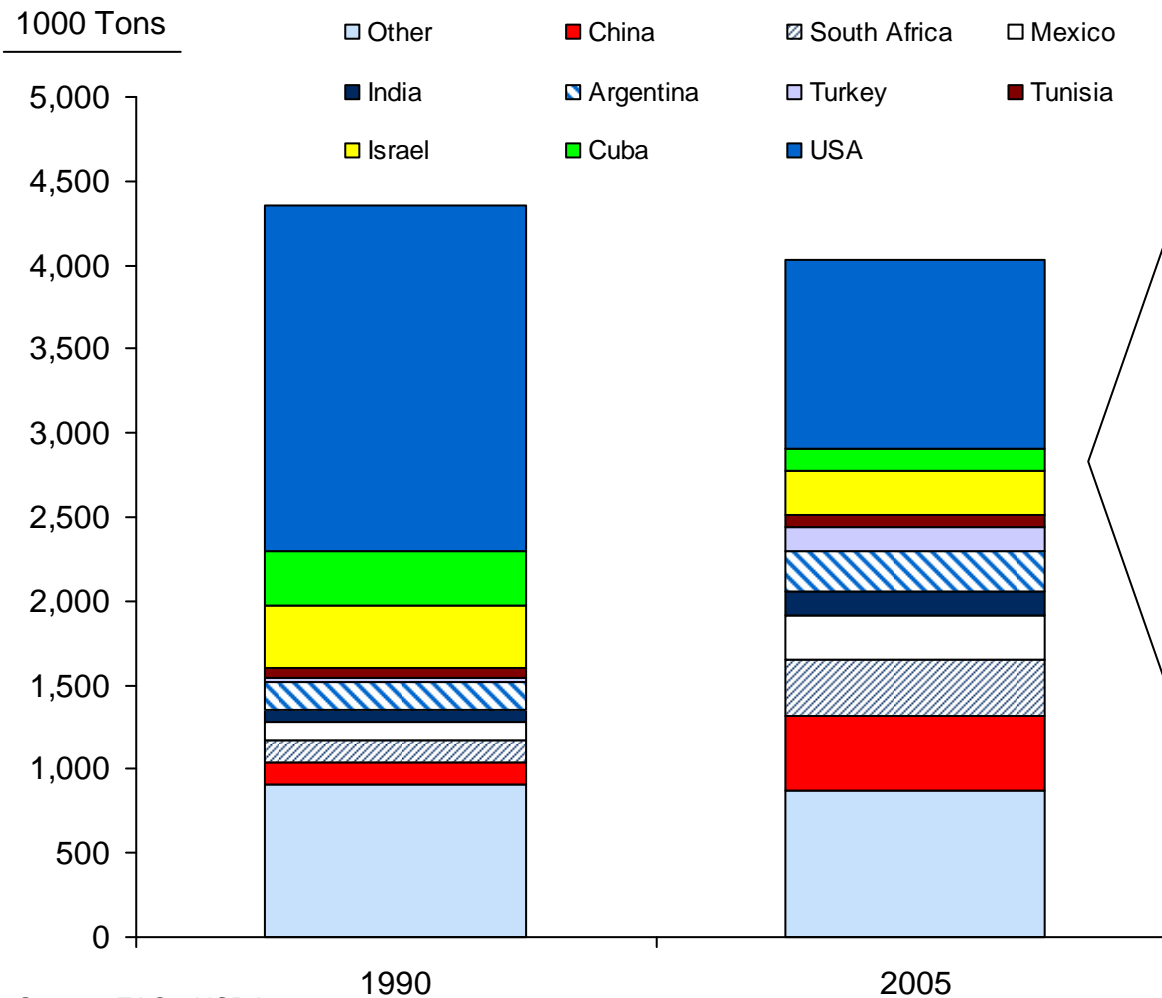


- **USA:** is the leading grapefruit producer. This is the result of favourable soil and climate conditions for growing high quality tropical grapefruit as well as strong structuring of the sector with some of the most severe self-imposed quality criteria in the world
- **China:** China is the world's leading producer of pomelo, but does not grow grapefruit because endemic sanitary problems
- **South Africa:** the grapefruit industry is resolutely export-oriented, focusing in particular on the EU and Japan, and dominates world trade during the summer.

Source: FAO - USDA

The decrease in world production has been driven mainly by the reduced production of the USA, and in fact Chinese pomelo production has increased

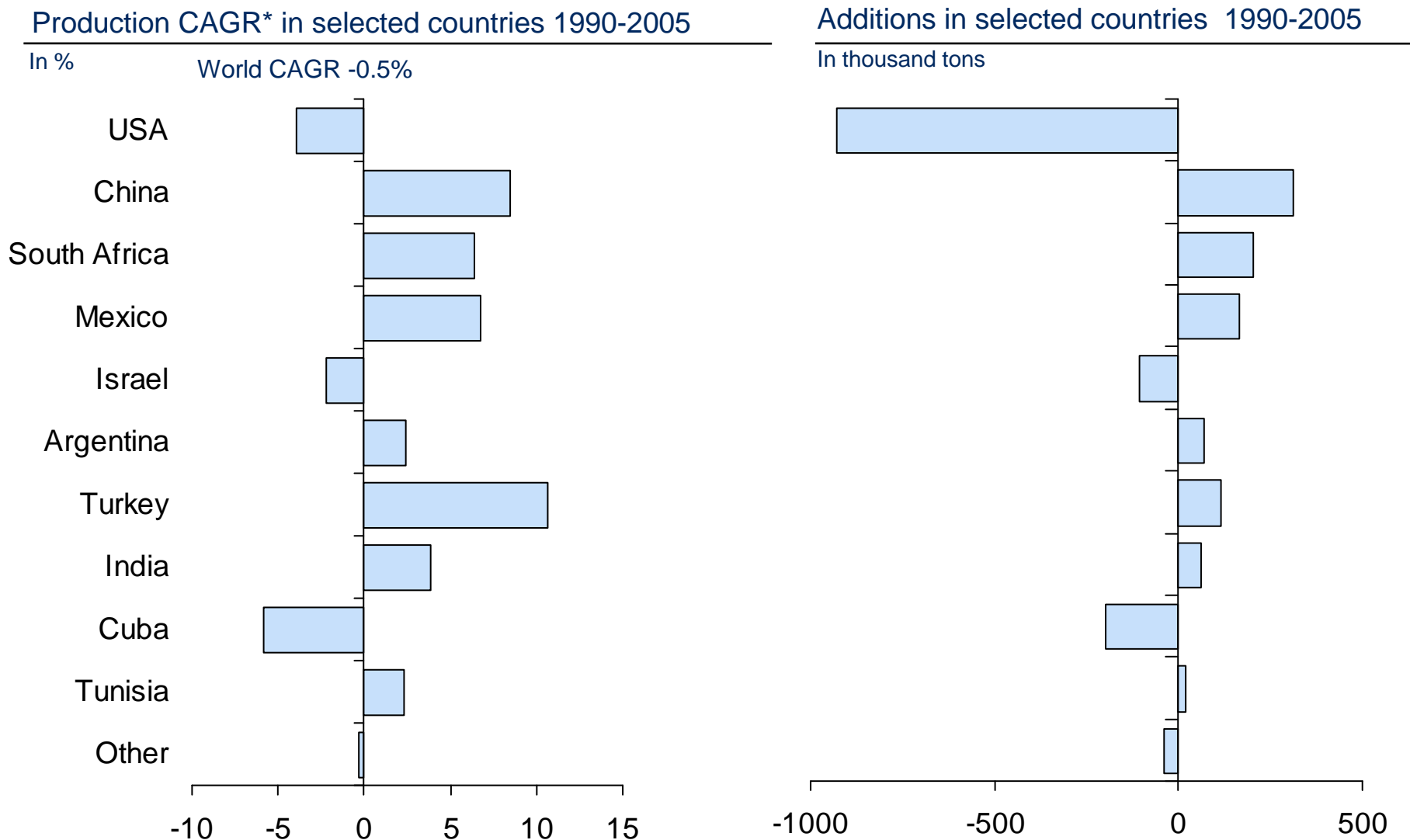
Production of grapefruit in selected countries



- The decline in **US** production of grapefruit is due to a combination of factors impacting the Florida citrus industry. These include: relatively new diseases (citrus canker and citrus greening), frequent hurricanes, and a sharp increases in land values
- With government aid, **China** has grouped small production units and provides technical support in the form of supply of inputs, and crop management sequences. Regional and national plans have encouraged the increase in the area under citrus cultivation and the use of agricultural practices that improve quality and yields

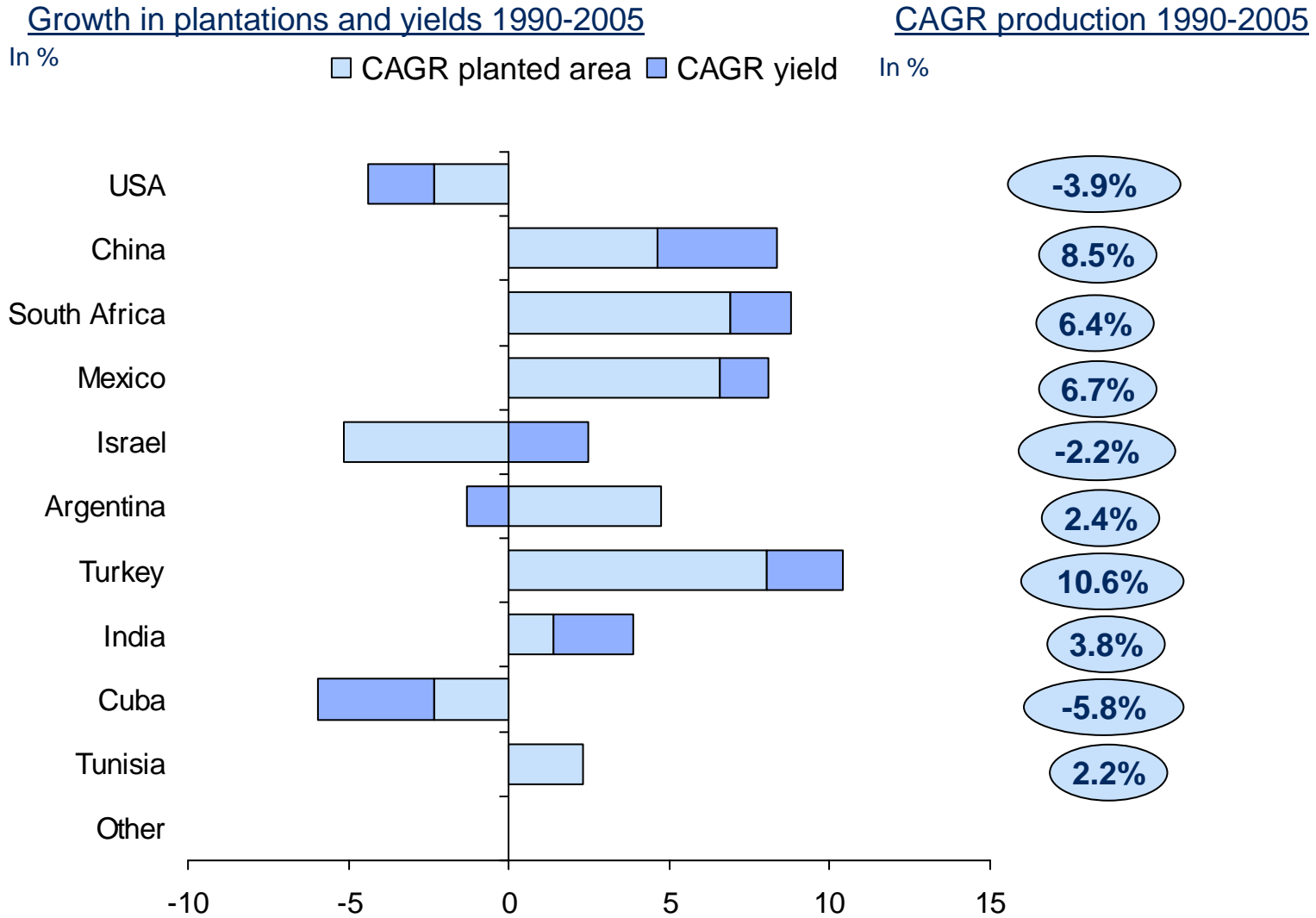
Source: FAO - USDA

While the USA was reducing its production, other major producers such as South Africa, China and Mexico were increasing theirs



Source: FAO, USDA

The growth in production among producing countries resulted mainly from an increase in the area cultivated, but in the USA both area and yield declined

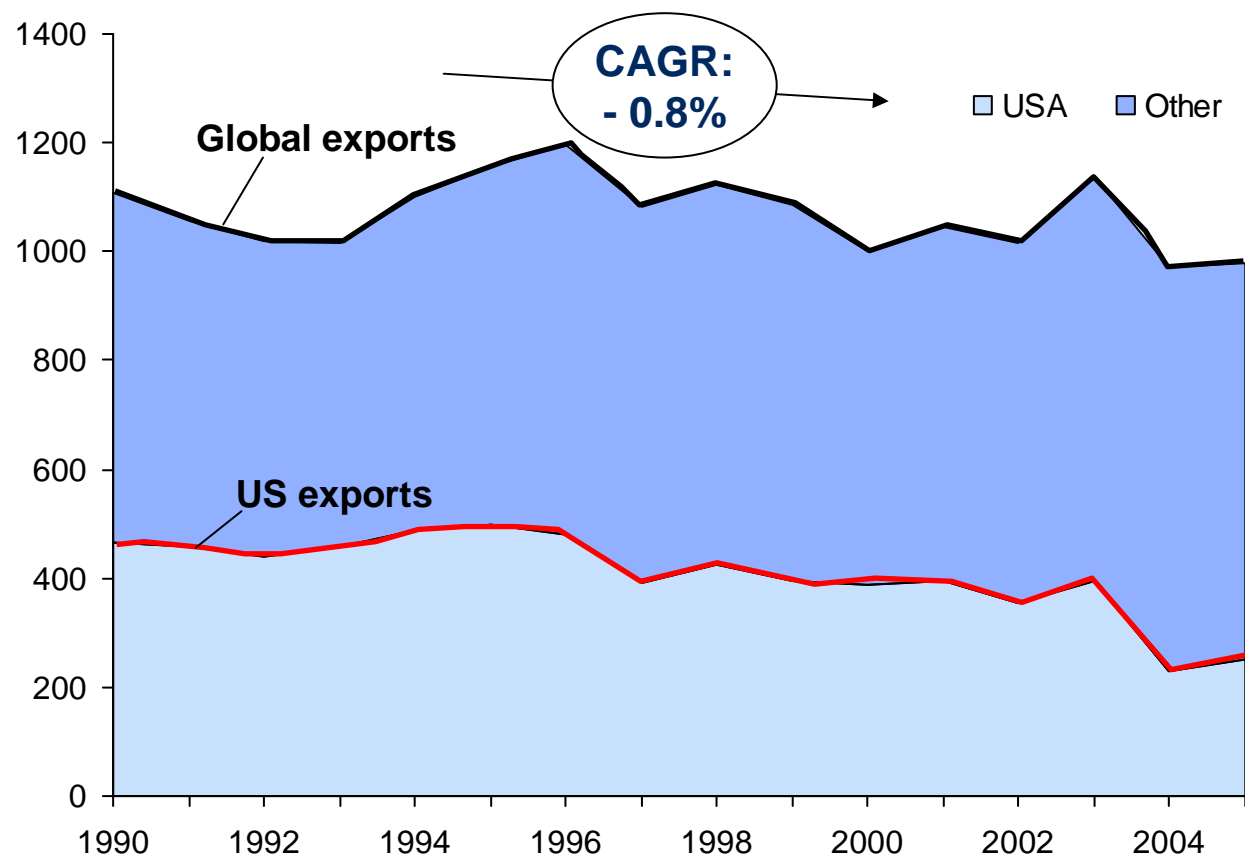


Source: FAO - USDA

Global grapefruit exports were around 1.1 million tons per year from 1990-2005 with a declining trend; like production, they were dominated by the US

Global grapefruit exports 1990-2005

In 1000 Tons



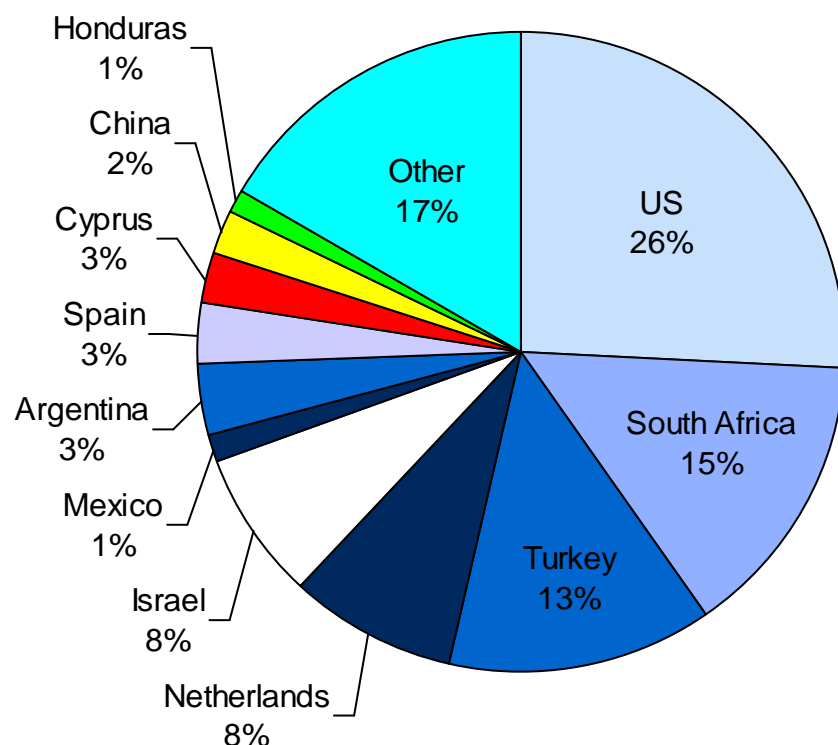
Source: FAO - USDA

Note: A range of reasons has been given for the decline in the US supply and demand including greater competition in the winter season, a change in consumption patterns in favour of fruit that are easier to eat, and allegations of possible harmful interactions between grapefruit juice and certain medical treatments.

In 2005 the US was still the largest exporter of fresh grapefruit, accounting for nearly 26% of total world fresh exports, followed by South Africa and Turkey at around half of the level of the US

Share of main fresh grapefruit export countries in 2005

In %



Some Observations on Export/Import Markets

• USA:

✓ Exports substantially to the Japanese market which is very particular with regard to quality but very profitable. The EU is the second major market

• China:

✓ Exports of pomelo are increasing, but other Asian countries are still the main market and especially Malaysia, Singapore and the Philippines.

✓ Entry to the EU market is recent and was initiated by the French Carrefour group

• **South Africa:** about two thirds of production is exported and almost entirely to the European market

• **Israel:** The EU is the destination for three quarters of the export volumes, with some 15% being shipped to Eastern Europe. The scope for exports to Japan is limited by the high freight costs

• Turkey:

✓ Exports have increased strong and steadily during the past ten years

✓ Eastern Europe is the main market, taking about 60% of the total quantity. It has advantages over the EU as transport is cheaper and firm payments are made, often by on-site representatives of exporters and this provides further security

Source: FAO - USDA

Trading logistics play a major role in determining choice of export destination

Exporter	Market	Main shipping lines		Shipping time
		Port of departure	Port of arrival	
Florida	EU	Charleston, Savannah, Miami	Antwerp, Rotterdam, Le Havre, Felixstowe	10 – 14 days
	Japan	Charleston, Savannah, Miami	Yokohama	23 – 26 days
China	EU	Xiamen	Le Havre	20 – 21 days
			Rotterdam, Antwerp	21 – 33 days
			Barcelona	25 – 30 days
South Africa	EU	Durban	Antwerp, Rotterdam, Vlissinguen Vado, Tarragone, Castellon	16 – 18 days 18 – 22 days
	Japan	Durban	Tokyo, Osaka, Yokohama	19 – 21 days
Israel	EU	Haifa Ashdod	Fos Antwerp, Marseilles	3 - 10 days
	Eastern Europe	Haifa	Novorossiysk, Odessa	4 - 7 days
	Japan	Haifa	Tokyo, Osaka Kobe, Yokohama	33 - 35 days
Mexico	EU	Puerto Progresso	Vlissingen	12 days
		Altamira	Antwerp	14 - 18 days
Turkey	EU	Mersin, Iskenderun	Felixstowe, Sheerness	12 - 14 days
			Antwerp	11 - 15 days
			Rotterdam	12 - 15 days

Source: Fruittrop



Chapter 3 – Competitiveness



1. Supply

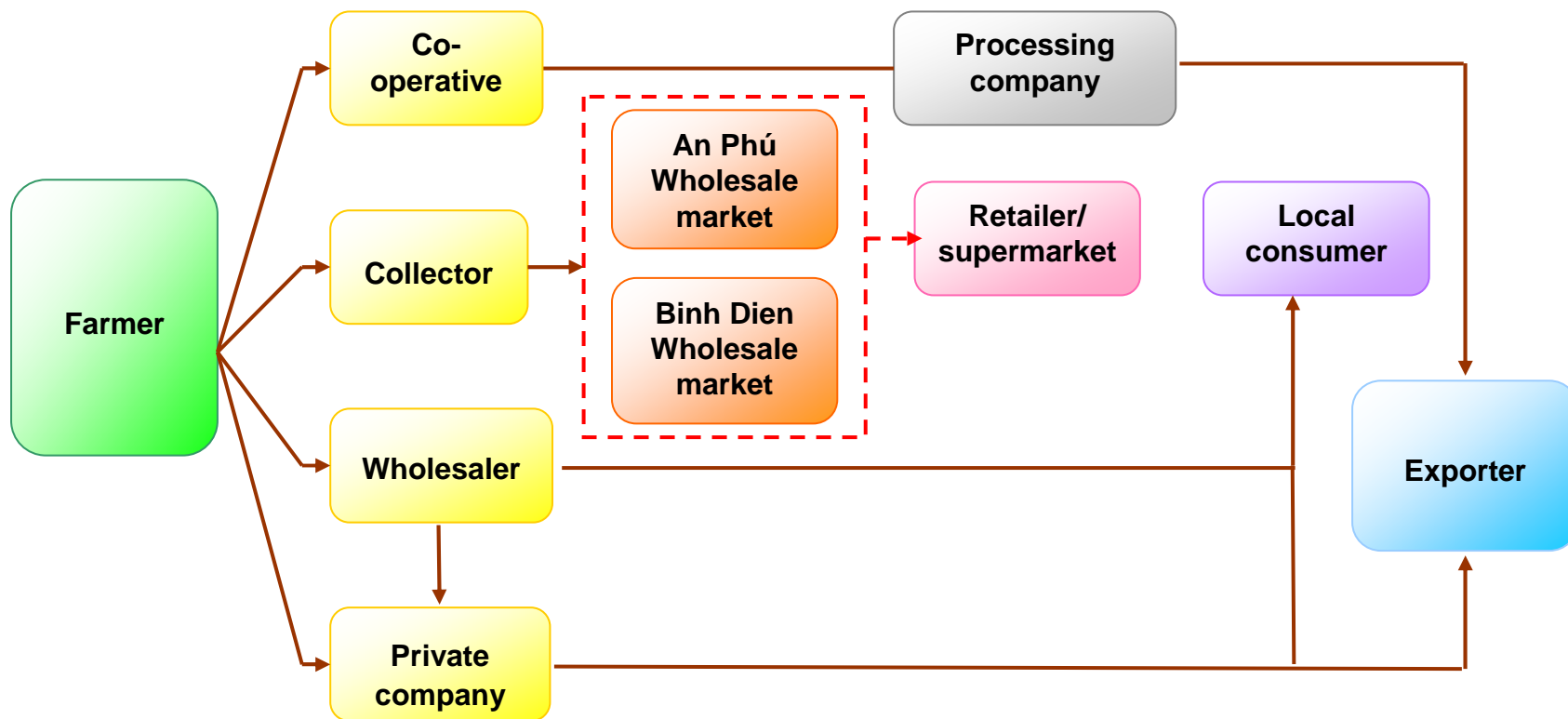
- International production
- Main exporting countries

2. Supply chain in Vietnam

3. Competitiveness

- Characteristics and performance of Vietnam
- Some comparisons with other countries
- Improving product quality in Vietnam

The grapefruit/pomelo supply chain in Vietnam is relatively straightforward



In general after harvesting, the producers sell their grapefruit to the collectors or sell directly to wholesalers or processing facilities. The wholesalers also collect grapefruit from collectors, which they then trade to private processing enterprises or exporters

There are three main methods used in Vietnam for business transactions between farmers and traders of pomelo

Method 1

This method is used by 45% of pomelo-planting households. Before fruits are ripe or when pomelo trees are in flower, farmers reach an agreement to sell all the products in their gardens to traders:

- Normally, traders pay to buying the pomelo from an area and meet the fertilizer cost
- The owner of the pomelo garden have to incur labour cost to take care of the pomelo garden including irrigation, pruning, and weeding with only harvesting done by traders

Method 2

This method of selling pomelos at gardens after harvest is implemented by 50% pomelo planting households:

- The owners of pomelo gardens have to incur all investment cost for their gardens
- In the harvest season, traders go directly to gardens to bargain. If the owners of the pomelo gardens agree, they will pick the pomelos. After picking the pomelos, traders classify and calculate the value of pomelos and pay accordingly.

Method 3

This method of harvesting and bringing pomelos to market is implemented by 5% of pomelo-planting households:

- The owners of pomelo gardens have to incur all the costs of production and harvesting
- This case is only applied by farming households who have labour and means of transportation, know the markets and can use the information..

Depending on the market demand and personal circumstances, farmers will choose the best method of business transaction. However, normally farmers sell their pomelos in bulk sale.

Source: SCAP



Chapter 3 – Competitiveness



1. Supply

- International production
- Main exporting countries

2. Supply chain

3. Competitiveness

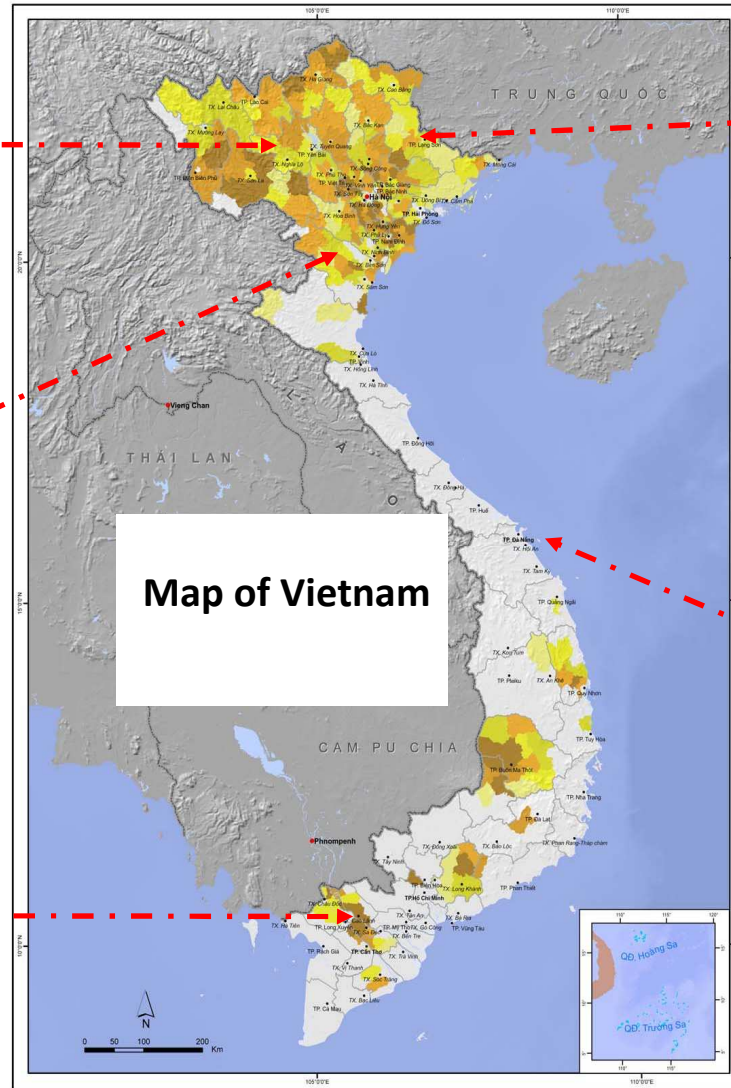
- Characteristics and performance of Vietnam
- Some comparisons with other countries
- Improving product quality in Vietnam

While Vietnam does not grow grapefruit, pomelos are grown in nearly all provinces but especially in the southern parts of the country

North West
 Area: 500 ha
 Yield: 5.4 tons/ha
 Pro.: 2,700 tons

North Central Coast
 Area: 4,200 ha
 Yield: 5 tons/ha
 Pro.: 21,100 tons

Mekong River Delta
 Area: 24,300 ha
 Yield: 7.8 tons/ha
 Pro.: 191,300 tons



North East
 Area: 3,100 ha
 Yield: 4.1 tons/ha
 Pro.: 13,000 tons

Red river delta
 Area: 4,000 ha
 Yield: 12 tons/ha
 Pro.: 48,000 tons

South Central Coast
 Area: 200 ha
 Yield: 2.5 tons/ha
 Pro.: 500 tons

South East
 Area: 3,400 ha
 Yield: 5.8 tons/ha
 Pro.: 19,800 tons

Source: NIAPP
 Note: Map colourings not relevant

Year 2007

There are many different varieties of pomelo grown in Vietnam, and each variety has a unique taste

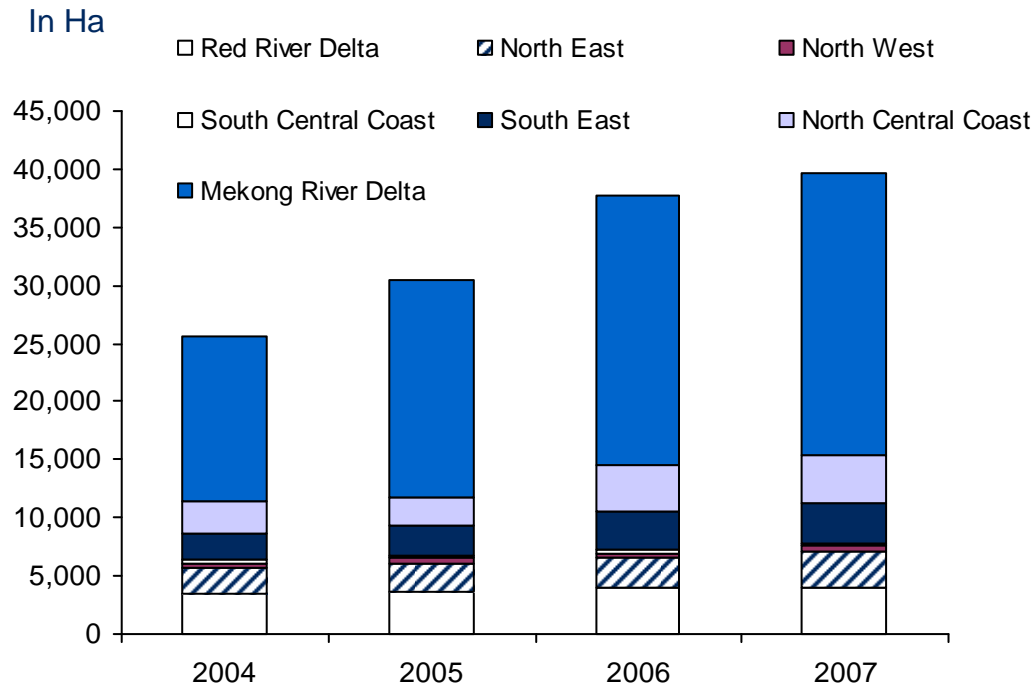
	Character	Location of cultivation
5 Roi	<ul style="list-style-type: none"> • Good growth, piriform shaped fruit, greenish yellow skin when ripe. Fruit weight: 1800g. Flesh is separated from mesocarp easily, light yellow. Brix 8.33%, lots of juice, good and sweet in taste, strong flavor. Seedless if cultivated separately, but more than ten seeds/fruit in mixed cultivation along with other pomelo cultivars. 	<ul style="list-style-type: none"> • Binh Minh District, Vinh Long Province; Ben Tre, Tien Giang, Can Tho Provinces
Green skin	<ul style="list-style-type: none"> • Vigorous growth, round in shape, green skin when ripe. Fruit weight: 1.8-2.0g. Flesh is pinkish red and easily separated from mesocarp. Brix: 11-12%, juice is average, sweet and excellent in taste, strong flavor, number of seeds per fruit are more than 12 	<ul style="list-style-type: none"> • Mo Cay, Chau Thanh Districts, Ben Tre Province; Chau Thanh District, Tien Giang Province
Duong la cam	<ul style="list-style-type: none"> • Low piriform in fruit shape with yellowish green peel when ripe. Fruit weight 1300g. Flesh is easily separated from mesocarp, light yellow. Brix 10.6%, lots of juice, good and sweet in taste. There are lots of seeds per fruit. 	<ul style="list-style-type: none"> • Tan Trieu, Vinh Cuu Districts, Dong Nai Province; Binh Duong Province
Phuc Trach	<ul style="list-style-type: none"> • Healthy growth; hemisphere canopy, leaf oval shaped (10 x 6 cm), fruit globose, large(800-1200g) with smooth, greenish yellow skin 	<ul style="list-style-type: none"> • Phuc Trach District, Ha Tinh Province
Doan Hung	<ul style="list-style-type: none"> • Flower white; fruit small (500-800g), juicy, easy to peel, with few seeds; flesh sweet and somewhat bitter 	<ul style="list-style-type: none"> • Doan Hung District, Vinh Phu Province

Source: FAO

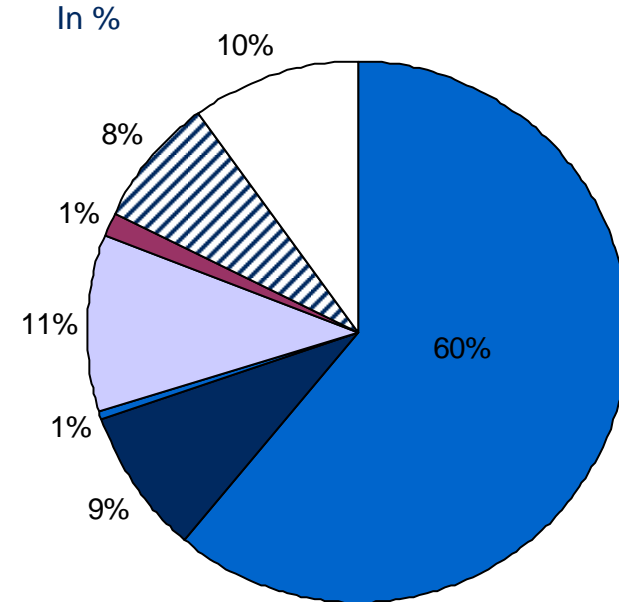


Although pomelos are grown in nearly all provinces, the Mekong River Delta Region accounts for over 60% of the country's cultivation area

Pomelo planted area in Vietnam by region from 2004 - 2007



Share of planted area in each region



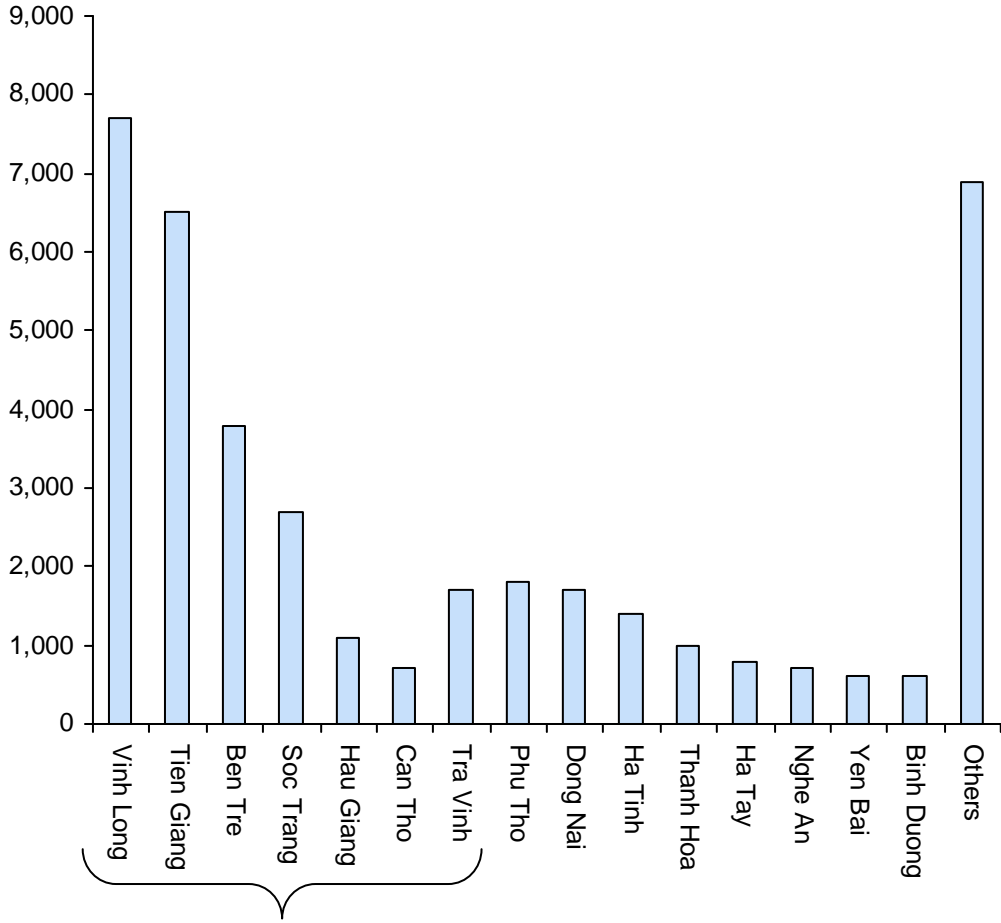
- The Mekong River Delta has the highest yield of all regions and the largest area accounting for around 60% of the total. The three other regions with large pomelo areas and high yield are the Red River Delta, North Central Coast and South East
- In the Mekong River Delta, pomelo is mainly planted in Vinh Long, Tien Giang, Ben Tre and Soc Trang provinces. Vinh Long has the largest pomelo area in the Mekong River Delta accounting for 19% of the total in the Region
- Other provinces with large growing areas include Dong Nai (South East Region), Ha Tinh, Nghe An and Hue (North Central Coast) and Ha Tay, Vinh Phuc, and Ha Nam (Red River Delta)

Source: SOFRI, NIAPP

The Mekong River Delta (MRD) also accounts for by far the highest proportion of formal pomelo production in Vietnam

Pomelo planted area in main province in 2007

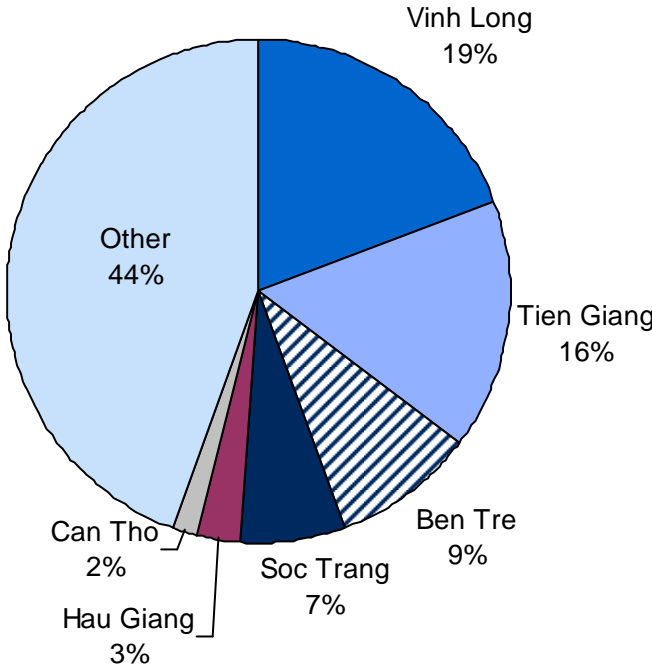
In Ha



Mekong River Delta

Share of pomelo planted area in MRD Region in 2007

In %

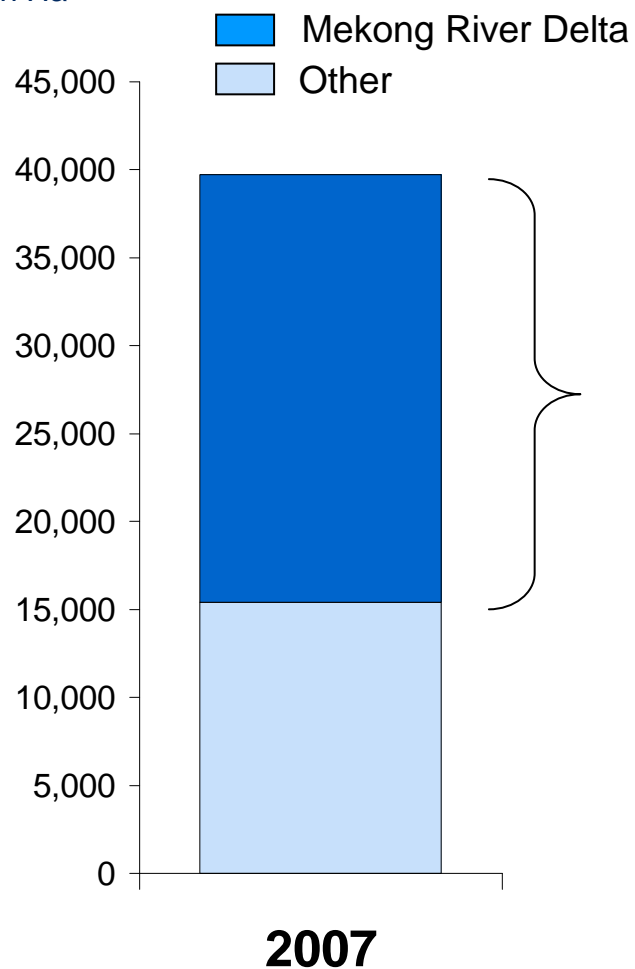


Source: SOFRI

5 Roi is the most widely commercialised variety of pomelo in the MRD, followed by Green Skin, with other varieties also grown more informally

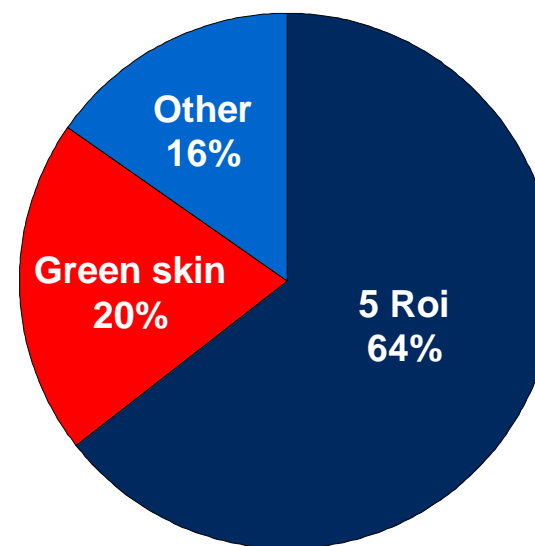
Pomelo planted area in Vietnam in 2007

In Ha



Share of pomelo varieties cultivated in MRD

In %



Source: SOFRI, NIAPP

Chapter 3 – Competitiveness



1. Supply

- International production
- Main exporting countries

2. Supply chain

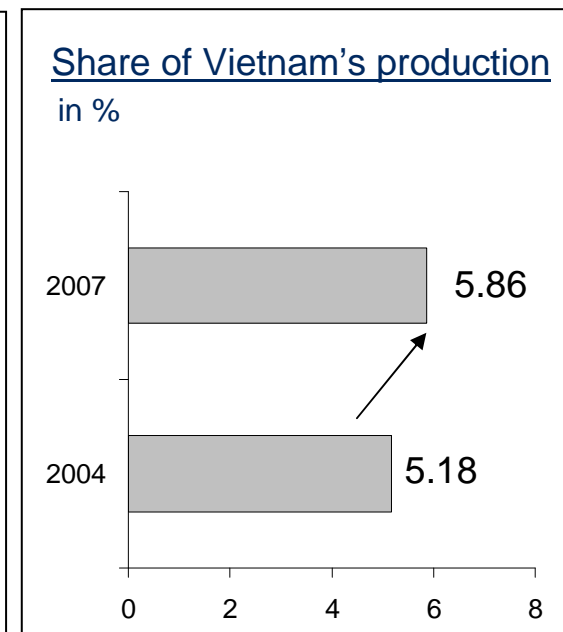
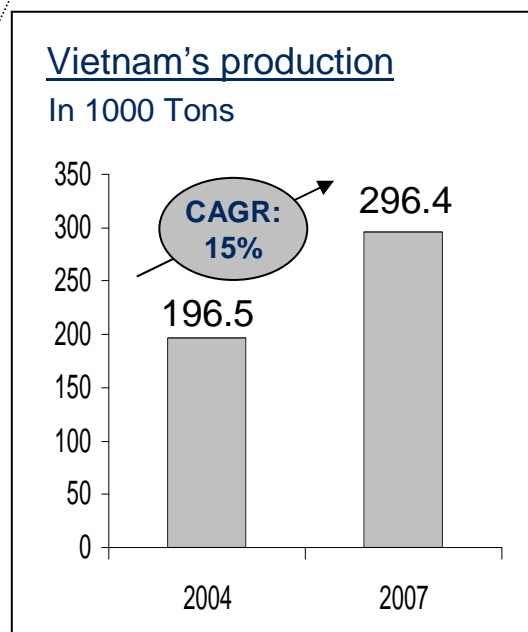
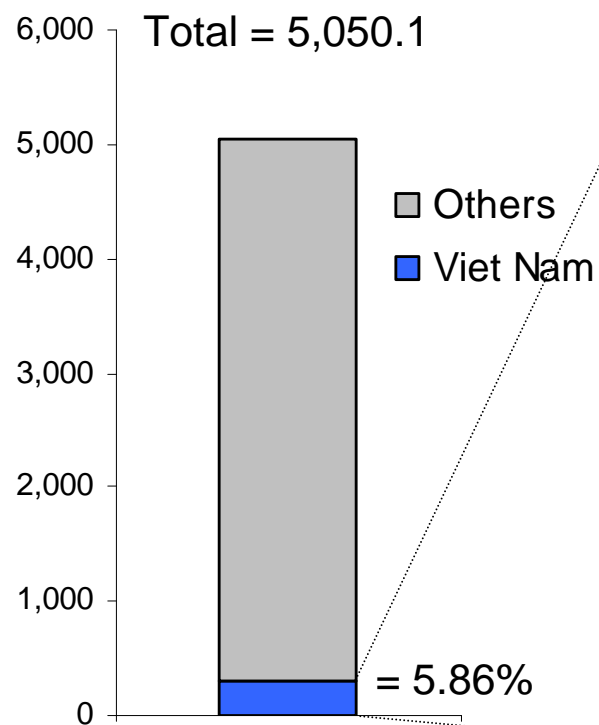
3. Competitiveness

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Vietnam's production of pomelos grew 15% between 2004 and 2007, and now accounts for around 5.8% of global grapefruit production

Global grapefruit production in 2007

In 1,000 tons



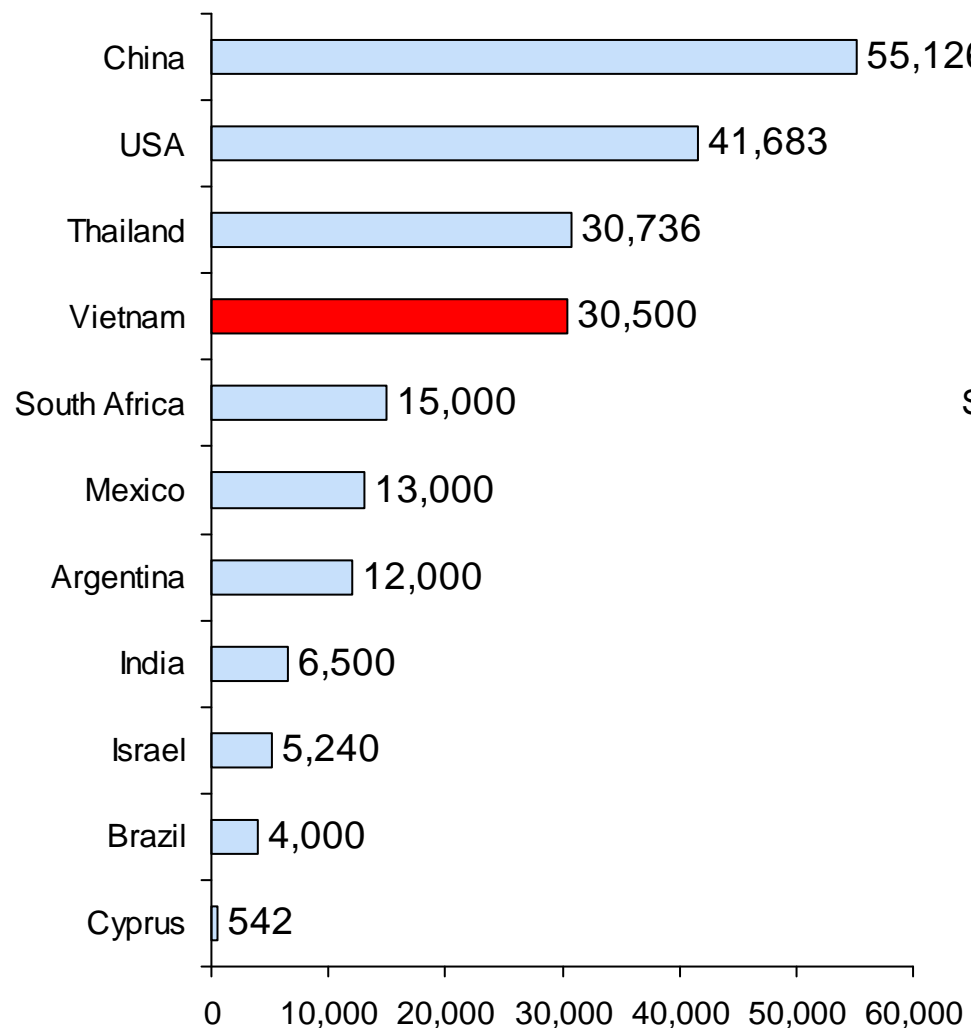
2007

Source: USDA, FAO, NIAPP

Vietnam's planted area of pomelo is quite significant in global terms, but its yield is the lowest along with China and Thailand

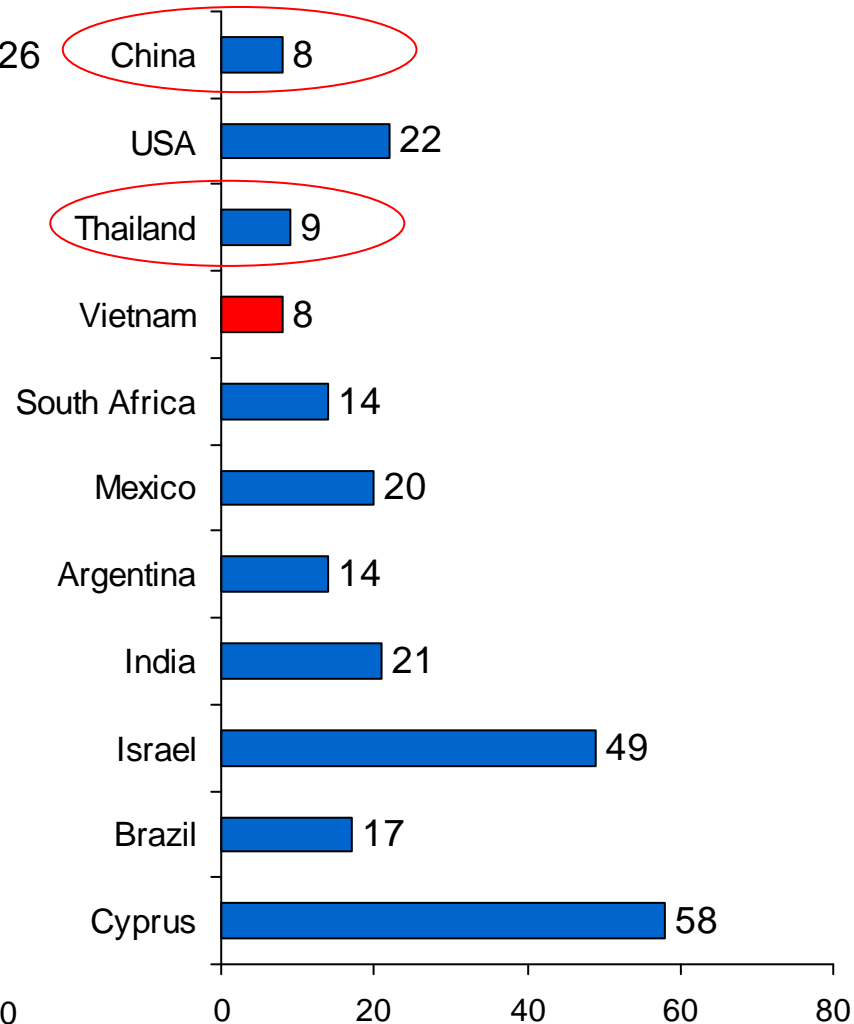
Planted area in selected countries 2005

In Ha



Yields in selected countries 2005

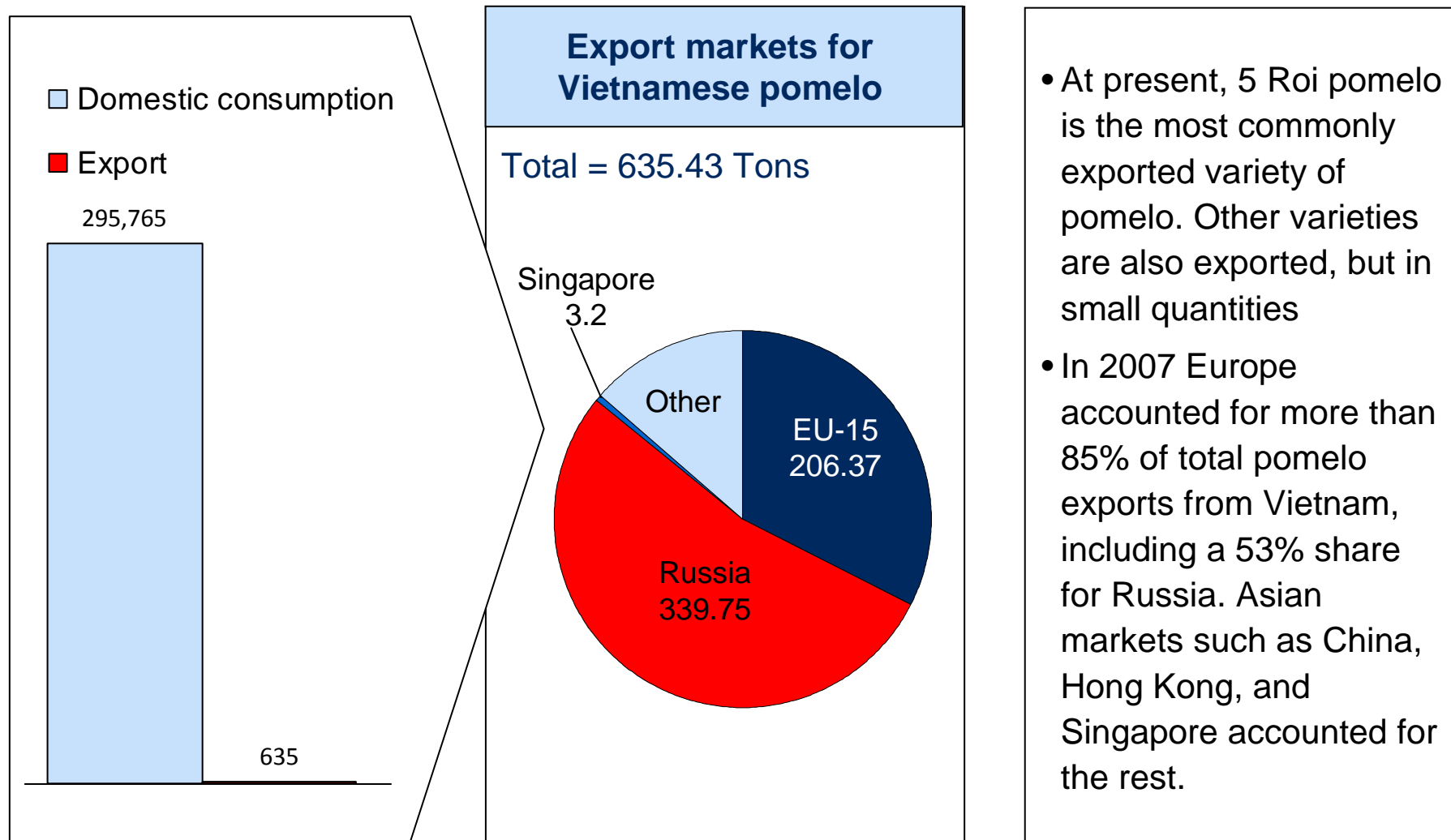
In Ton/ha



Source: FAO, NIAPP

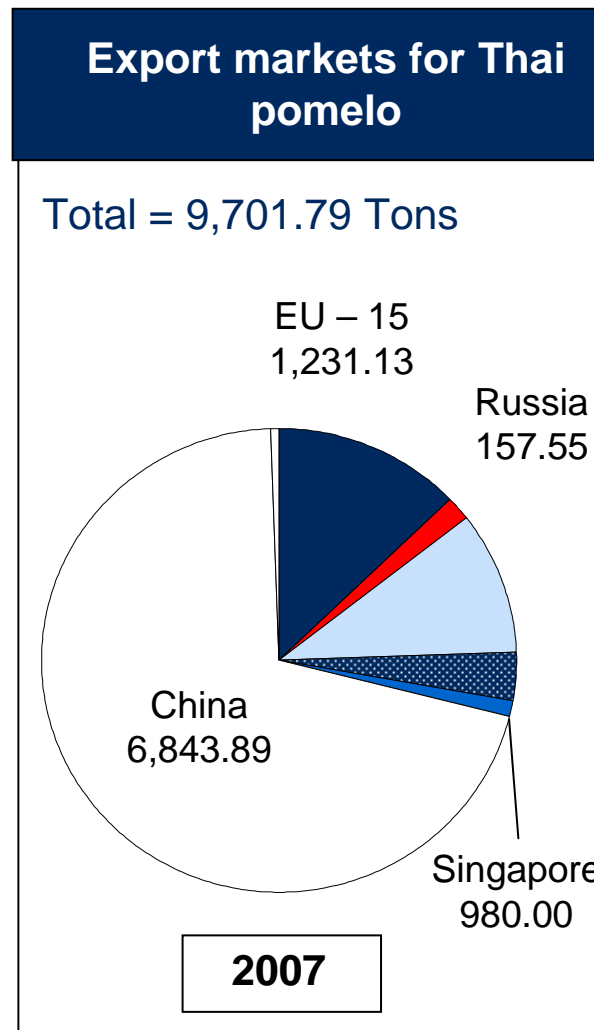
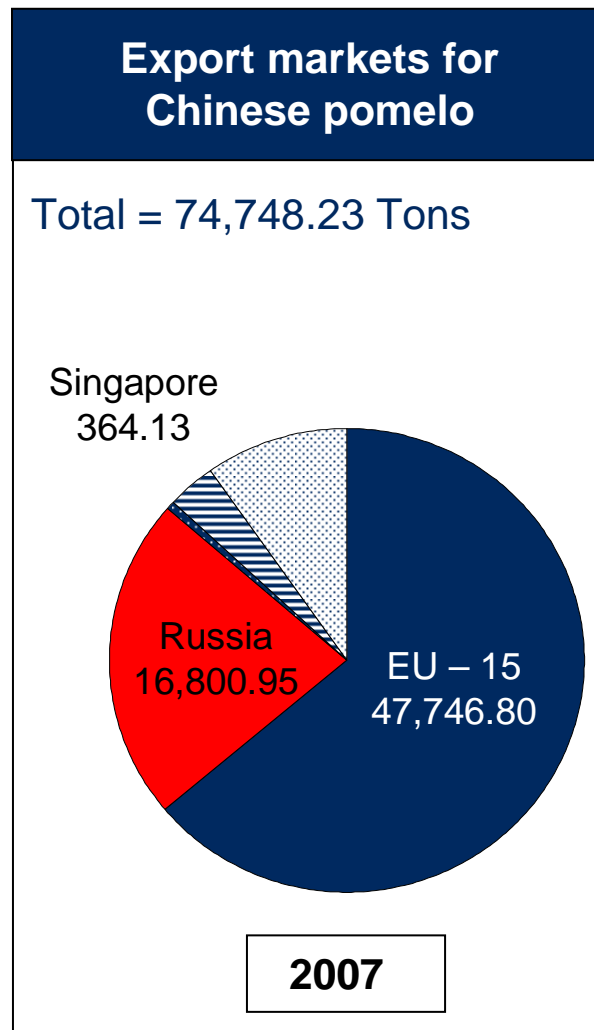
Although Vietnamese pomelo production is quite substantial, its exports are very limited

Vietnam domestic consumption and export production in 2007



Source: USDA, FAO, NIAPP, UN Comtrade

Both China and Thailand export far larger quantities of pomelo than Vietnam

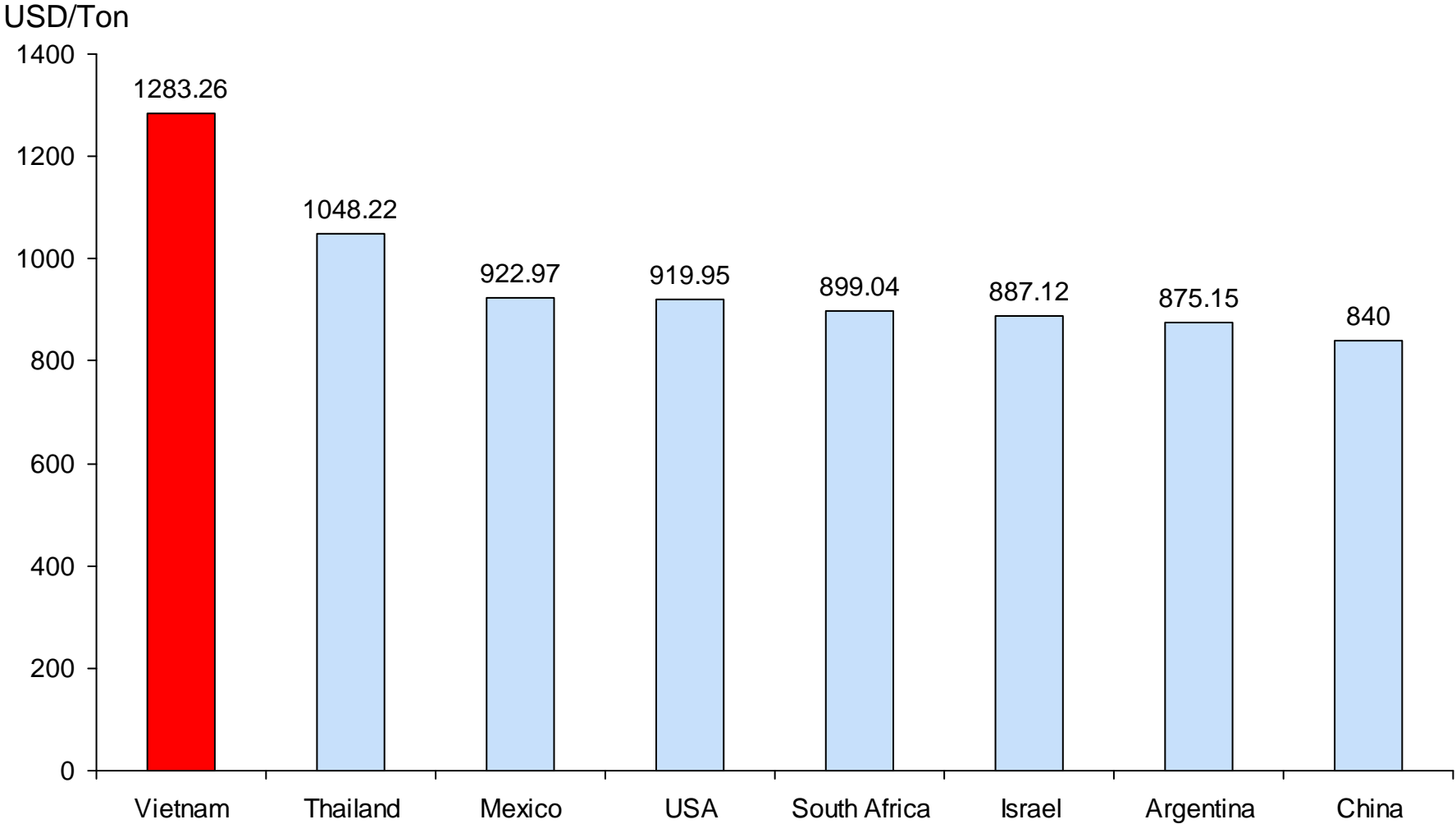


- **China** is the world's leading producer of pomelo. Exports of Chinese pomelo have been increasing, especially to the European Union where the drastic decrease in imports from Florida has opened a marketing window for China
- Systematic **entry to the EU market** is quite recent and was initiated by the **Carrefour group** in the 2002-03 season in France. Exports increased markedly from 2004 onwards
- **Thailand:** Production of pomelo is limited by problems such as inconsistency in fruit quality and infectious diseases like canker and black spots. Many farmers have also been avoiding the EU market because **traceability systems** are hard to implement and it is difficult to control **product quality**.

Source: UN Comtrade, Fruittrop, School of Agro-industry Mae Fah Luang university - Thailand

One reason for lower exports may be that import prices for Vietnamese fresh pomelo are typically higher than for pomelos imported from other countries

Export price of main production countries to EU27 in 2007



Source: UN Comtrade, **Export price= Value/Quantity

Also, Vietnam's main growing season is at the end of the calendar year and overlaps with that of the US and countries in the Middle East thus slightly diminishing the advantage of its relatively long growing season  Peak season

	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug
United States (N)	Light Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Light Blue					
China (N)		Light Blue	Light Blue	Light Blue	Light Blue	Light Blue						
Israel (N)	Light Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Light Blue		
Turkey (N)		Light Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Light Blue				
Cyprus (N)			Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Light Blue			
South Africa (S)	Light Blue								Light Blue	Dark Blue	Dark Blue	Dark Blue
Argentina (S)	Light Blue							Light Blue	Dark Blue	Dark Blue	Dark Blue	Light Blue
Mexico (CA)	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue		Light Blue	Light Blue	Light Blue	Light Blue
Honduras (CA)	Dark Blue	Light Blue	Light Blue								Light Blue	Dark Blue
Cuba (CA)	Light Blue	Dark Blue	Dark Blue	Light Blue	Light Blue							
Vietnam	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Light Blue	Light Blue	Light Blue	Light Blue				

Source: Fruitrop



The application of standards is an important element of a competitive market; food safety standards exist for grapefruit

CODEX STANDARD FOR GRAPEFRUIT*

This standard applies to commercial varieties of grapefruit to be supplied fresh to the consumer, after preparation and packaging

MINIMUM REQUIREMENTS:

- In all classes, subject to the special provisions for each class and the tolerances allowed, the grapefruits must be:
 - Whole
 - Sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
 - Clean, practically **free of any visible foreign matter**;
 - Practically **free of pests affecting** the general appearance of the produce;
 - Practically **free of damage caused by pests**;
 - Free of abnormal external moisture, excluding condensation following removal from cold storage;
 - Free of any foreign smell and/or taste;
 - Firm;
 - Free of **damage caused by low and/or high temperatures or frost**
 - Practically **free of bruising**
- The grapefruits must have been carefully picked and have reached an appropriate degree of development and ripeness in accordance with criteria proper to the variety and/or commercial type and to the area in which they are grown. The development and condition of the grapefruits must be such as to enable them:
 - to withstand transport and handling; and
 - to arrive in satisfactory condition at the place of destination
- **Maturity Requirements:**
 - The minimum juice content is calculated in relation to the total weight of the fruit
 - Minimum juice contents: 35%
- **Coloring:** Coloring must be typical of the variety

Source: CODEX STAN 219-1999, AMD.2-2005

* Note: The **Codex Alimentarius** (Latin for "food code" or "food book") is a collection of internationally recognized standards, codes of practice, guidelines and other recommendations relating to foods, food production and food safety. Its name derives from the Codex Alimentarius Austriacus. Its texts are developed and maintained by the Codex Alimentarius Commission, a body that was established in 1963 by the FAO and the WHO. The Commission's main aims are stated as being to protect the health of consumers and ensure fair practices in the international food trade. The Codex Alimentarius is recognized by the WTO as an international reference point for the resolution of disputes concerning food safety and consumer protection (Source: http://en.wikipedia.org/wiki/Codex_Alimentarius)

However, there are no international sizing standards for grapefruit, so each production region has its own practices

	Type of box	Net weight	Fruit count
Winter			
Florida	Carton	16 – 17 kg	32, 36, 40, 48, 56, 64
Israel	Tray	15 – 16 kg	35, 40, 45, 50, 55
Spain	Tray	14 – 15 kg	32, 36, 42, 48, 54
Turkey	Tray	12.5 – 14 kg	35, 40, 45, 50, 55
Cyprus	Tray	14 – 15 kg	35, 40, 45, 50, 55
Corsica	Tray	14.5 – 15 kg	34, 36, 40, 45, 48, 56
Summer and inter-season			
Argentina	Tray	16 – 17 kg	35, 40, 45, 50, 55
Mexico	Tray	15 – 16 kg	30, 35, 40, 45, 50, 55
Honduras	Tray	15.5 – 16 kg	32, 36, 40, 48, 56
South Africa	Tray	14.5 – 15 kg	35, 40, 45, 50, 55

Source: Fruittrop

Vietnam has quality standards for key varieties, such as for Nam Roi grapefruit of Vinh Long Province

Table	Characteristics	Quality standard
1	Average weight	> 0.9 kg
2	Fruit shape	Pear shape
3	Acid (mg/100 ml juice grapefruit)	28.5
4	Bix/Acid	5.5/1
5	Vitamin C	64.25 mg/100l juicy fruit
6	Seeds	Some to no seeds (0 - 5 seeds/fruit), small seeds
7	Brix (%)	8 -10.56
8	Skin thick	15 -18 mm
9	Flesh ratio	55%
10	Colour skin	When ripe its skin looks green yellow to bright yellow



- Nam Roi grapefruit has long been famous in the Mekong River Delta and across Vietnam as a whole. Its trademark is registered through the vegetable and fruit processing export company Hoang Gia in Vinh Long Province
- The characteristics of Nam Roi grapefruit are distinctive in terms of shape, colour and taste

However, other countries are actively chasing global markets, as illustrated by the case of sweet pomelo of Zhuangyi Company in China



- Zhangzhou Zhuangyi Industry Co. Ltd. located in Zhangzhou City of Fujian province has established a processing factory with an area of 20,000 square metres and a production line for post-harvest handling in Pinghe county, the biggest domestic pomelo-growing region in China. It has a controlled **atmosphere storage** room, with a reserve of 10,000 tons for fruits and vegetables
- In 2002 Zhuangyi's pomelo was exported for the first time to France and its pomelos were **sold** in **Carrefour** supermarkets. Up to now, the company has been exporting more than 1,000 tons of pomelos to France annually
- To sell to Carrefour, the product has to comply with the **standards of Carrefour's quality line**. In order to supply sweet pomelo for Carrefour in a stable way, Zhuangyi started to cooperate with other farms. The standards Zhuangyi used in selecting base areas are:
 1. The area of planted pomelo is **not less** than **15 ha**
 2. The management of orchards conforms to standards
 3. Compliance with the standards of the quality line and implemented seriously.

Source: Institute of Agricultural Economics and Development Chinese Academy of Agricultural Sciences



Example of Carrefour's quality line for Pomelo

€777
 million in Quality Line sales

85
 million in sales of controlled organic products

188
 fair-trade products

The QL pomelo, signed up as a Quality Line product by Carrefour China in 2003, is a large fruit weighing 1.2 to 1.5 kilos. Grown on the mountainside on 9 remote farms in Fujian Province north of Peking, the QL pomelo is guaranteed to be treatment-free as of 40 days before harvest as well as afterwards. In 2003, 16 tons of QL pomelos were offered to French consumers during Chinese New Year; in 2004, the figure rose to 493 tons.

Hosted by CorporateTelegraph.com

- The principles for purchasing agri-food applied by Carrefour are:
 - ✓ original native products;
 - ✓ high quality products;
 - ✓ moderate price products.
- In addition, the farms have to adopt the orchard management method in accordance with the standards of the quality line (including the use of pesticides and fertilizers). According to the requirements:
 - ✓ All the agricultural activities such as **spraying pesticides** and the **use of fertilizers** in farms should be **recorded**. **70%** or more of the **fertilizers** applied should be **organic**.
 - ✓ The quality manual of the quality line clearly stipulates which pesticides **cannot be used** and when the pesticides can be used or not
 - ✓ The quality manual also stipulates the **contents of sugar and acid**, individual fruit **weight and diameter**
 - ✓ In the aspect of irrigation, the orchards were previously rain-fed, but now the fruit trees should be **irrigated with spring water**
 - ✓ The pomelo should be graded according to the required standards at harvest.

Source: Institute Of Agricultural Economics and Development Chinese Academy of Agricultural Sciences



Chapter 3 – Competitiveness



1. Supply

- International production
- Main exporting countries

2. Supply chain

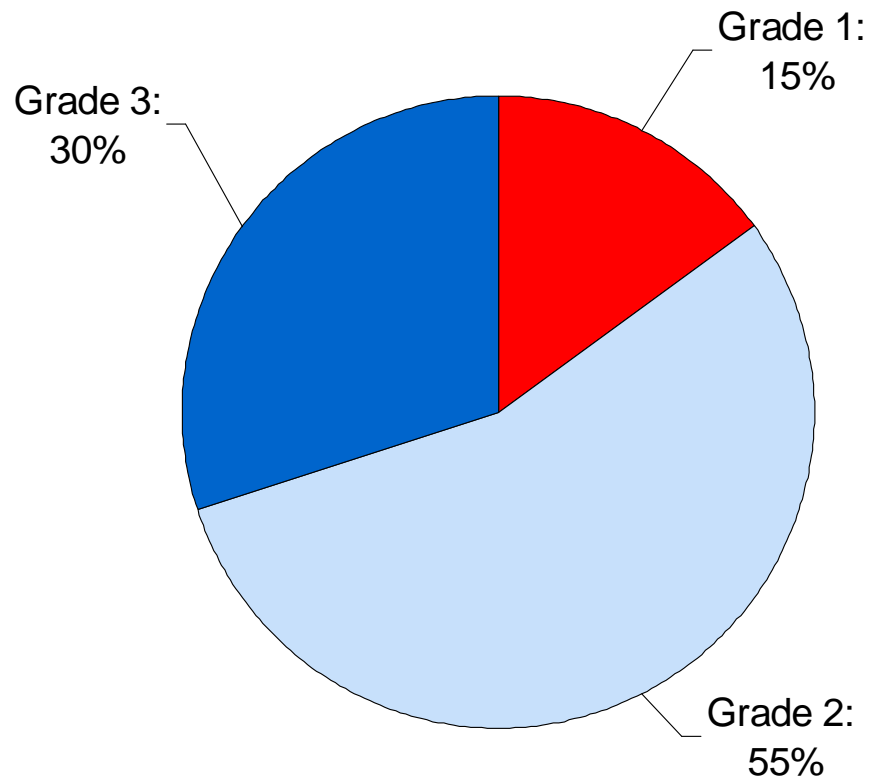
3. Competitiveness

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Grade 2 is often the grade of pomelo chosen for export, in part to ensure meeting meet the quantity requirements of importers

Classification of pomelos according to weight in Vinh Long Province

Share of grade in %

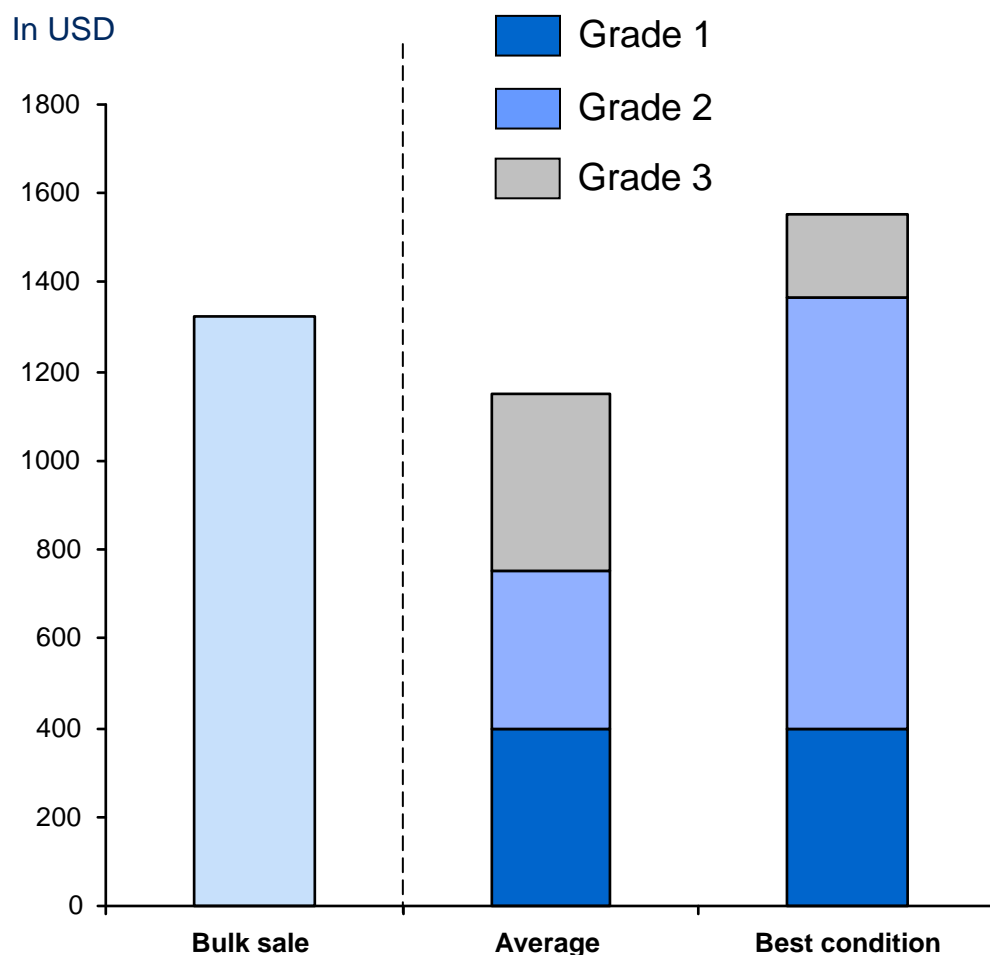


- Farmers usually classify pomelos into 2 grades: one grade for pomelos weighing 0.9kg and over (accounting for 70%), the other grade for those under 0.9 kg (30%)
- In the wholesale market, pomelos are classified into 3 grades:
 - ✓ Grade 1: 1.4 – 2 kg (15%)
 - ✓ Grade 2: 0.9 – 1.4g (55%)
 - ✓ Grade 3: <0.9 kg (30%)
- Besides the factor of weight, quality that can be recognized from the skin is also considered
- In general the classification depends on the target customers, since traders and enterprises have difference ways of classification

Source: SOFRI

However, companies still have difficulty in gathering sufficient quantities of pomelo for export

Comparison of 2 methods of business transaction in Vinh Long



- **Bulk sale:** This is the kind of transaction that is most favoured by farmers since they do not have to get involved in post-harvesting work and **all kinds of pomelos** can be **sold at once** including low quality ones
- **Selling individually by the kg:** allows farmers to **get higher price** at the market but makes it **difficult to sell lower quality** product
 - ✓ On average, only 20 percent of the 55 percent of pomelos of grade 2 are of sufficiently high standard while the remaining 35 percent of often damaged by pests
- Most farmers in Vinh Long do not want to sell pomelos to enterprises because their conditions are much more severe than the traders' although the companies pay slightly higher prices.

Source: Fieldtrip and Team analysis in 2008

To deal with these problems, the industry is introducing new technologies, such as wrapping the fruit to improve its cultivation and protection for higher quality and attractiveness



Wrapping fruit has two main advantages:

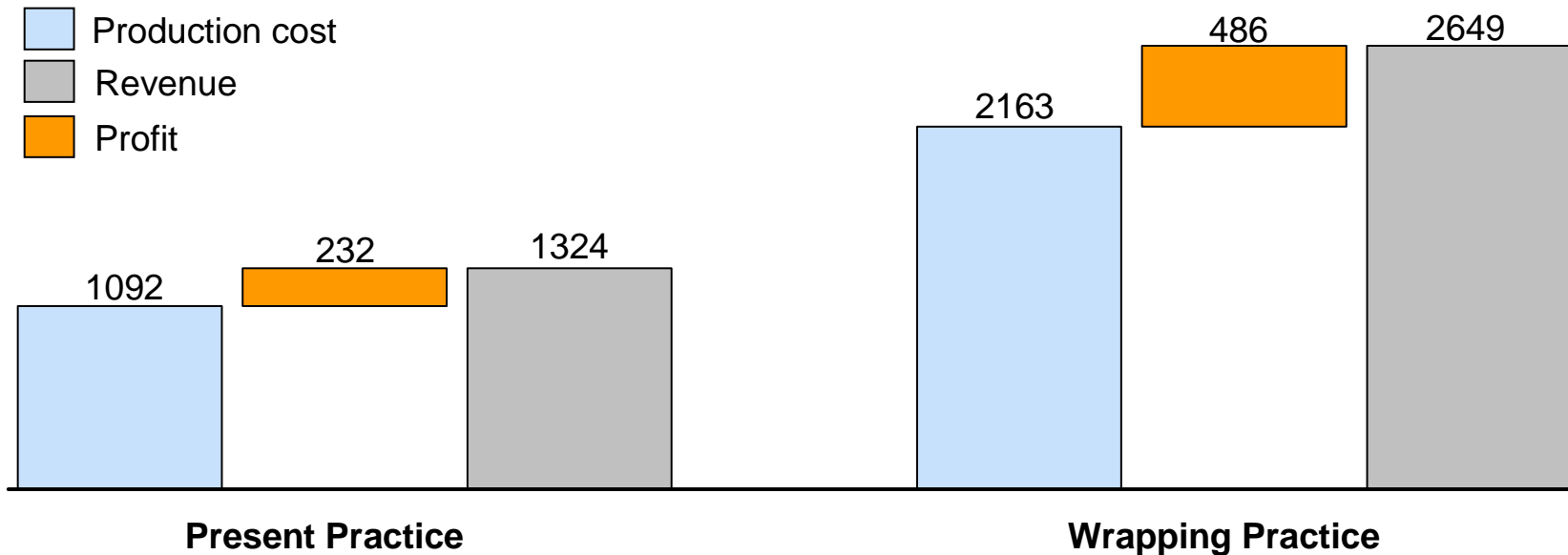
1. It protects fruit against insects and some other diseases, for example from insects, moths and spiders which cause to scabby peel in the case of pomelos and oranges). This should also result in a **reduction in the use of *pesticide*** and should be one of the techniques to produce ***organic fruits***
2. Wrappers can also protect fruit against physical effects, for example scratches from storm or cultivation acts since wraps help fruit to be more ***polished***.

Source: Center for Science and Technology Information of HCM

Wrapping technique would therefore appear to be a good farming practice to assist in developing the pomelo sector in Vietnam

Comparison of revenue and profit of two pomelo farming practices

In USD



- According to a manager of the My Hoa Pomelo Co-operative, the practice of wrapping increases the ratio of pomelo that is of sufficiently high quality for export from 20% to 70% (Note that because of there are no international sizing standards for grapefruit, all grades can be used in export). This should enable companies/co-operatives to gain the initiative in supply
- Although the production cost of farmers will increase if they follow this practice, they should be able to earn a higher profit and have a more stable output.

Source: Fieldtrip and Team analysis in 2008

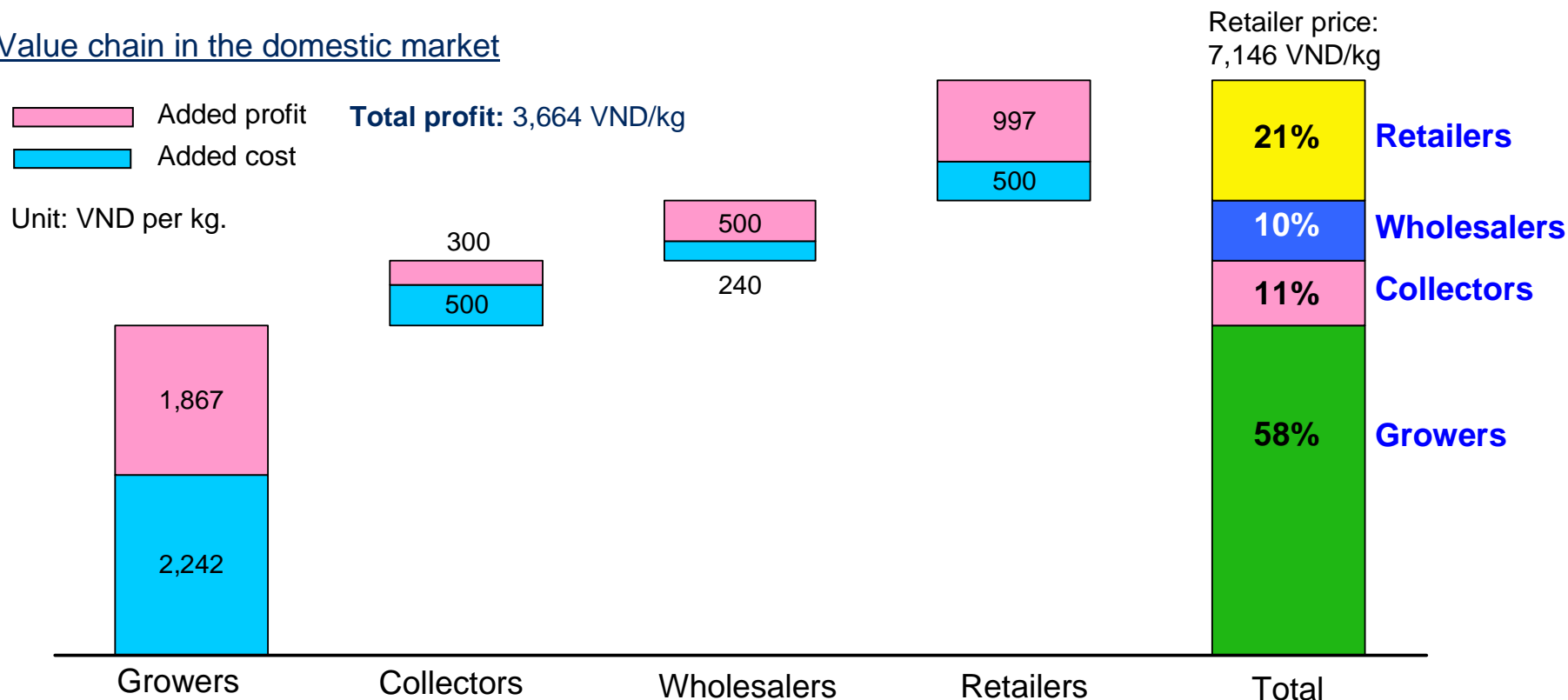
Chapter 4 – Impact



- 1. Economic impact
- 2. Social impact

Pomelo farmers take around 50% of the profit in the value chain, but wholesalers also appear to be major beneficiaries suggesting some inefficiencies

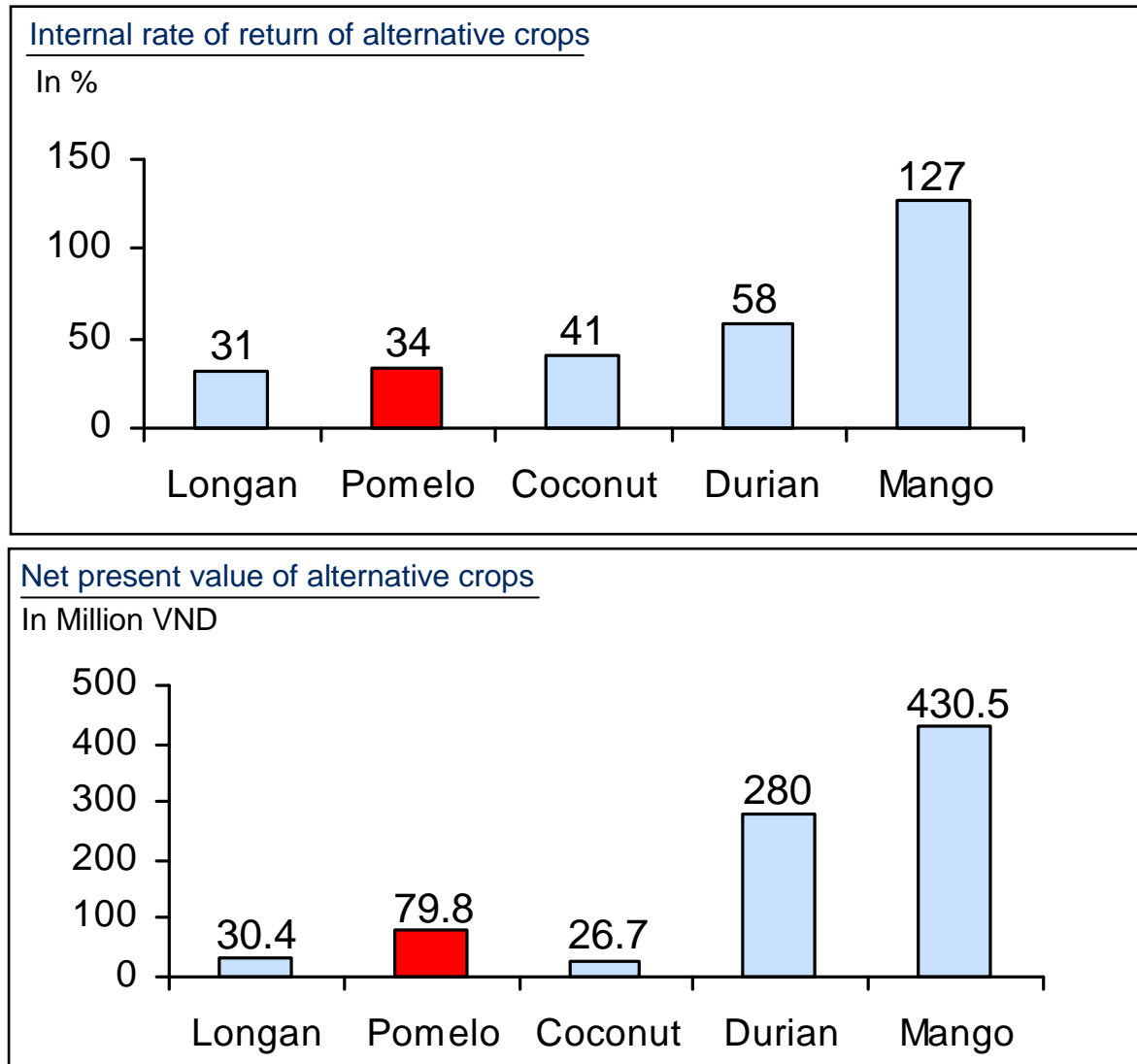
Value chain in the domestic market



Since in general there are a large number of pomelo farmers but each farmer grows only a relatively small quantity, traders (collectors, wholesalers) play an important role in the value chain. However, wholesaling still appears to be quite profitable but relatively low risk compared to other activities in the value chain with wholesale income deriving from commission on trading turnover of around 10%

Source: Team analysis; VAMIP project, August 2008 *

A recent study indicates that the IRR and NPV for pomelo farming systems lie somewhere in the middle of a range of alternative crops in Mekong River Delta

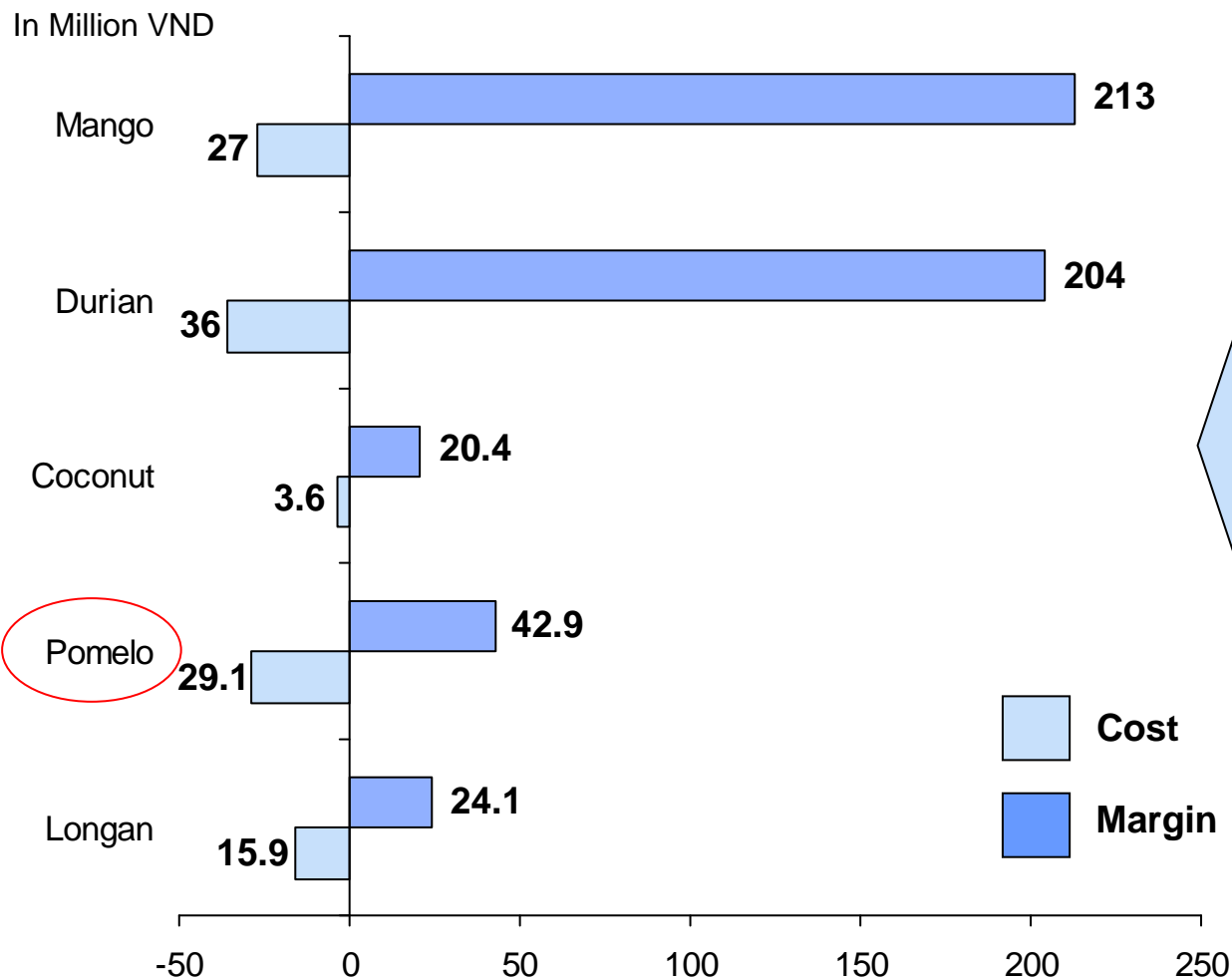


- Although this study indicates that the IRR of pomelo farming is some 34%, this is lower than some alternative crops, where returns can exceed 100%
- In terms of NPV (calculated over a 10-year period at a discount rate of 12% in real terms), some crops (cashew, longan, coconut) show a modest NPV, with others (durian, mango) significantly higher and the NPV of pomelo lying in the middle

Source: Agrifood Consulting – “Study on Suitability, Feasibility and Socioeconomic Benefits of Cocoa Production in Viet Nam”, November 2008

The same study also shows that over a 10-year period farmers can earn higher margins from pomelo than some alternative crops such as longan and coconut, but far lower than from mango and durian

Projected Cost and Margins at Year 10 for Selected Alternative Crops in 2008

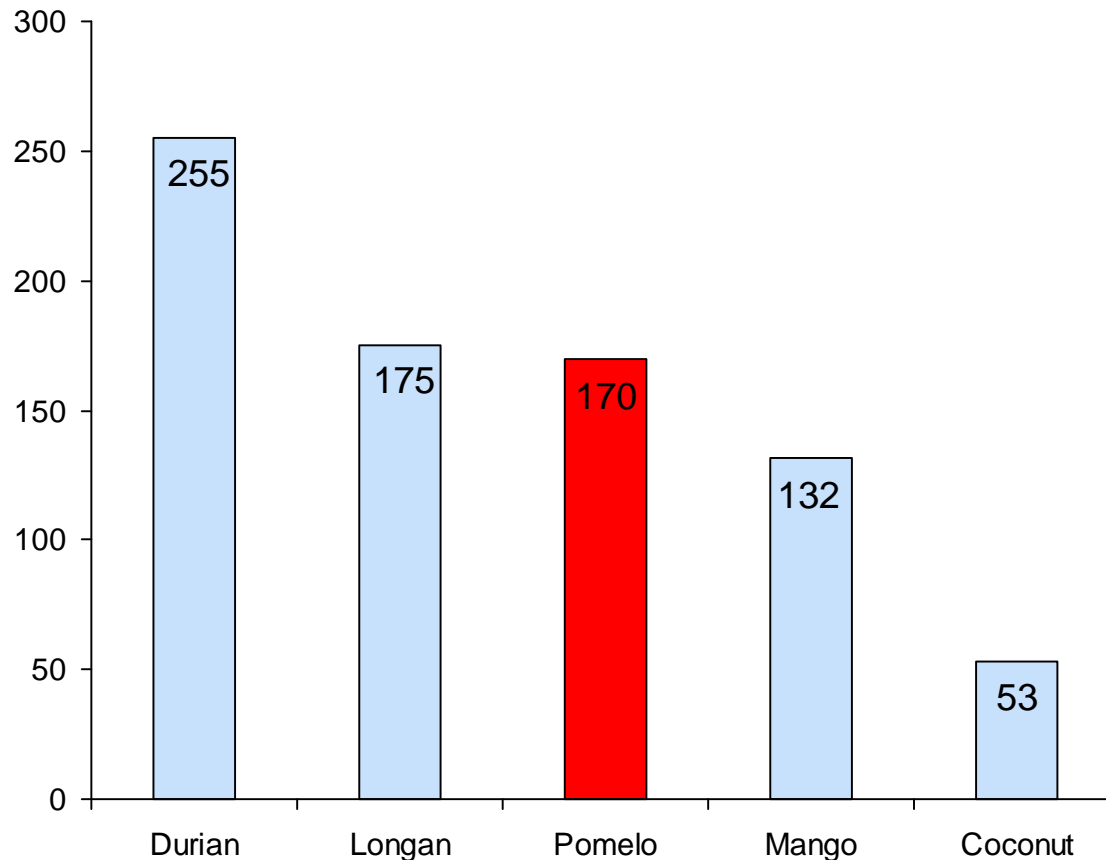


- The annual cost to get sustainable productivity is from VND 3.6 million per ha to 36 million per ha.
- Mango cultivation earns the highest profit with 213 million Dong per ha followed by durian at 204 mn. Dong per ha. The profit that farmers gain from pomelo is higher than some alternatives at 42.9 mn. Dong per ha.
- Because of the higher costs of pomelo, however, its profit-cost ratio does not compare so favourably with those of other crops with similar costs such as mango (27 mn.), and durian (36 mn.)

Source: Agrifood Consulting – “Study on Suitability, Feasibility and Socioeconomic Benefits of Cocoa Production in Viet Nam”, November 2008

This study also shows that pomelo cultivation can generate a significant number of jobs

Labour Days per ha at Full Production for Selected Crops 2008



- In terms of labour requirements, pomelo is less demanding than durian but more demanding than mango and coconut
- Pomelo cultivation consists of the following main steps:
 - ✓ Watering and fertilizing
 - ✓ Treat blossoming
 - ✓ Securing fruits
 - ✓ Trim branches
 - ✓ Making branch share
 - ✓ Cropping
- The amount of labour required rises if farmers are involved in the harvesting stage and in wrapping fruit.

Source: Agrifood Consulting – “Study on Suitability, Feasibility and Socioeconomic Benefits of Cocoa Production in Viet Nam”, November 2008

In Vinh Long, the largest producer of pomelos in Vietnam, pomelo farmers do not feature among the poorest in the province according to GSO statistics

	2004			2006		
	Poverty Headcount (%)	Poverty gap (%)	Observations	Poverty Headcount (%)	Poverty gap (%)	Observations
All Rural HH in MRD	18.13	3.50	1,488	11.75	2.06	1,473
All Rural HH in Vinh Long	13.52	1.25	110	8.13	0.84	114
Pomelo growers	11.5	1.28	29	0	0	22

- ✓ In Vinh Long, which is the province that produces the largest amount of pomelos in Vietnam, the poverty headcount and poverty gap of households are lower than for all households in rural areas in the MRD
- ✓ Between 2004 and 2006, the poverty headcount in all rural households in Vinh Long reduced from 13.52 to 8.13, and by 2006 there were no pomelo-producing households who were classified as poor

Source: Calculated from VHLSS data, Government Statistics Office

By 2006 Vinh Long pomelo-growing households in all expenditure quintiles enjoyed a higher income compared to other rural households

Expenditure Quintiles*	2004		2006	
	Pomelo growers (%)	All Rural HHs (%)	Pomelo growers (%)	All Rural HHs (%)
1	10.34	10.91	0	9.65
2	13.79	18.18	4.55	20.18
3	34.48	29.09	31.82	26.32
4	34.48	29.09	40.91	28.07
5	6.90	12.73	22.73	15.79

Notes:

- * Quintiles: divide HHs by the living standard by expenditure per capita
- 1 = Poorest and 5 = Richest

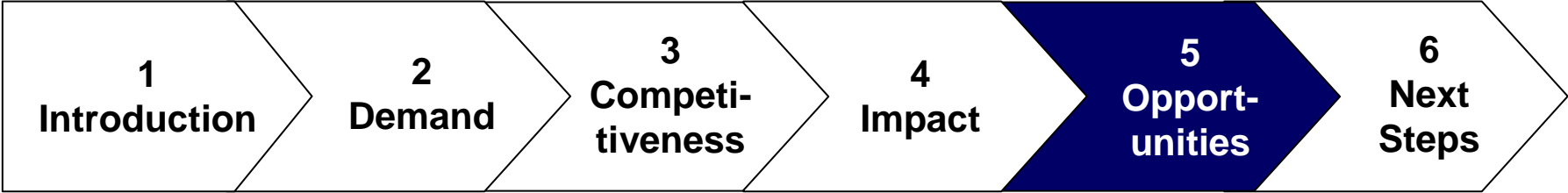
Source: Calculated from VHLSS data, Government Statistics Office

Government survey statistics also show that pomelo households in Vinh Long have more land, and on average are slightly better educated

	2004		2006	
	All Rural HHs	Pomelo growers	All Rural HHs	Pomelo growers
HH Size (# of people)	4.82	4.45	4.55	5.02
Ethnic minority (%)	9.93	9.82	9.89	10.00
Female headed (%)	22.50	11.50	16.46	17.30
HH head education: < primary (%)	6.36	0	6.31	0
HH head education: primary (%)	59.09	65.52	56.76	68
HH head education: High school (%)	34.54	31.03	36.94	32
Perennial crop land (aver. ha)	0.30	0.40	0.30	0.41
Average land (ha)	0.67	0.90	0.78	1.11

Source: Calculated from VHLSS data, Government Statistics Office

5. Opportunities



SWOT and opportunities for development

A rapid SWOT analysis for fresh pomelo suggests a mixed picture, albeit one with potential

Strengths

- There are a several high quality pomelo varieties in Vietnam
- Pomelo can grow throughout Vietnam, increasing the chances of ensuring stability in supply
- Pomelo attracts attention and support from governmental agencies and organizations
- There is already a trademark in the market, since Hoang Gia exports pomelo under a protected exclusive trademark.

Weaknesses

- The area for planting trees is scattered, and not grouped
- Vietnam has been late in introducing and applying modern technologies
- There are no specific product standards
- The export market is limited, and Vietnamese products don't necessarily meet buyers' requirements

Opportunities

- There may be potential markets in countries with which Vietnam has historical links such as Russia and Eastern Europe
- Vietnam could introduce certain advanced technologies to improve fruit quality
- In the Mekong River Delta, there may be potential for a fruit processing industry
- The pomelo season of Vietnam is slightly sooner than some other countries

Threats

- There is high competition from China, the largest pomelo-producing country
- There is high competition for land and labour from other crops that generate higher returns in the planting areas
- The development of industrial zones is threatening to remove from cultivation land currently used for planting pomelo

Source: Team analysis

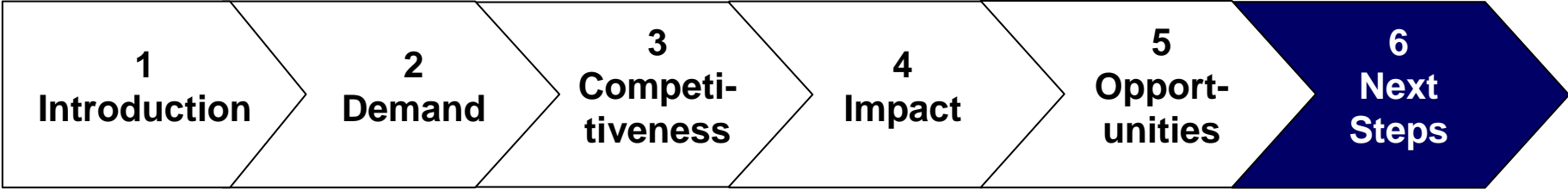
However, actions will be required to improve Vietnam’s competitiveness in the various geographical markets for pomelos

	Advantages	Disadvantages	Some Factors for Competitiveness	Some Additional Implications for VN
Global	<ul style="list-style-type: none"> • Preservation time for pomelo in natural conditions is quite long • The pomelo season of Vietnam is slightly sooner than some other countries • Russia has potential and is a traditional market of Vietnam 	<ul style="list-style-type: none"> • Almost no growth in the global market for grapefruit/ pomelo • Potentially a high set-up cost to improve competitiveness and economies of scale • High quality requirements 	<ul style="list-style-type: none"> • Focus required on quality improvement, branding and systematic globally-focused export strategy • Harvesting period of Vietnam is quite long 	<ul style="list-style-type: none"> • Need to consider adjusting seasonality where possible • Need to apply wrapping techniques in production
Regional	<ul style="list-style-type: none"> • High demand in Japan (especially during the autumn Moon Festival and New year) • Geographical advantage. 	<ul style="list-style-type: none"> • High competition from Thailand and from China, which is the major producing and exporting country in the world • There are already many tropical fruits available • Japanese quality standards for fresh fruit are very high 	<ul style="list-style-type: none"> • Focus required on quality improvement, branding and systematic regionally-focused export strategy • Harvesting period of Vietnam is quite long 	<ul style="list-style-type: none"> • Need to consider adjusting seasonality where possible • Need to apply wrapping techniques in production
Local	<ul style="list-style-type: none"> • Many high quality pomelo varieties • High demand at traditional festival times • Support from governmental agencies and organizations 	<ul style="list-style-type: none"> • There are many substitute fruits in the local market 	<ul style="list-style-type: none"> • Promotion strategies need to be applied • Need to create a high quality local supply chain 	<ul style="list-style-type: none"> • Need to apply high quality supply chain in pomelo sector

Source: Team analysis

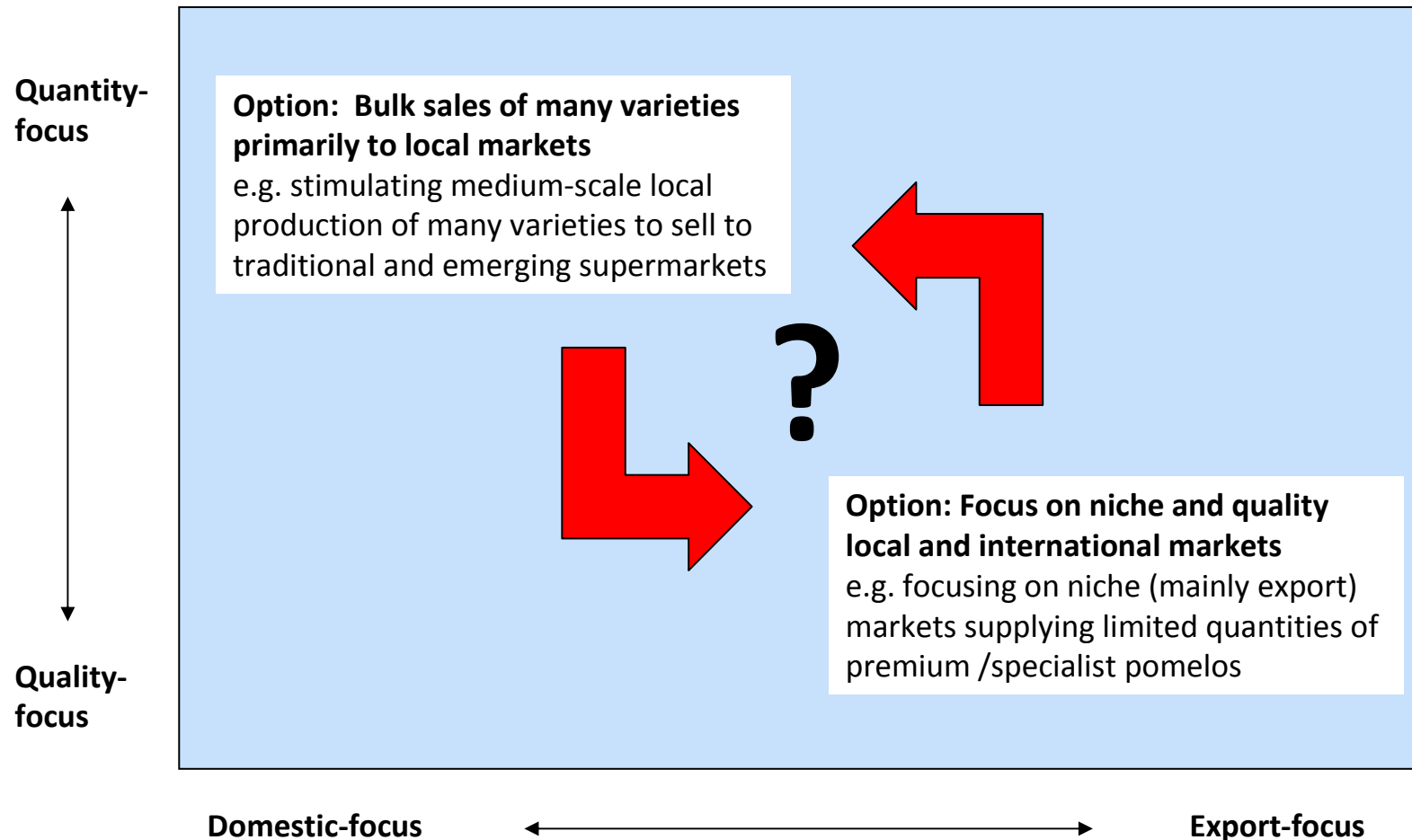


5. Opportunities



Future options

The preceding data suggest that Vietnam should determine whether its focus for pomelo should be on quantity for the local market or quality for the international market – or some combination of the two



Note: The above options are presented to highlight some main decisions, but it is understood that issues of domestic vs. export and quantity vs. quality are trade-offs rather than absolutes

Option: Bulk sales of many varieties primarily to local markets

e.g. Stimulating medium-scale local production of a range of varieties to sell to traditional wet markets and other outlets and emerging supermarkets

Pros

- Is not over-dependent on international buyers.
- There are a range of tasty varieties* of pomelo in Vietnam and each variety has a unique taste. The demand for these special varieties is higher than the supply and they do not all need to be specially prepared for export
- There is support available from local authorities for the specialty varieties
- Farmers can get a higher premium from these varieties since the price of these fruit is often higher than for normal varieties

Cons

- Pomelo has to compete with other citrus and fruits sourced both locally and internationally
- These varieties are usually cultivated in specific regions
- The productivity and gross margins of pomelo are often lower than for other fruits
- Investment required for research, development and marketing of more varieties (but lower than for export-related investment requirements)
- Focusing dependence on local market
- Lower incentive to improve quality and productivity

- **Assumption:** Potential to expand specialty varieties and ensure distribution logistics
- **Resourcing implication:** Some investment in quality control and logistics, but likely to be smaller requirement for investment in production increases
- **Organizing:** Links to traders, business associations and local governments

* Varieties include: Thanh Tra, Green skin, Phuc Trach, etc.

Option: Focus on niche and quality local and international markets

e.g. Stimulating focusing on niche (mainly export) markets supplying limited quantities of premium /specialist pomelos

Pros

- Potentially large market on a regional and global scale with high value added
- Known to be accessible since China is already exporting to richer markets such as the EU and Japan
- Climatic conditions in the Mekong River Delta Region enable a longer production cycle
- Companies like Hoang Gia Company already have experience of exporting pomelos to the EU market
- Ensures the industry is no longer dependent on local market only
- Pomelo production not yet sufficient to supply the market in the northern provinces
- Logistical improvements should benefit the farmers

Cons

- Most pomelo is grown on very small family holdings with low technical level, so difficult to make improvements and achieve economies of scale
- Difficult for these types of farmer to practice good quality management (e.g. Good Agricultural Practices, Organoleptic, etc.)
- Limited hands-on experience of quality control, application of technical expertise (e.g. grading, packaging)
- Pomelo has to compete with other “exotic” fruits

- **Assumption:** Vietnamese pomelos will be able successfully to apply good agricultural and quality practices
- **Indicative Resourcing Implications:** Quality improvement initiatives; establishment of quality control services by public and/or private sectors to ensure export quality; method/institution to monitor and maintain information on domestic and international markets and trends
- **Organizing:** Establishment of strong links with traders, business associations and local governments; association with research institutions to update techniques; links to farmers and companies for extension staff; appropriate farmers’ and other associations to ensure quality, and industry infrastructure and logistics