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TRADE INFORMATION BRIEF

FRUIT



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Participation in international trade has become one of the most important factors in increasing the prosperity of countries. Yet for many developing countries, perhaps particularly for those in Sub-Saharan Africa (SSA), trade is viewed primarily from a defensive perspective, with a focus on the disruptive effects of imports rather than on the opportunities presented by increased access to world markets. A key reason is the existence of information market gaps that are often associated with trade facilitation and development in developing countries – information on the export performance and potential of many developing countries remains incomplete.

The **TRADE INFORMATION SERVICE** series of market briefs aims to contribute to bridging this information gap for existing producers in the Southern African Development Community (SADC) who may not have the financial resources to generate a fully fledged market research process. The briefs are not intended to act as the detailed export market intelligence that successful exporting requires, but rather as a basic first-cut analysis of export prospects, to allow enterprises to make the decision on whether to initiate further market research.

Each Trade Information Brief will cover a product cluster of particular interest to members of SADC. The cluster may represent an existing key set of export products with potential for expansion, or a relatively new set where there is an indication of competitive advantage for the region.



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1. Introduction

International trade in fruit and vegetables has been growing over the past 40 or so years, at a much faster pace than other agricultural commodities. Its share in world agricultural trade has increased from 10.6% in 1961 (US\$3.4-billion) to 16.9% in 2001 (\$70bn)¹. More recently, from 2000 to 2004, the value of trade in fruit and vegetables² increased by over 40%, from \$52bn to \$74bn, at an annual growth rate of 9.3%.

The variety of commodities on offer is also increasing, as is the frequency at which these new varieties are being traded. Most of the trade in fruits and vegetables occurs within three geographic regions – the European Union (EU), the North American Free Trade Agreement (NAFTA) countries and East Asia (China and Japan). Traditionally, these areas have been supplied by nearby countries, with similar demand patterns and similar income per capita (intra-regional trade). However, these trends have been changing over the past few years, with greater imports of fruit and vegetables coming from southern developing countries.

With rising incomes worldwide, improved transport and various international trade agreements, markets around the world are expanding and their demand for variety is increasing. Fruit and vegetables are seen as more and more important in maintaining a healthy lifestyle; this not only increases the importance of fruit and vegetables as necessities, but also makes for higher year-round demand.

Critically important for SADC (and other southern countries) is the fact that their produce is harvested during the off-seasons of the northern countries. This counter-seasonality means that they can supply these markets during periods when 'domestic' supply is low, giving them a foothold in a market that is often difficult to access.

The key to SADC countries being able to market their produce successfully, to dispel reservations and to increase awareness is to be able to supply produce of a certain quality, adhere to stringent phytosanitary regulations and standards (and compete with the produce of developed countries), and supply such produce timeously.

To this end, the two biggest issues facing potential SADC exporters is that of non-tariff barriers to market entry (predominantly phytosanitary and labelling), and logistics and marketing (including transport, infrastructure and product awareness). Some of these challenges are examined here.

¹ All monetary figures in this paper are in nominal US\$.

² Excluding juices and purees, and including seeds and other propagating materials.

Before continuing, however, it is necessary to point out some definitional problems. The cluster category 'fruits and vegetables' not only encompasses a great variety of commodities, but also a range of different states of consumption, including fresh, frozen, dried, dehydrated, semi-processed and processed.

Depending on the definitions, the category can also include canned fruits and vegetables, along with fruit purees and juices. The entire cluster is thus particularly varied, and depending on the specific definition used in the literature and/or market reports, the commodities included therein can change a great deal.

In this report, we follow a definition in line with the harmonised system of codes (HS system), which distinguishes between fruit and vegetables and between fresh/dried fruit (or vegetables) and processed/prepared fruit (or vegetables).

Table 1: Composition and growth of world fruit and vegetable exports

	Growth rate	Composition of export value	
	1989-2001 (%)	1967-1971 (%)	1997-2001 (%)
Fruits and derived products	4.2	48.5	39.1
Vegetables and derived products	5.2	26.0	32.7
Nuts and derived products	4.5	10.5	9.0
Fruit and vegetable juices	7.1	3.6	8.7
Pulses and derived products	3.6	4.7	3.9
Roots, tubers and derived products	2.6	5.0	6.0
Others	-1.4	1.7	0.6

Note: Product groups according to (UN) Food and Agriculture Organisation (FAO) definitions, including over 160 items (FAOSTAT)

Source: FAO

We therefore have further sub-divided this rather large and unwieldy category into 'Fruits', which we examine in this Brief (including fresh, dried and preserved but not processed), and 'Vegetables', which we examine in the next Brief.

An example of the shares of the various components in the entire product cluster is shown in table 1.

2. Product description

2.1 Cluster

As mentioned earlier, this product cluster poses something of a definitional problem, as researchers often group the cluster into different combinations of commodities. As such it is difficult to compare figures across different reports. This report's cluster is in accordance to the HS classification system, where vegetables fall under chapter 07: edible vegetable and certain roots and tubers (for example, 0701 refers to potatoes fresh or chilled), and fruit falls under chapter 08: edible fruit and nuts, citrus fruit and melon peel. Table 2 shows the HS codes and description for the various lines under chapter 08. For those categories at the 4-digit level (for example, 0804), all sub-categories were included; for those at the 6-digit level, only the commodity lines at the HS 6 level were included.

Table 2: HS* codes for fruit at HS4 and HS6 level

0801	Coconuts, brazil nuts & cashew nuts, fresh or dried
080111	Coconuts, desiccated
080119	Coconuts, other than desiccated
0803	Bananas and plantains, fresh or dried
0804	Dates, figs, pineapples, avocados, fresh or dried
0805	Citrus fruit, fresh or dried
0806	Grapes, fresh or dried
0807	Melons and papayas, fresh or dried
0808	Apples, pears, quinces, fresh
0809	Apricots, cherries, peaches & plums, fresh
0810	Strawberries, raspberries, blackberries, gooseberries, currants, cranberries, and kiwi fruit, fresh
0811	Strawberries, raspberries, blackberries, gooseberries, currants, cranberries, and kiwi fruit, frozen
0812	Strawberries, cherries and other fruit and nuts, prepared but inedible
0813	Dried fruit
081310	Apricots, dried
081320	Prunes, dried
081330	Apples, dried
081340	Other dried fruit (excluding 0801 to 0806)
0814	Peel, citrus or melon, fresh, frozen, dried, preserved

* Harmonised System Code is an international method for classifying products for trading purposes

2.2 Determinants of trade in fruit

2.2.1 Supply-side factors

The climate, proximity of the grower to the market and the timing of the growing season are the most basic factors in determining the international supply of horticultural products. Other factors may include the availability of land, human and financial capital, infrastructure (roads,



railways and ports) and the ability to access a market as well as market the produce.

Climate determines what varieties of fruit can be grown. Whilst some varieties are fairly robust and can be grown in various different soils and climates, others have specific needs. Traditionally, northern hemisphere countries have only been able to grow those fruits classified as 'temperate fruits', or those that can be grown in temperate locations (apples, pears, deciduous fruits like peaches and nectarines, grapes, melons, strawberries, etc.) and certain sub-tropical fruits, which require slightly warmer conditions (citrus fruits like oranges, mandarins and lemons, avocados, lychees, passion fruit, figs, etc.).

In the EU, much of the sub-tropical fruit is grown in the Mediterranean region. The third group of fruits, tropical or exotic fruits, traditionally have been and still are for the most part grown in the southern hemisphere or warmer countries (bananas, pineapples, mangoes, papayas, dates, etc.).

Whilst technological advantages such as greenhouses and growing different (heat-insensitive) varieties have made it possible to grow these products in colder countries, most of the time it is simpler and more cost-effective to grow these fruits in climates to which they are suited and then import them. Bananas are the single most important imported fruit for this very reason.

Proximity to markets is the second major determinant of trade. Although transportation costs have decreased significantly over the last 20 years or so and storage technology has advanced, the distance to a market can still be a considerable barrier to trade.

The US imports most of its produce from its neighbours Canada and Mexico and from South America (Chile). Japan and the EU show a similar pattern, which to a large degree is influenced by the proliferation of preferential and regional trade agreements. The most obvious example is that of the EU, as well as NAFTA (the North American Free Trade Agreement). Zero tariffs and standardised quality, marketing, packaging and labelling systems also allow for less handling of the fruit and more timely delivery.

The third and most relevant determinant to SADC countries is that of **seasonality and price**. Countries in the southern hemisphere can produce and export fruit during the northern hemisphere's winter months when domestic producers cannot adequately supply the major northern markets. Even countries that are net exporters of a commodity during peak seasons (like the US that exports oranges) may import that commodity during the off-season.

Without such trade, the seasonal nature of production, combined with the limited (or costly) storage of certain fruits, would result in massive price troughs and peaks. More consistent prices can also stimulate

demand and assist in developing longer term relationships. It can further facilitate better planning for farmers/exporters and so introduce more attractive or less risky investment options.

Technology is another increasingly important determinant of the level of trade in fruit. Traditional exporters had to contend with much higher shipping costs, shorter 'window' periods to get their products to the desired destination and the ever-present risk of fruit losing their freshness, leading to a loss in value. Controlled atmosphere technologies and improved cold chain management can extend shelf life, while satellite technologies and other electronic and computer advances enable shorter cargo delivery time. Remote monitoring systems alert to problems such as a change in the storage conditions and can thus reduce potential losses.

2.2.2 Demand-side factors

The demand-side factors of the northern countries revolve around changing demographics and consumption habits, and are dealt with in the following section. In short, the demand for fresh fruit and vegetables in the northern hemisphere is predicted to increase more than any other food group over the next 15 years or so.

There are a number of reasons for this, the most important being increased health consciousness, changing social structures, increased labour participation (especially of women) and longer working hours, the reduced demand for foods that require a lot of time to prepare, higher per capita disposable income, increased availability of and demand for variety (including indigenous products) and the ageing nature of most northern countries' populations.

2.3 Organic produce

A rapid increase in the demand for organic produce, especially in the US, the EU and Japan, and a less rapid expansion of farmers in these regions employing organic producing techniques, have created supply gaps.

These supply gaps not only increase the price of organic produce so that consumers pay premiums of up to 200% of the price of normal produce, but also create opportunities for developing countries to increase their exports of such produce. Many developing countries use traditional production techniques that do not employ agrochemicals, which means they may already comply with organic standards, or if not, may only be a small alteration away from compliance.

At the same time, organic farming can raise production costs substantially – but more so for developed countries that historically have relied on chemicals/pesticides to control for diseases and pests. At the

same time, with organic farming techniques communities are able to achieve many other goals, such as sustainable agriculture, environmentally friendly production, crop diversity and eco-balances.

For the reasons outlined above, it is believed that developing countries have a comparative advantage in organic production. As such there is wide-spread optimism that organic farming and the exportation of organic produce can provide good foreign currency earning potential and many other related benefits to developing countries.

At present the US market for organic food is estimated at US\$9.3bn, and has grown by nearly 25% between 2000 and 2003. In Europe, growth rates range between 20% to 30% per annum, with increased health awareness the most important driving factor. Since major retail chains have entered the organic produce market, some commodities have seen growth rates of more than 50% per annum, and organic produce has become mainstream.

At the same time, organic techniques are entering all facets of production and now include not only fresh produce but even commodities such as baby food (60% of all baby food in Germany is now organically produced). In Asia, Japan is the biggest market for organic produce, and the second biggest market in the world, with over \$2bn in organic foods sold in a year. Other countries like China, India, Singapore and Malaysia are beginning to follow suit.

3. Production and consumption

3.1 World trends

3.1.1 Production

World production of fruit and vegetables grew by 23% from 1961 to 1970, by 28% from 1970 to 1980, by 30% from 1980 to 1990 and by 49% from 1990 to 2000, reaching 1,274 million tons by 2003 (220% overall growth from 1961 to 2003). Of this, world production of fruit reached 174-million tons in 1961 and grew to over 503-million tons by 2003.

Table 3: World production of fruit by region, selected countries and type 2004 ('000 tons)

Regions	Total fruit	Citrus fruit	Bananas & plantains	Apples	Grapes	Mangoes	Peaches & nectarines	Pears	Pineapples	Vegetables & melons
World	503,278	108,535	103,936	61,919	66,570	26,574	15,409	18,098	15,288	865,810
East & South East Asia	129,309	19,641	20,963	24,054	6,137	7,630	6,295	11,173	6,351	478,194
South America	70,879	26,297	21,346	3,731	5,901	1,485	913	776	2,514	20,402
European Union (25)	65,371	11,079	457	12,347	28,165	-	4,261	2,970	2	66,762
Africa	63,405	11,398	30,001	1,921	3,516	2,624	713	636	2,595	51,172
South Asia	55,490	6,624	18,323	1,890	1,249	12,232	188	232	1,506	90,066
North America (NAFTA)	45,361	21,383	2,037	5,445	5,953	1,506	1,644	854	991	51,707
Middle East	41,099	2,237	224	5,323	8,989	573	1,092	628	-63	67,401
Central America	23,719	7,808	7,833	532	471	1,747	224	29	1,707	12,194
Rest of Europe	14,203	-	-	5,150	4,300	-	205	540	-	34,614
Oceania	6,754	582	1,194	800	2,181	44	122	190	134	3,419
Caribbean	6,454	1,255	3,321	2	26	724	-	0	209	4,802
SADC	11,059	2,289	3,555	867	1,708	511	1,114	374	526	5,200
Selected countries	Total fruit	Citrus fruit	Bananas & plantains	Apples	Grapes	Mangoes	Peaches & nectarines	Pears	Pineapples	Vegetables & melons
China	80,646	14,655	6,420	22,163	5,528	3,582	5,832	10,345	1,420	423,369
Japan	3,706	1,470	1	881	206	-	152	393	12	11,699
Russian Federation	3,941	-	-	2,030	318	-	50	95	-	15,504
US	29,913	14,908	10	4,571	5,418	3	1,390	810	270	39,185
India	47,031	4,750	16,820	1,470	1,200	10,800	150	200	1,300	80,529

Source: FAOSTAT and own calculations

Table 3 shows growth in production between various regions, and a few selected countries. The greatest levels of production occur in Eastern and Southern Asia, followed by South America, the EU and Africa. Most of Eastern and Southern Asia's production occurs in China, which accounts for a massive 62% of that region's production and 16% of world production (China produces more than one-third of all apples, pears and nectarines, and more than half of all pears and plums). Similarly, India makes up most of the production in the South Asia region (with its speciality, mangoes, at 40% of total production).

Africa produced 63-million tons of fruit in 2004, roughly 13% of world production, with its main areas of focus being bananas, papayas, pineapples and dates. The SADC region produced some 11-million tons of fruit, of which the major varieties were bananas, citrus fruit, apples, grapes, peaches and nectarines.

Table 4: SADC production of fruit by country and type, 2004 ('000 tons)

	Total fruit	Citrus fruit	Bananas	Apples	Grapes	Mangoes	Peaches & nectarines	Pears	Pineapples	Total vegetables
SADC	11,059	2,289	3,555	867	1,708	511	1,114	374	526	5,200
Angola	450	78	300	-	-	-	-	-	40	271
Botswana	11	1	-	-	-	-	-	-	-	16
DRC	2,434	197	1,512	-	-	200	-	-	193	450
Lesotho	13	-	-	-	-	-	-	-	-	18
Madagascar	7	23	290	98	-	-	891	-	9	1
Malawi	511	2	293	-	-	33	-	-	-	256
Mauritius	18	0	12	-	-	-	-	-	5	73
Mozambique	335	31	90	-	-	24	-	-	13	117
Namibia	23	-	-	-	9	-	-	-	-	18
South Africa	5,486	1,717	220	763	1,683	57	222	374	157	2,349
Swaziland	111	74	1	-	-	0	-	-	32	11
Tanzania	1,335	40	752	-	14	195	-	0	78	1,192
Zambia	101	4	1	-	-	-	-	-	-	267
Zimbabwe	225	123	85	7	3	1	1	0	0	161

Source: FAOSTAT and own calculations

3.1.2 Consumption

Of course the fact that a country can produce a large output does not necessarily mean it will be a big net exporter – this depends on the size of the domestic market and whether excess produce is harvested. In the case of China, the world's largest producer of fruit, the domestic market is so large that the country exports relatively little. This is also the case for India, and similarly for South Asia, East and Southeast Asia, and Africa. China is the world's biggest market (bigger even than any other region), with 72-billion tons consumed per year, followed by India with 46-billion tons, the US (37-billion tons), Brazil (24-billion tons), Italy (14.5-billion tons), France (14-billion tons), Mexico (13-billion tons), and Germany and Spain (11-billion tons each).

Table 5: World production, trade and consumption of fruit by region and selected countries (excluding wine), 2002 ('000 tons)

	Production	Imports	Exports	Domestic supply
World	476,033,440	87,216,981	88,252,796	475,552,595
East & South East Asia	115,485,259	9,505,288	8,359,894	116,693,322
South America	69,094,847	1,403,919	22,849,527	47,653,472
Africa	62,362,989	1,179,991	4,315,368	59,280,923
European Union (15)	55,584,384	40,575,851	25,886,319	70,505,025
South Asia	54,321,699	614,100	705,254	54,230,548
North America (NAFTA)	44,900,426	19,015,128	9,633,378	54,337,255
Middle East	32,229,973	2,848,353	4,547,769	30,357,168
Rest of Europe	17,397,362	9,881,233	4,065,776	23,515,133
Oceania	6,375,241	813,331	1,236,847	5,954,498
Caribbean	5,015,536	273,549	498,236	4,820,283
SADC	11,422,981	329,655	2,517,920	9,256,507
Selected countries				
China	72,006,173	3,003,184	2,970,143	72,044,693
Japan	3,860,200	4,304,252	27,286	8,137,166
India	45,951,300	247,164	365,161	45,833,302
US	30,298,031	14,354,336	7,672,977	37,016,062
Russian Federation	3,600,380	3,841,265	79,900	7,361,745
France	10,662,250	6,000,634	2,474,933	14,188,581
Germany	4,782,848	9,857,972	3,134,037	11,391,764
Italy	16,052,264	2,423,230	3,931,720	14,573,774
Spain	15,623,259	1,232,560	6,210,934	11,056,098
UK	294,890	6,095,188	275,999	6,114,079
Belgium	570,850	4,455,985	4,422,495	856,557
Brazil	35,734,479	326,871	11,529,615	24,531,735
Mexico	13,939,571	788,989	1,497,991	13,230,869

Source: FAOSTAT and own calculations

The region with the most trade, both in imports and exports, is clearly the EU, followed by North America (NAFTA), the rest of Europe (those not in the EU), and East and South East Asia. Whilst countries like China, India, Brazil and Mexico supply their domestic markets predominantly through their own (local) producers, other countries like Germany, the UK, Japan and Russia must import most of their fruit from abroad. There are some countries that act as distributing hubs, such as Belgium, which imports roughly 4.5-billion tons of fruit a year but exports roughly the same amount, distributing it into the European market. Similarly, Italy and Spain, although also being major producers, act as distributors for the European market.

Table 6: SADC production, trade and consumption of fruit (excluding wine), 2002 ('000 tons)

	Production	Imports	Exports	Domestic supply
SADC region	11,422,981	329,655	2,517,920	9,256,507
Angola	450,000	19,596	0	469,596
Botswana	10,600	53,114	45	63,669
DRC	2,480,438	2,374	0	2,482,812
Lesotho	13,000	17,788	0	30,788
Madagascar	890,600	2,475	17,438	875,638
Malawi	511,400	7,181	4	518,577
Mauritius	10,277	37,120	1,048	46,349
Mozambique	291,500	51,456	3,108	339,848
Namibia	19,864	30,900	8,684	48,342
Seychelles	2,475	5,002	25	6,252
South Africa	4,975,447	19,701	2,319,671	2,687,477
Swaziland	109,600	40,422	83,347	66,675
Tanzania	1,333,500	6,180	6,968	1,334,312
Zambia	101,200	29,329	304	130,225
Zimbabwe	223,080	7,017	77,278	155,947

Source: FAOSTAT and own calculations

The SADC region consumes nearly 78% of its fruit produce domestically, and imports about 4% of the fruit it consumes. In the region, the biggest markets are South Africa (2.7-billion tons of fruit a year), the Democratic Republic of Congo (2.5-billion tons), Tanzania (1.3-billion tons) and Madagascar (0.9-billion tons). South Africa is by far the biggest producer and exporter in the region.

3.1.3 Food consumption patterns and trends

Food markets are constantly evolving, driven not only by changes in consumer preferences but also by technology, linkages between members of the food supply chains, and prevailing policies and business environments. A primary driving force in the global food market is the consumer. Income growth, lifestyle changes brought about by urbanisation and changing family structures have resulted in diet changes among consumers worldwide. Because of increases in purchasing power or the increased opportunity cost of time required for preparing food, the demand for higher value and processed food products has expanded globally.

But although consumer diets are being upgraded worldwide, food purchase patterns vary across countries based on income levels. Consumers in developing countries whose diets were traditionally high in low-value, carbohydrate-rich cereals have increased their consumption of higher value meats, fruits and vegetables. Consumers in wealthier countries are increasingly changing their diets toward relatively higher

value foods, although this higher value does not reflect increases in the quantity and nutrient value of the food basket but rather the value-added service embodied in the products, which reduces the time required to prepare such foods for consumption.

As such, developing countries are registering rapid increases in the retail sales of high-value foods (and the number of supermarkets and other retail chains are increasing), whilst developed countries are seeing a rise in sales of products that meet consumer demands for variety, food safety and quality.

To meet these increasingly varied needs, multinational food retailers and manufacturers are expanding their presence in developing countries, and food retailers and suppliers are adding value and differentiating their products in developed countries (existing supermarkets are expanding their product selection, whilst food companies create new brand names, premium quality or convenience products).

These ongoing changes are driving food supply chains to adopt closer co-ordination between producers and retailers to facilitate the customisation of products to meet consumer demands. However, as the food industry is becoming more global, food markets are increasingly responding to consumer preferences at a local level and catering to specific demands in each market. Thus being able to supply a specific market and compete successfully in that market require in-depth knowledge of conditions and consumer habits, as well as complex models that can project future growth and preference changes. All in all, the existence of minor players becomes less likely, as efficiency, competition, massive marketing and research overheads and various barriers to entry favour bigger (multinational) companies.

Trends in the larger developed countries

As the composition of countries' populations change, so do the composition of their families and the make-up of their households. This in turn affects eating habits and the size and characteristics of consumer markets for food suppliers. To this end, a number of trends have emerged over the past decade.

First is the increased interest in the consumption of health food – products that are low in fat, sugar and salt and have health-promoting properties, such as vitamins and minerals.

Second is the rapidly growing attraction to organically produced foods, especially in first-world markets such as the EU. People are becoming more concerned with genetically modified products, the chemicals (pesticides, fertilisers, fungicides and hormones) used to enhance the growth of certain food products and the perceived safety of many of these products (mad cow disease, salmonella, etc.). There is also an increased awareness of diet and nutrition, and the effects that certain

types of farming might have on the environment. Linked to this is the idea of fair-trade products (prevalent in the EU) and consumers' social conscience about where these products come from, which includes who works as labour in their production, whether such labourers are paid a decent wage and are treated fairly, etc.

The third important trend is social accountability, which includes issues such as food safety, traceability, management practices, codes of standards and the sustainable use of natural resources, along with environment-friendly production techniques. Again this is particularly important in the EU and if not dealt with can form a significant barrier to trade and market access.

The fourth trend is that of convenience. As people work more and have busier social lives, the time for food preparation and consumption is reduced. The demand for easy to prepare, semi-prepared, catered (including restaurants and fast-food) and processed products is thus increased. In terms of distribution, convenience also means a move away from traditional fresh fruit markets to supermarkets. This is especially true for countries that might be experiencing rapid urbanisation or rapid increases in per capita income, for example, China. However, convenience is not only about saving time, but also about saving on wastage – especially important for smaller households. This could include smaller (more manageable) portions or products that do not lose its freshness quickly, such as preserved fruits/fruit products, vacuum-packed goods, etc.

The fifth trend is that markets are becoming more open to a greater variety of produce. Consumers want choice. In temperate regions, this means more tropical and exotic fruits, which also has a big impact on the seasonality of produce: better modes of transport allow countries with counter-seasonality to supply these markets during off-seasons.

Trends in the larger developing countries

Many developing countries are experiencing rapid urbanisation and the increasing participation in the economy of many previously 'economically inactive' people. This brings with it a whole host of complicated interacting consequences on food consumption, whose endogeneity is not always easily understood. For example, increased levels of income can have different effects on the consumption of fruit. It can lead to people 'eating out' more (leading to more fast-food outlets), which will reduce the amount of fruit consumed. But it can also lead to better dietary knowledge (perhaps through better access to education or other forms of information, for example, the internet), which could lead to a higher consumption of fruit. Another income effect might be the increased demand for a variety of food groups; in the case of fruit, this could increase the amount of fruit consumed as people experi-

ment with exotic fruits from other parts of the world, or it could result in decreased fruit consumption through some type of substitution effect as people replace fruit (which might be a traditional dish) with other food products. The effects therefore depend on individual and country-specific circumstances.

Generally, however, urbanisation, the changing structure of households, greater labour participation (and longer working hours) should lead to increased consumption of convenience goods – and this could include fruit as a relatively easy meal requiring little preparation time. At the same time, with the increase in the number of refrigerators in households, the sale of perishable products should continue to increase; again this can benefit the sale of certain more perishable fruit products. Urbanisation also brings with it a decreased reliance on self-grown foods (as is the case in China) and increased purchases from retail stores. This results in increased consumption of processed and packaged goods, as well as increased opportunities for international trade.

3.2 Europe

3.2.1 The European Union

It seems that the EU market for fresh fruit in the original 15 countries is beginning to reach levels of saturation. The commodity has historically been income inelastic, which means that the volume of the commodity purchased does not necessarily increase at the same rate as income levels. Thus fruit as a proportion of an individual or household's income has declined. However, more recently, the growth in fruit consumption has been driven by lifestyle changes and new-found health consciousness. This is particularly true for organic produce, which has experienced phenomenal growth rates over the past few years (especially in the wealthier countries of the original 15 EU members).

In terms of fresh fruit (excluding processed and dried/preserved fruit), the Mediterranean countries seem to have, on average, a slightly higher per capita consumption. The leading countries, out of the original 15 EU members in 2003, were Spain with 90.6 kg per capita per year, Belgium (81.6 kg/capita), Italy (71.6 kg/capita), the Netherlands (68.6 kg/capita), Germany (60.2 kg/capita), Finland (58.4 kg/capita), the UK (55.2 kg/capita) and France (29.2 kg/capita).

The new accession countries have relatively high per capita consumption of fresh fruit compared to the original 15 EU countries. The leading countries in this group are Cyprus, with 177.3 kg per capita per year, Czech Republic (74.5 kg/capita), Slovenia (68.8 kg/capita), Poland (64.4 kg/capita) and Hungary (41.6 kg/capita). Table 7 shows some selected countries' fruit consumption, in the latest possible year, per mass or value, depending on data availability.

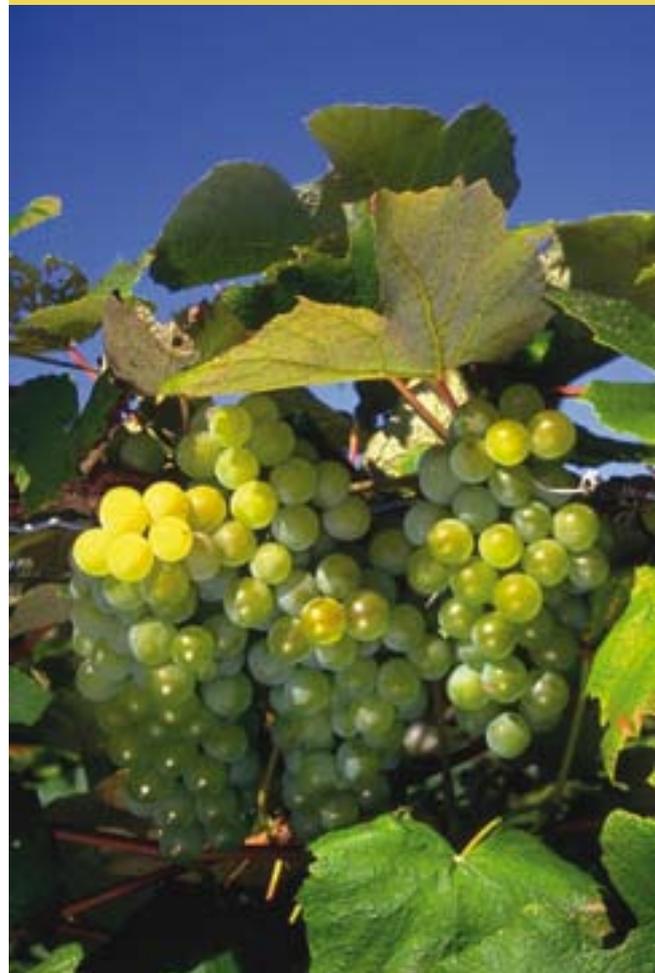


Table 7: EU consumption of fruit in latest available year

Selected countries	Year	Value (€-million)	Volume ('000 tons)
Germany	2002/03		5,131
France	2003	3,242	1,774
UK	2002/03		2,478
Spain	2004	4,709	3,918
Italy	2004	6,219	4,528
The Netherlands	2002		653
Belgium	2003	1,521	848

Source: CBI (Centre for the Promotion of Imports from Developing Countries)

Segmentation of the market can occur along four different lines: product classification, the end-user market, whether the produce was organically grown and according to socio-economic factors.

The end-user market can be divided into three segments: the consumer market (retail shops, supermarkets and grocery stores), the out-of-home market (restaurants, canteens and fast-food chains) and the industrial sector. The out-of-home segment is expected to experience the most growth because of the ageing population, more single households and less home cooking, and higher levels of prosperity. The industrial sector normally processes fruit into products such as canned fruit, baby food, juices and purees, and ready-to-cook products. The quality levels are generally lower and the volumes bought and sold higher.

In terms of socio-economic factors, one can broadly divide the EU market into two categories – countries in the northern and western regions, and those in the south. The southern EU members (mainly the Mediterranean countries) tend to consider fresh fruit as an essential part of their diets, and as such are not likely to change their spending habits (or the quantity of fruit they consume) when factors such as price or income levels change. They also tend to spend more time when purchasing fruit (at markets) and preparing it. Consumers in the northern and western regions are more time-constrained and prefer convenience above all – hence supermarkets, retail outlets, fast-food chains and products that are sliced, pre-packaged and even pre-peeled.

The key trends in the European market are as follows:

- An ageing population, which leads to a bigger out-of-house market;
- Increased demand for variety (especially exotics), out-of-season produce and ingredients for ethnic minority group foods;
- Smaller households and increased demand for convenience, smaller portions, 'mini products' and more time-friendly products (pre-processed, pre-cooked, take-out, etc);
- Increased demand for organic produce; and
- Health foods.

Table 8 shows the most popular fruits in a few selected countries, by thousands of tons sold.

Table 8: EU consumption of fruit by variety, 2002 ('000 tons)

Type of fruit	Germany	Spain	France	United Kingdom	The Netherlands
Apples	1,454	487	350	534	175
Bananas	921	409	-	648	102
Oranges	538	859	-	192	157
Watermelons	-	665	-	126	21
Pears	211	308	92	132	35
Mandarin/Clementine/Tangerine	344	229	-	-	57
Peaches	279	208	140	-	-
Grapes	269	96	-	156	18
Strawberries	253	103	50	-	14
Lemons	132	93	-	-	-
Cherries	85	44	75	-	-
Prunes	82	62	39	-	-
Kiwi fruit	-	117	35	-	17
Apricots	39	-	47	-	-
Grapefruit	59	-	-	-	15
Pineapples	-	29	-	-	-
Other citrus	-	-	-	288	-
Stone fruit	-	-	-	222	-
Others	465	209	946	168	44

Source: CBI

3.3 North America

Rising income, higher educational attainment, improved diet and health knowledge, a growing population that is becoming older and more diverse in race and ethnicity, and people 'eating out' more frequently are changing the consumption patterns of the US population. As these patterns change, so does the demand for fruit, whether fresh, processed, dried or preserved. There are a number of emerging trends.

The first important trend is the current focus on health. This is partly due to increased levels of education, but also to government and other institutions' promotion of healthy eating habits. Consumers are more aware of their health and therefore likely to consume more fruit.

The second major factor is increased levels of income, which, as explained before, can have both positive and negative effects on the consumption of fruit. Increased income could lead to increased dietary knowledge and increased fruit consumption, or it could lead to more 'eating out' and less fruit consumption.

Table 9: US consumption of selected fruit (fresh weight equivalent tons), 1996 - 2004

Year	Apples	Grapes	Peaches	Pears	Pine-apples	Straw-berries	Oranges & temples	Tangerines & tangelos	Grapefruit	Lemons	Limes
1996	5,626	5,229	1,118	862	1,496	671	10,932	413	2,099	835	173
1997	5,530	6,388	1,310	942	1,492	631	10,811	556	2,299	854	201
1998	5,886	5,530	1,187	958	1,358	636	11,995	454	1,949	721	203
1999	5,922	5,744	1,277	1,026	1,643	719	10,686	440	1,833	709	195
2000	5,720	6,346	1,309	954	1,597	790	11,505	570	1,682	807	241
2001	5,578	5,789	1,239	1,008	1,565	745	11,970	506	1,693	1,055	264
2002	5,595	6,648	1,331	895	1,705	783	10,057	502	1,512	888	190
2003	6,095	6,222	1,276	936	1,855	910	10,888	507	1,325	1,134	312
2004*	6,639	6,428	1,304	899	1,675	916	11,001	489	1,323	884	345

*Preliminary

Source: Economic Research Service, US Department of Agriculture (USDA)

Table 10: US consumption of fruit by processed state (fresh weight equivalent tons), 1996 - 2004

Year	Total	Fresh	Total ¹	Canned	Juice	Frozen ²	Dried
1996	34,427.1	15,350.0	19,077.1	2,240.1	14,925.9	535.7	1,347.5
1997	35,909.9	15,938.2	19,971.7	2,463.5	15,669.8	458.5	1,297.9
1998	35,438.4	16,048.7	19,389.8	2,115.9	15,201.2	529.9	1,499.2
1999	36,673.7	16,313.2	20,360.5	2,420.0	16,012.7	595.8	1,274.2
2000	36,482.7	16,275.7	20,207.0	2,228.3	16,044.3	548.9	1,326.9
2001	35,404.9	16,155.3	19,249.6	2,266.3	14,709.4	899.5	1,315.4
2002	35,195.5	16,480.4	18,715.2	2,172.5	14,521.7	605.4	1,355.8
2003	36,049.4	16,615.7	19,433.7	2,248.8	15,212.8	595.1	1,316.6

¹Includes apples used for vinegar, wine, and fresh slices for pie making. ²Includes miscellaneous berries and other fruits.

Source: USDA Economic Research Service

Linked to this is the third and perhaps most important trend: the increased demand for convenience. Higher levels of income or higher wage rates might induce people to work longer hours, but this would mean less leisure time (or time for household production) and therefore a higher opportunity cost for time.

This results in demand for food which is convenient and time-saving, and because this is especially true for the higher income brackets, it is likely to result in people being prepared to pay a premium for convenient foods, and in firms wanting to supply these higher value (and presumably higher profit) products.

Related to the above three factors is the changing demographics of the US population. Like most developed countries, certain sections of the US population are ageing (whites), and household structures are changing. There are more single households (especially female-headed households), fewer conventional nuclear families and more households where both partners are working.

Table 11: Direct and indirect income effects on per capita consumption of fruit and vegetables in the US

Commodity	Total income effect	Direct income effect	Indirect income effect	
			Eating out	Knowledge
Fruit				
Citrus	1.70	1.85	-1.77	1.83
Apples	1.93	1.95	-1.81	1.81
Grapes	1.23	1.21	-1.42	1.48
Other fruit	1.48	1.36	-1.22	1.36
Vegetables				
Fried potatoes & chips	0.19	-0.47	1.75	-1.08
Other potatoes	-1.86	-2.53	0.49	0.19
Tomatoes	0.86	0.76	-0.01	0.11
Lettuce	2.12	1.42	0.18	0.50
Other vegetables	0.65	0.63	-0.46	0.47

Source: USDA

This changing structure of households is expected to decrease the time available for food preparation and thus increase fruit consumption while decreasing the consumption of many vegetables, as generally, fruits are less time intensive (see table 11).

Other factors expected to influence the amount of fruit consumed in the future is the increasing diversity of the US population in terms of ethnicity, greater levels of urbanisation and the migration of people to different regions within the US. Table 12 shows the predicted effects of these various factors.

Whilst all these factors affect the per capita consumption of fruit, the size of the market will also continue to grow as the population grows (the US population is estimated to grow by 50-million people by 2020). The upshot of this is that fruit consumption in the US is expected to grow significantly in the projected future.

(For more information on consumption patterns of fruit by type of fruit, region, age, race, ethnicity, income and education level, visit the USDA website at www.ers.usda.gov/briefing/consumption)

Table 12: Effects on growth of fruit and vegetable consumption in the US, 2000 - 2020 (%)

Commodity	Market growth	Per capita effects							
		Net	Income	Age	Region	Urbanisation	Race	Household type	Education
Fruit									
Citrus	26.68	7.40	1.87	0.48	-0.62	0.45	2.48	0.61	2.13
Apples	27.20	7.84	1.93	0.95	-0.55	0.47	2.42	0.47	2.14
Grapes	24.00	5.13	1.23	0.59	-0.45	0.40	1.35	0.31	1.69
Other Fruit	26.21	7.00	1.48	1.96	0.06	0.50	1.33	0.06	1.61
Vegetables									
Fried potatoes & chips	7.81	-8.60	0.19	-5.76	0.06	-0.33	-1.72	-0.21	-0.82
Other potatoes	14.45	-2.97	-1.86	3.18	-0.76	-0.50	-2.19	-0.94	0.12
Tomatoes	19.43	1.25	0.86	-0.75	0.11	0.08	0.88	-0.10	0.18
Lettuce	23.96	5.09	2.12	0.68	0.10	0.26	0.37	0.84	0.71
Other vegetables	22.21	3.61	0.65	1.34	-0.04	0.14	0.54	0.41	0.57

Source: USDA

3.4 Asia

3.4.1 China

The Chinese economy is roughly growing at a rapid 7% to 8% annually, and there have been rapid improvements in living standards and striking changes in consumption habits. This economic growth boosts Chinese consumer incomes and their purchasing power, and therefore their demand for food. While the population growth rate slows (less than 1% annually) and per capita income rises (6% real annual growth in urban areas), food spending is growing (although at a slower rate than the rise in income).

The composition of food demand is also changing as demand for meat, poultry, fish, fresh fruit and vegetables and other high-value products grows faster than for staples such as rice, wheat and traditional vegetables. After decades of limited consumption choices, China's emerging middle class is acquiring a taste for convenience and high-value foods, such as instant noodles, baked goods, exotic fruits, dairy products, fast food and processed foods.

The food processing and food retail sectors have also grown and developed rapidly, which reflects increased demand for convenience and quality. Chinese consumers are beginning to visit restaurants more frequently, travel more and demand foods with specific attributes. At the same time, consumer awareness of environmental protection, food safety and health issues is emerging, as well as a demand for 'green food', organic produce and sanitation standards.

Currently most of China's food is supplied domestically by a large, low-tech, labour-intensive farm sector. Whether this sector will

Table 13: Production, trade and consumption of fruit in China, 2002

Commodity	2002 ('000 tons)				Annual growth, 1997 - 2002 (%)		
	Production	Imports	Exports	Domestic supply	Production	Imports	Supply
Apples	19,250,650	331,028	1,438,870	18,144,236	2.8	6.4	1.3
Oranges, mandarins	10,982,681	543,321	293,969	11,232,033	3.6	6.1	3.9
Bananas	5,783,521	410,617	45,642	6,148,496	16.9	-9.6	14.3
Grapes	4,563,972	259,777	98,351	4,725,398	21.2	7.3	20.5
Pineapples	1,346,280	28,419	64,171	1,310,528	12.9	-14.2	11.5
Citrus, other	760,222	4,316	18,032	750,457	7.9	3.2	7.8
Lemons, limes	380,568	30,990	6,718	404,841	-	13.3	12.6
Grapefruit	336,224	53,121	14,096	375,249	-	-5.8	2.9
Dates	130,000	10,201	801	139,400	-	4.6	33.3
Fruits, other	28,472,055	1,331,394	989,494	28,814,056	10.0	10.6	10.4

Source: FAOSTAT and own calculations

be able to adapt and make the required adjustments in input use and product mix to meet the country's growing and shifting food needs remains to be seen. At present there are some 306-million agricultural labourers and roughly 300-million hectares of cropland area, or about one labourer to a hectare (compared to the US which has some 430-million hectares with approximately 140 labourers per hectare).

The Chinese farm sector thus encompasses over 200-million small-scale household operations using virtually no machinery and a great deal of labour. Most Chinese farmers are predominantly subsistence farmers that grow rice, wheat or corn on small plots of land, maintain a vegetable patch or raise a few head of livestock/chickens. Only occasionally do these small farmers grow cash crops such as cotton, rapeseed, peanuts, tobacco, or indeed fruit. However, this is likely to change in the near future, with the present structure giving away to more commercialised farms. Already production is beginning to shift in order to supply the growing Chinese urban population and their food demands.

Because fruit uses relatively less land and more labour than other agricultural products and because China has relatively limited agricultural land resources (considering its population size), fruits may show a comparative advantage – and thus China could become a major exporter of certain fruits. Although it is limited by its climate and its lack of water, China could become an export source for tropical and off-season fruits, especially as the growing middle-income class becomes wealthier and the economy liberalises and starts to rely more on market forces.

3.4.2 Japan

Japan's food consumption patterns, although sharing many similarities with the Western developed countries, also has many of its own characteristics. On average, they eat less than other first-world countries in terms of caloric intake; however, they tend to spend more on food, both as a proportion of their budget and in absolute amounts. This reflects the high food prices in Japan, due mainly to government agricultural support systems including price supports and high tariffs, and a demand for a variety of high-quality foods that constitute a healthy diet.

For most Japanese workers, the working day and commuting times are very long, and as such convenience snacks (and stores) are extremely popular, with many stores staying open 24 hours a day. Recent regulatory changes allow for larger retail outlets and for longer operating hours, which has seen growth in the Japanese supermarket industry. In terms of production, Japan has many small, privately owned farms, with the majority being on relatively small patches of land (on average 2.18 hectares). These small farms employ some 2.4-million individuals, the majority of whom are over 60. Economies of scale are therefore not likely to exist. As a result, Japanese companies are increasingly contracting outside of the country for various horticultural supplies, whilst the previous system of wholesale markets is rapidly being replaced by supply contracts with individual farmers or groups of farmers.

In terms of consumption, total fruit and nut consumption in wholesale value was approximately \$14bn in 2000, or 41.5kg per capita. The leading fruits by wholesale value are mandarin oranges, strawberries, apples, bananas, grapes, watermelons, pears, peaches and persimmons. Unfortunately the statistics vary between the Japanese Ministry for Agriculture, Fishing and Forestry (MAFF) and the FAO in terms of imports and exports. Table 14 shows the wholesale volumes and values

Table 14: Production of fruit in Japan (wholesale), 2004

Commodity (2004)	Wholesale volume (tons)	Wholesale price (US\$/kg)	Wholesale value (US\$m)	Annual growth in volume, price and value (2000 - 2004 (%))		
				Annual growth in volume	Change in price	Annual growth in value
Mandarin oranges	953	1.79	1,703	-3.8	-1.9	-4.3
Summer oranges	69	1.30	90	-5.5	22.7	-0.6
Apples	634	2.31	1,462	-2.1	3.7	-1.3
Japanese pears	222	2.40	533	-8.1	-0.2	-8.1
Persimmons	175	2.31	405	-6.1	36.8	1.5
Peaches	106	4.15	441	-5.1	7.0	-3.4
Grapes	127	5.80	735	-4.0	-2.3	-4.6
Strawberries	183	8.91	1,631	-2.5	-12.1	-5.6
Watermelons	443	1.49	660	-6.3	7.8	-4.5
Bananas	721	1.17	841	-4.4	16.7	-0.6
Lemons	72	1.82	131	-3.7	-12.9	-6.9
Total	4,961	2.42	11,988	-4.1	4.3	-3.1

Source: Japanese Ministry for Agriculture, Fishing and Forestry (MAFF)

Table 15: Production, trade and consumption of fruit in Japan, 2002 (metric tons)

Commodity	2002				Annual growth, 1997 - 2002 (%)		
	Production	Imports	Exports	Domestic supply	Production	Imports	Supply
Apples	925,800	1,426,027	12,272	2,339,555	-1.7	18.2	8.0
Oranges, mandarins	1,236,000	549,747	6,307	1,779,440	-7.5	-1.5	-5.9
Bananas	500	936,272	155	936,617	2.3	27.2	1.4
Grapefruit	0	506,714	860	505,854	-	33.9	9.1
Grapes	231,700	180,477	145	412,032	-2.0	214.7	0.2
Citrus, other	202,000	111,159	207	312,952	-7.9	-7.4	2.6
Pineapples	12,700	197,568	8	210,260	-3.6	13.2	6.1
Lemons, limes	0	94,724	0	94,724	-	236.1	-5.8
Dates	0	886	0	886	-	-75.4	4.5
Fruits, other	1,251,500	300,679	7,334	1,544,846	-1.1	-23.7	0.1

Source: FAOSTAT and own calculations

from MAFF and Table 15 the FAO's figures on imports, exports, production and total domestic consumption (supply). According to statistics from MAFF, Japan imports hardly any fruit from the rest of the world; however, according to the FAO (and verified by cross-reference to UN ComTRADE), Japan indeed imports quite a substantial amount of fruit from the rest of the world. This variance in the data could demonstrate differences in where the data is collected from – the MAFF data is collected only from wholesale markets. It could also fail to include data from large retailing companies sourcing their produce from around the world. Nevertheless, it is clear that while growth in the domestic market might be slowing down somewhat, imports continue to rise, both in absolute terms and as a proportion of total consumption. Japanese production, in contrast, is declining in the face of globalising markets and cheaper imports from abroad. Currently Japan's fruit production is limited by its climate, which allows for the production of apples, pears and mandarin oranges, but does not support the production of bananas and other tropical fruits, such as pineapples.

3.5 Africa

Although not much data is available on the size of the current or potential market for fruit in Africa, it is certainly a market that could in the future become important for fruit producers in the SADC region. Currently most of the produce is supplied domestically, and includes many 'traditional' fruits that are consumed as part of a 'traditional' meal. For example, plantains (a relative of bananas) show high levels of consumption and form part of the staple diet in many African countries. However, as Africa begins to grow and expand economically and as incomes rise, along with increase labour force participation and urbanisation, one could expect that the amount of fruit consumed and the amount spent on purchasing fruit will rise, particularly in the case of processed fruits, where most of the growth is likely to occur.

4. International trade in fruit: import markets

4.1 World trends

4.1.1 Major importing regions

Table 16: World imports of fruit by importing region 1996 - 2004

Region	1997 (US\$'000)	2004 (US\$'000)	Annual growth 1997 - 2004 (%)	Annual growth 2000 - 2004 (%)	Annual growth 2003 - 2004 (%)	Market share (%)
World	28,116,198	39,981,212	5.2	9.5	8.8	100.0
EU (15)	15,875,095	21,967,984	4.7	12.6	9.9	54.9
EU (10)	838,204	1,609,523	9.8	16.2	21.7	4.0
EU total	16,713,299	23,577,506	5.0	12.8	10.6	59.0
NAFTA (North America)	4,752,809	7,277,444	6.3	6.1	5.2	18.2
East Asia	3,086,747	3,885,436	3.3	3.0	10.0	9.7
South America	702,851	419,487	-7.1	-6.7	18.9	1.0
Africa	59,659	280,619	24.8	37.5	7.9	0.7
Middle East	3,279	183,922	77.8	-30.7	-69.5	0.5
SAARC* (Central Asia)	60,618	175,762	16.4	25.1	18.2	0.4
Central America	53,413	116,630	11.8	-0.7	-9.8	0.3
CARICOM**	10,067	11,966	2.5	-26.3	-45.8	0.0
SADC	34,345	50,250	5.6	-0.7	20.2	0.1

* South Asian Association for Regional Co-operation ** Caribbean Community (and Common Market)

Source: International Trade Centre (ITC) ComTRADE

World imports of fruit in 2004 was roughly \$40bn, with growth in this cluster of about 9.5% between 2000 and 2004, and 5.2% between 1997 and 2004. By far the greatest importing region was the EU, accounting for nearly 60% of all imports of fruit in 2004, or some \$23.6bn. Of that, the original 15 member countries (Western Europe) accounted for nearly 55% (\$22bn). The second largest market for fruit exports was North America (NAFTA), with \$7.2bn worth of imports in 2004, or 18.2% of the world fruit export market. The third and only other significant market was East Asia, with \$3.8bn or 9.7% of the market.

Whilst these three regions dominate world imports of fruit, it is interesting to note which regions are experiencing growth that is faster than the world average. Most noticeable are the EU accession members (Eastern Europe), which are experiencing rapidly liberalising trade regimes. Their imports of fruit have increased by 16% a year on average from 2000, and by nearly 22% in the year leading up to the 2004 figures. The second region that has demonstrated rapid growth is Africa, with an average annual growth of 37.5% per year between 2000 and 2004, with countries like Algeria growing by some 367% per annum (2000 - 2004), Tunisia by 49.5%, Madagascar by 53%, Zambia by 49% and Senegal by 28% (admittedly off a low base). The third region exhibiting high growth is Central Asia (SAARC), which on average has grown by 25% per year from 2000 to 2004. This is due to the

rapid liberalisation of the trade regimes of many of the countries in this region (and the introduction of the SAARC trading bloc), with Pakistan, Sri Lanka and India all experiencing rapid growth in fruit imports. At the same time, there has been a decrease in imports from regions such as South America, Middle East and the Caribbean as these countries start specialising in the production of various fruits and consequently start supplying their own domestic markets.

4.1.2 Major importing nations

Table 17: Top importers of fruit by country, 2004 (US\$'000)

Rank	Country	2004	2003	2000	Annual growth 2000 - 2004 (%)	Annual growth 2003 - 2004 (%)	Market share (%)
	World	39,981,212	36,732,745	27,844,665	9.5	8.8	100.0
1	US	5,055,546	4,841,919	4,054,293	5.7	4.4	12.6
2	Germany	4,879,120	4,722,372	3,343,902	9.9	3.3	12.2
3	UK	3,638,099	3,130,130	2,426,758	10.7	16.2	9.1
4	France	3,155,607	2,756,692	1,900,598	13.5	14.5	7.9
5	Belgium	2,729,123	2,284,888	1,471,638	16.7	19.4	6.8
6	The Netherlands	2,050,933	2,035,284	1,326,629	11.5	0.8	5.1
7	Japan	1,955,811	1,778,392	1,862,234	1.7	12.2	5.0
8	Canada	1,786,778	1,616,341	1,285,144	8.6	10.5	4.5
9	Italy	1,613,466	1,570,672	979,694	13.3	2.7	4.0
10	Russian Federation	1,529,362	1,106,033	611,038	25.8	38.3	3.8
11	Spain	950,653	859,109	473,818	19.0	10.7	2.4
12	Sweden	719,709	625,969	431,622	13.6	15.0	1.8
13	Hong Kong, China	711,458	753,574	773,024	-2.1	-5.6	1.8
14	Poland	643,623	549,013	410,422	11.9	17.2	1.6
15	Switzerland	596,235	569,077	416,473	9.4	4.8	1.5
16	Austria	532,781	482,865	364,349	10.0	10.3	1.3
17	China	510,152	414,566	347,454	10.1	23.1	1.3
18	Portugal	444,894	408,699	263,074	14.0	8.9	1.1
19	Mexico	435,119	459,090	407,356	1.7	-5.2	1.1
20	Denmar	433,047	383,563	239,607	15.9	12.9	1.1
21	Korea, Rep	372,233	307,151	196,573	17.3	21.2	0.9
22	Norway	352,640	322,334	204,370	14.6	9.4	0.9
23	Czech Republic	332,175	264,864	166,638	18.8	25.4	0.8
24	Finland	300,300	273,998	184,042	13.0	9.8	0.8
25	Taiwan	295,781	272,547	272,007	2.1	8.5	0.7
26	Greece	242,347	191,936	98,518	25.2	26.3	0.6
27	Singapore	240,570	245,625	260,284	-1.9	-2.1	0.6
28	Ireland	216,728	203,674	141,422	11.3	6.4	0.5
29	Indonesia	213,169	187,515	138,669	11.3	13.7	0.5
30	Australia	185,995	143,051	122,423	11.0	30.0	0.5

Source: UN Conference on Trade and Development (UNCTAD) World Integrated Trade Solution (WITS) and own calculations

The top 30 importing countries in 2004 are listed in table 17, along with their market shares and average annual growth rates. The leading importer of fruit in 2004 was the US, with just over \$5bn worth of imports, or roughly 12.6% of the world market and 70% of the North American market (including Canada and Mexico, which also fall within the top 30). Of the remaining countries in the top 30, no less than 15 are members of the EU, including Germany, the UK, France, Belgium and the Netherlands. Japan is 7th at just under \$2bn and is one of five East Asian countries in the top 30, along with China, Hong Kong, Taiwan and Korea. In terms of growth in imports, the East Asian countries are for the most growing very slowly (with the exception of China and Korea). The North American countries are also growing relatively slowly, but most European countries are rapidly increasing their imports of fruits (although much of this increase is in intra-EU trade). Another country that is rapidly developing into a large market is Russia, which is currently the 10th biggest market in the world at \$1.5bn worth of imports and growing at 25% per year.

4.1.3 Major imported varieties

As shown in table 18, bananas account for 20% of world trade in fruit (\$7.8bn), followed by grapes (and raisins) with 12% (\$4.7bn), apples with 10% (\$4bn) and oranges with 8% (\$3.1bn). The most noticeable growth between 2000 and 2004 was for pineapples (21.5% average annual growth from 2000 to 2004), apples, oranges and avocados (all at 13%), kiwi fruit (15%) and various types of berries (strawberries, cranberries, bilberries, raspberries, blackberries, mulberries, etc.). From 1996 to 2000, a period of slow overall growth (world growth was 1.3% per annum), trade in some products grew remarkably quickly: guavas and mangoes grew at 11%, avocados at 10.3% and berries in the cranberry family at 16.6%. Over the entire period, the products that grew the fastest were pineapples, avocados, raspberries (including blackberries) and cranberries.

Fruit varieties that have shown slower growth rates over the past four years include bananas (6.8%), grapefruit (4.8%), guavas and mangoes (6.4%), prunes (6%), coconuts (1.2%) and currants and gooseberries (-7.4%). However, slower (or even declining) growth rates might not necessarily indicate declining demand for a product, but could instead reflect changing preferences for consumption (fresh or processed), and/or the levels of processing a product undergoes before being exported. Bulky products such as coconuts might be processed further to increase value-to-volume ratios before being exported (for example, canned coconut milk), whilst fruits such as guavas and mangoes might be used predominantly for fruit juices and less for fresh consumption.

4.1.4 Major world exporters of fruit

Table 19 shows that Spain is the biggest exporter of fruit in the world, exporting over \$5bn a year and accounting for 12.5% of the world export market. Second is the US with 8%, followed by Chile (7.2%), Ecuador (5.4%) and Italy (5.3%). South Africa is the seventh-largest exporter in the world, the only significant exporter in Africa, and

Table 18: World imports by variety and region, 2004

Rank	Product name	Imports of fruit (US\$m)					World annual growth (%)			Market share %
		EU	NAFTA	East Asia	Russia	World	96-00	00-04	96-04	
1	Bananas and plantains	4,515	1,539	798	360	7,887	-0.1	6.8	3.3	20.1
2	Grapes	2,472	1,326	351	176	4,780	4.9	8.1	6.5	12.2
3	Apples	2,628	499	183	238	4,058	-0.9	13.3	6.0	10.3
4	Oranges	2,030	202	410	155	3,148	-2.5	13.0	5.0	8.0
5	Mandarins, tangerines, satsuma	1,595	234	32	104	2,133	-2.5	9.5	3.4	5.4
6	Melons & papayas	1,004	575	104	48	1,849	3.3	7.8	5.5	4.7
7	Edible preserved fruit	1,168	325	199	13	1,817	3.1	10.8	6.8	4.6
8	Pears & quinces	942	210	34	104	1,469	3.2	10.1	6.6	3.7
9	Pineapples	859	333	112	13	1,366	9.1	21.5	15.2	3.5
10	Kiwi fruit	893	71	240	22	1,312	3.1	15.4	9.1	3.3
11	Peaches & nectarines	891	178	50	46	1,263	0.5	9.0	4.7	3.2
12	Strawberries	853	232	46	7	1,203	-1.1	12.8	5.6	3.1
13	Lemons	693	195	135	68	1,173	1.0	10.2	5.5	3.0
18	Plums, prunes & sloes	464	114	86	36	787	3.7	8.5	6.1	2.0
14	Grapefruit	383	32	271	16	734	-3.2	4.8	0.7	1.9
15	Guavas, mangoes	291	240	125	2	714	10.9	6.4	8.6	1.8
16	Avocados	363	214	61	1	694	10.3	13.3	11.8	1.8
17	Cherries	314	71	174	30	627	4.6	11.9	8.2	1.6
19	Apricots	295	67	6	26	458	1.2	8.8	5.0	1.2
20	Dates	161	18	8	8	343	1.2	11.6	6.3	0.9
21	Cranberries, bilberries	90	180	24	0	301	16.6	21.1	18.9	0.8
25	Other fruit	100	89	55	3	277	0.4	14.2	7.1	0.7
23	Raspberries, blackberries, mulberries	139	107	10	0	263	8.7	25.1	16.6	0.7
24	Coconuts	107	58	15	6	255	2.4	1.2	1.8	0.6
26	Figs	128	19	15	2	192	1.7	8.0	4.8	0.5
27	Inedible preserved fruit	71	16	44	1	147	-7.9	-4.2	-6.1	0.4
28	Currants & gooseberries	32	0	0	0	34	15.3	-7.4	3.4	0.1
29	Peel of citrus fruit or melons	20	7	5	0	34	-0.7	4.2	1.7	0.1

Source: UNCTAD WITS and own calculations

accounts for 4.5% of the world market. Whilst Chile, Ecuador, Costa Rica, Mexico and Colombia all export large amounts of fruit to the North American markets, predominantly the US, South Africa is a far bigger player in the European markets (and interestingly in Japan). Spain, Italy and the other European countries export predominantly to the EU market, as does Turkey and New Zealand. An important difference between various countries is in the particular product mix that they export. For example, whilst South Africa exports oranges (and other citrus), grapes, apples, pears, peaches and avocados, South and Central American countries predominantly export bananas and to a lesser extent pineapples. The exception is Chile, which, as South Africa, exports a wide variety of fruits. On the other hand, European countries tend to export more temperate fruit products such as apples, pears, grapes, strawberries and other berries, while those along the Mediterranean export citrus fruits and watermelons. More than half of Spain's exports, for example, are citrus fruits.



South Africa and other developing countries in SADC therefore have greatest potential in accessing the European market, as they are better situated than their South and Central American counterparts and have counter-cyclical seasons for the harvesting of fruit.

South Africa's climate enables the country to produce temperate fruits as well as sub-tropical varieties, especially citrus. This and the timing of the harvest season has allowed South Africa to supply temperate and citrus fruits to European countries during those seasons when there is a lull in European (and northern hemisphere) production.

Other SADC countries with similar climates and seasonality, such as Zimbabwe, Lesotho, Swaziland and Tanzania (highlands) may be able to replicate South Africa's success in temperate fruit exports, whilst even more potential lies in the export of sub-tropical and tropical fruits for the entire region. At the same time, as tariffs (and hopefully) non-tariff barriers become less onerous, SADC countries can start competing directly with European suppliers as production costs in Europe continue to rise.

Table 19: Top exporters of fruit by country, 2004

Rank	Country	2004 (US\$'000)	Annual growth 2000- 2004 (%)	Annual growth 2003- 2004 (%)	Market share (%)
	World	39,981,212	9.5	8.8	100.0
1	Spain	5,009,328	11.6	4.2	12.5
2	US	3,181,818	2.0	5.0	8.0
3	Chile	2,879,020	11.7	15.3	7.2
4	Ecuador	2,160,863	8.3	9.5	5.4
5	Italy	2,119,511	6.9	-3.1	5.3
6	Costa Rica	2,048,511	11.1	8.0	5.1
7	South Africa	1,800,922	14.0	9.1	4.5
8	France	1,366,828	7.1	2.3	3.4
9	Mexico	1,363,370	9.7	13.7	3.4
10	New Zealand	1,165,799	11.0	18.2	2.9
11	Netherlands	1,158,054	15.7	21.5	2.9
12	Colombia	1,131,699	7.8	16.7	2.8
13	Turkey	1,076,587	13.0	26.0	2.7
14	Argentina	1,016,571	15.6	8.6	2.5
15	Philippines	1,009,968	5.7	4.3	2.5
16	Belgium	825,885	11.6	14.6	2.1
17	Germany	701,836	28.3	31.7	1.8
18	Brazil	690,037	21.1	14.0	1.7
19	China	687,145	10.3	2.7	1.7
20	Greece	571,212	8.5	18.7	1.4

Source: UNCTAD WITS and own calculations

4.1.5 The top importing countries of the EU

Table 20: EU imports of fruit by country, 2004

Rank	Country	Imports (US\$'000)	Annual growth 2000-2004 (%)	Annual growth 2003-2004 (%)	Share (%)
	EU 15	22,285,672	13.0	11.5	93.26
	EU 10	1,609,523	16.2	21.7	6.74
	EU total	23,895,195	13.2	12.1	100.00
1	Germany	5,188,813	11.6	9.9	21.71
2	UK	3,638,099	10.7	16.2	15.23
3	France	3,155,607	13.5	14.5	13.21
4	Belgium	2,729,123	16.7	19.4	11.42
5	The Netherlands	2,050,933	11.5	0.8	8.58
6	Italy	1,621,462	13.4	3.2	6.79
7	Spain	950,653	19.0	10.7	3.98
8	Sweden	719,709	13.6	15.0	3.01
9	Poland	643,623	11.9	17.2	2.69
10	Austria	532,781	10.0	10.3	2.23
11	Portugal	444,894	14.0	8.9	1.86
12	Denmark	433,047	15.9	12.9	1.81
13	Czech Republic	332,175	18.8	25.4	1.39
14	Finland	300,300	13.0	9.6	1.26
15	Greece	242,347	25.2	26.3	1.01
16	Ireland	216,728	11.3	6.4	0.91
17	Hungary	164,563	35.7	30.6	0.69
18	Slovak Republic	124,766	20.6	44.5	0.52
19	Lithuania	98,585	15.1	6.0	0.41
20	Slovenia	92,214	16.5	20.6	0.39
21	Latvia	66,002	11.0	19.5	0.28
22	Luxembourg	61,177	14.6	5.9	0.26
23	Estonia	50,848	18.4	18.2	0.21
24	Malta	22,014	7.7	6.5	0.09
25	Cyprus	14,733	24.7	81.5	0.06

Source: UNCTAD WITS and own calculations

The European market for fruit is particularly important for prospective exporters, as it accounts for nearly 60% of world trade. Overall trade in fruit in the EU has increased by some 13% between 2000 and 2004, with the new accession countries recording a higher growth rate (16.2%) than the original 15 member states. However, the original member states account for over 93% of all fruit imports in the region, with Germany at 21% of the EU market, the UK at 15%, France at 13%, Belgium at 11%, the Netherlands at 8.5% and Italy at 7% being the biggest importers. All the EU countries had healthy growth rates in the double figures (except Malta) from 2000 to 2004, with Hungary, Greece, Slovakia and Cyprus experiencing the fastest growth.

4.1.6 Products exported to the EU

Table 21: Fruit exports to the EU by variety, 2004

Fruit imports (US\$m)	EU 15				EU 10			EU 25	
	Germany	UK	France	Total	Poland	Czech	Total	Total	Share (%)
Bananas & plaintains	890	570	254	4,140	124	95	374	4,515	19.2
Apples	610	561	173	2,557	7	18	72	2,628	11.2
Grapes	562	611	217	2,259	97	47	213	2,472	10.5
Oranges	381	218	395	1,854	74	32	176	2,030	8.6
Mandarins, tangerines	300	275	313	1,402	91	34	192	1,595	6.8
Edible preserved fruit	367	96	191	1,111	22	12	57	1,168	5.0
Melons & Papaya	172	165	166	940	25	12	63	1,004	4.3
Pears & quinces	179	157	125	915	4	3	26	942	4.0
Pineapples	164	46	67	840	26	9	53	893	3.8
Kiwi fruit	254	117	137	810	40	15	81	891	3.8
Peaches & nectarines	96	67	126	843	3	5	16	859	3.7
Strawberries	193	138	217	833	2	8	20	853	3.6
Lemons	105	73	104	581	71	13	112	693	2.9
Grapefruit	56	49	82	342	23	7	41	383	1.6
Plums & sloes	28	50	164	358	1	1	4	363	1.5
Apricots	102	58	13	308	0	0	6	314	1.3
Guavas & mangoes	39	79	31	300	1	3	8	309	1.3
Avocados	84	48	39	276	6	4	19	295	1.3
Cherries	43	43	64	286	1	2	5	291	1.2
Dates	19	27	51	155	1	1	5	161	0.7
Figs	40	19	4	140	7	2	15	155	0.7
Other fruit	18	44	25	138	0	0	1	139	0.6
Cranberries (vaccinium)	29	11	30	120	2	2	9	128	0.5
Coconuts	19	14	9	94	7	2	13	107	0.5

Source: UNCTAD WITS and own calculations

The leading export to the EU is bananas, accounting for just under one-fifth of all fruit exports in 2004. The second most imported product was apples (11.2%), followed by grapes (10.5%), oranges (8.6%) mandarins and tangerines (6.8%) and various forms of edible pre-cooked and preserved fruit (5%). Different countries within the EU import their fruit produce from different locations, with these sources often dependent on past colonial relations. Bananas, the most important export to the EU from a developing country perspective, is a good example of how different countries access different markets. Germany and Belgium were the top importers of bananas during the period under review (although Belgium re-exports most of its imports to the Netherlands and other countries), followed by Italy and the UK. Whilst Germany tends to import bananas from Ecuador, Costa Rica and Panama, France tends to import them from Cote d'Ivoire and Cameroon. The UK imports bananas mainly from Cameroon and Costa Rica but also from Belize and the various Caribbean islands. Italy imports predominantly from Ecuador, whilst Belgium imports from Colombia. The Netherlands imports almost all of its bananas from other European countries (Belgium and Germany). The new accession countries import bananas from most of

the South American countries, but also from other European countries like Belgium, Germany, Czech Republic and Italy.

Most products are sourced from only a few countries. Citrus fruit, for example, are imported predominantly from Spain (56%), South Africa (8.5%), Argentina (6%) and Morocco (4%). Dried apricots mainly come from Turkey; avocados from Israel, South Africa and Spain; mangoes from Brazil and Peru, as well as South Africa, Cote d'Ivoire and Israel to a lesser extent; kiwi fruit from Italy and New Zealand; watermelons from Spain and Brazil; pineapples from Costa Rica and Cote d'Ivoire; and strawberries from Spain, Morocco, the Netherlands and Poland. Other products such as apples and pears are sourced from many different countries – Italy, France, Argentina, Brazil, South Africa, China, New Zealand and even the US. South Africa is currently the leading exporter of grapes. The country exported some US\$418m worth of produce to the EU in 2004.

4.1.7 Top exporting countries to the EU

As can be seen from table 22, the biggest exporting countries to the European market are from Europe itself, with Spain leading the way with nearly 20% of the market, followed by Italy with 7.7%. Intra-EU trade in fruit accounts for nearly 50% of all fruit imports; however, growth in im-

Table 22: Leading exporters of fruit to the EU, 2004

Rank	Country	Total value of exports 2004 (US\$'000)			Annual growth 2000-2004 (%)			Share (%)
		EU 15	EU 10	Total	EU 15	EU 10	Total	
	World	21,967,984	1,609,523	23,577,506	12.6	16.2	12.8	100.0
1	Spain	4,243,236	345,055	4,588,291	12.1	15.9	12.4	19.5
2	Italy	1,581,012	235,277	1,816,288	6.1	10.9	6.7	7.7
3	South Africa	1,313,076	39,467	1,352,543	15.9	17.0	15.9	5.7
4	Costa Rica	1,210,464	63,695	1,274,159	19.0	40.7	19.8	5.4
5	France	1,167,167	17,893	1,185,060	6.5	26.9	6.8	5.0
6	The Netherlands	1,020,943	66,320	1,087,263	15.3	16.0	15.3	4.6
7	Ecuador	845,543	104,522	950,064	19.2	-2.6	15.5	4.0
8	Chile	838,731	31,419	870,150	20.9	48.1	21.5	3.7
9	Colombia	732,555	70,393	802,948	15.5	18.9	15.8	3.4
10	Belgium	746,666	20,504	767,170	10.3	25.2	10.6	3.3
11	Turkey	703,899	55,030	758,929	11.8	24.2	12.5	3.2
12	Argentina	666,253	32,320	698,573	18.2	25.5	18.5	3.0
13	Germany	629,079	41,196	670,275	28.2	32.9	28.5	2.8
14	New Zealand	667,033	2,756	669,788	14.8	9.8	14.7	2.8
15	Brazil	576,822	12,970	589,793	24.7	52.9	25.1	2.5
16	Panama	399,273	48,943	448,217	10.6	39.4	12.5	1.9
17	Greece	334,915	107,128	442,043	7.2	12.0	8.3	1.9
18	Cote d'Ivoire	427,314	11,663	438,978	9.7	31.9	10.1	1.9
19	Morocco	380,283	18,052	398,335	15.8	12.3	15.6	1.7
20	US	372,768	12,118	384,886	3.4	6.3	3.5	1.6

Source: UNCTAD WITS and own calculations

ports from EU members is slower than the growth from non-EU members, reflecting a change in import patterns towards non-EU member countries, including SADC countries. If one removes intra-EU trade, South Africa is the leading supplier of fruit to the EU, with nearly 6% of the total EU market and 11% of all imports from outside the EU. Its main non-EU competitors are Costa Rica, Ecuador, Chile, Colombia, Turkey and Argentina. However, South Africa produces and exports a much wider variety of fruits than any of its developing country competitors, and many of the products that it exports already compete with European producers. At the same time its export share has been growing at the expense of many European countries. Again, this is a positive sign for SADC countries hoping to enter the fruit export market to the EU.

Table 23: Leading exporters of fruit to the EU (from countries outside of the EU), 2004

Rank	Country	Total value of exports (US\$ '000)			Annual growth 2000-2004 (%)			Share (%)
		EU 15	EU 10	Total	EU 15	EU 10	Total	
	World	21,967,984	1,609,523	23,577,506	12.6	16.2	12.8	100.0
	Intra- EU	10,510,216	968,287	11,478,503	10.8	16.3	11.2	48.7
1	South Africa	1,313,076	39,467	1,352,543	15.9	17.0	15.9	5.7
2	Costa Rica	1,210,464	63,695	1,274,159	19.0	40.7	19.8	5.4
3	Ecuador	845,543	104,522	950,064	19.2	-2.6	15.5	4.0
4	Chile	838,731	31,419	870,150	20.9	48.1	21.5	3.7
5	Colombia	732,555	70,393	802,948	15.5	18.9	15.8	3.4
6	Turkey	703,899	55,030	758,929	11.8	24.2	12.5	3.2
7	Argentina	666,253	32,320	698,573	18.2	25.5	18.5	3.0
8	New Zealand	667,033	2,756	669,788	14.8	9.8	14.7	2.8
9	Brazil	576,822	12,970	589,793	24.7	52.9	25.1	2.5
10	Panama	399,273	48,943	448,217	10.6	39.4	12.5	1.9

Source: UNCTAD WITS and own calculations

4.2 The NAFTA region

4.2.1 Exports from and imports to the region

The NAFTA region is a major producer, exporter and importer of fruits and vegetables. Since most tariffs and quantitative restrictions in horticultural products between the US, Canada and Mexico have been eliminated in a phase-out period from 1998 to 2003, the North American region has seen a large increase in the amount of trade in fruits and vegetables. In terms of exports, most of Mexico and Canada's exports of fruit are destined for the US market (roughly 75% for Mexico and 65% for Canada), whilst the US remains, despite recent declining growth trends, one of the world's biggest exporters of fruit (2nd to Spain). Presently roughly one-third of its annual \$3bn worth of fruit exports is intra-NAFTA trade (predominantly to Canada, at 30%), 40% is destined for East Asia (20% to Japan) and 13% goes to the EU. The US's exports are mainly grapes, melons, strawberries, apples, oranges and grapefruit, with the former five varieties predominantly traded with Canada and other tropical regions, and the latter two with East Asia and the EU. Mexico, which exports most of its produce to either the US or

Canada, exports predominantly melons, mangoes, grapes, avocados, strawberries, limes and bananas.

Table 24 illustrates the major sources of imports for the North American market. As a country, the US is the world's biggest importer of fruit (at \$5bn or 12.6% of the world market), and as region, North America (NAFTA) is the world's second biggest importer of fruit (at \$7.2bn or 18.2% of total world imports of fruit). Needless to say it is an important destination for any exporting country looking to become a world player. Import growth has been rather slow (lower than the world average) over the period 2000 to 2004. Mexico has shown low growth in imports but rather rapid growth in exports, indicating increased production levels and the ability to supply its own domestic market along with other export markets. Despite imports only growing at 5.7% per annum from 2000 to 2004, it is expected that the US domestic market will grow by about 25% by 2020 in volume terms (and even higher in value terms). From 1993 to 2003, the US experienced only moderate growth of 14.6% (1.4% compounded per annum). Better growth was experienced over the period 1983 to 1993, at 18.6% or 2.2% annually. At the same time, import penetration ratios are increasing, as supply is shifting to overseas production.

Intra-NAFTA trade accounts for about 35% of all imports in the region, with the US the biggest source of imports into Canada and Mexico, and the primary destination for Canadian and Mexican exports (Mexico is the second largest source of imports to the US). The US imports grapes and melons from Mexico, and apples from Canada. The

Table 24: NAFTA imports of fruit, 2004

Rank	Country	Total value of imports (US\$'000)				Annual growth 00-04 (%)				Share (%)
		US	Mexico	Canada	Combined	US	Mexico	Canada	Total	
	World	5,055,546	435,119	1,786,778	7,277,444	5.7	1.7	8.6	6.1	100.0
1	Chile	1,188,563	135,092	183,578	1,507,233	9.6	7.7	17.0	10.2	20.7
2	US	-	269,006	924,753	1,193,760	-	-2.1	8.2	5.4	16.4
3	Mexico	1,025,017	-	108,863	1,133,879	9.8	-	9.4	9.7	15.6
4	Costa Rica	566,155	212	104,188	670,555	-1.9	14.8	12.9	-0.2	9.2
5	Guatemala	431,999	-	45,687	477,686	8.2	-	34.9	9.8	6.6
6	Ecuador	363,925	795	40,968	405,688	0.4	4.7	-4.2	-0.1	5.6
7	Honduras	238,130	2	21,738	259,870	12.3	-	33.2	13.5	3.6
8	Colombia	194,284	-	50,418	244,702	-7.5	-	8.2	-5.1	3.4
9	Canada	196,404	10,481	-	206,885	14.2	21.5	-	14.6	2.8
10	New Zealand	111,254	1,732	18,803	131,789	3.4	8.0	-0.4	2.9	1.8
11	Spain	114,090	877	15,319	130,287	-6.8	177.1	-8.0	-6.8	1.8
12	South Africa	63,021	26	52,173	115,220	12.3	-	3.1	7.6	1.6
13	Argentina	55,612	11,734	19,270	86,617	-4.7	39.2	-2.5	-1.5	1.2
14	China	51,348	542	31,583	83,473	53.0	30.2	11.5	29.1	1.1
15	Philippines	52,150	297	9,774	62,221	2.5	-8.6	8.0	3.2	0.9
16	Turkey	47,187	1,002	9,918	58,108	8.4	1.6	1.2	6.8	0.8
17	Thailand	36,094	1,490	14,681	52,265	10.4	4.8	3.1	7.9	0.7
18	Peru	42,783	1,173	7,409	51,366	25.0	5.7	42.7	26.2	0.7
19	Australia	39,873	-	7,354	47,226	-1.3	-100	21.6	1.0	0.6
20	Brazil	35,460	-	11,630	47,089	6.6	-100	13.9	8.2	0.6

Source: UNCTAD WITS and own calculations

region also imports a large proportion of its fruit from Central and South American countries, particularly from Chile, which is by far the most important supplying nation to NAFTA, claiming a massive 20.7% of the entire market. Chile is to the North American market what South Africa is to the European market – its fruit harvest season complements that of the North American harvest seasons, enabling it to supply off-season temperate fruits, as well as more tropical products. It has also signed a free trade agreement and thus benefits from low tariffs during the US winter season. Imports from Chile consist of grapes (60% of total NAFTA imports), apples (36%), avocados (30%), peaches (62%) and various berries.

Other Central and South American countries that are important to the North American market supply mainly bananas, North America's largest imported fruit variety. The leading countries supplying bananas are Guatemala (24% of NAFTA imports), Ecuador (23%), Costa Rica (22%), Colombia (15.5%) and Honduras (12%). These countries' proximity and climatic conditions make their position unassailable for would-be competing countries from Africa which also produce bananas.

Grapes are the second-biggest imported commodity and are supplied by Chile (60%), Mexico (18.5%) and the US (16.6%). South Africa exports grapes worth \$23m to the NAFTA market, or roughly 2% of the market share. Melons and papaya, the third most imported fruit commodities, come predominantly from Mexico (67%). Pineapples come from Costa Rica and Mexico.

Table 25: NAFTA imports of fruit by variety, 2004 (US\$'000)

Rank	Product name	US	Canada	Mexico	Total	Share (%)
1	Bananas & plantains	1,357,933	181,273	13	1,539,218	21.5
2	Grapes	893,713	325,848	106,867	1,326,428	18.5
3	Melons & papaya	434,626	133,816	6,314	574,756	8.0
4	Apples	228,996	131,407	139,032	499,436	7.0
5	Pineapples	266,630	66,046	440	333,116	4.7
6	Preserved edible fruit	243,065	73,873	8,514	325,452	4.5
7	Various Berries	222,688	63,430	288	286,406	4.0
8	Guavas, mangoes	202,577	35,824	1,844	240,246	3.4
9	Mandarins, tangerines	140,661	92,322	839	233,822	3.3
10	Strawberries	75,394	141,886	14,353	231,633	3.2
11	Avocados	188,838	24,416	292	213,546	3.0
12	Pears & quinces	80,443	61,815	67,632	209,890	2.9
13	Oranges	69,916	127,707	4,304	201,927	2.8
14	Lemons	162,497	32,498	433	195,428	2.7
15	Peaches & nectarines	84,895	63,849	29,249	177,994	2.5
16	Other fruit	72,418	10,362	3,382	86,161	1.2
17	Plums & sloes	42,183	28,832	11,079	82,095	1.1
18	Cherries	22,931	46,424	2,049	71,403	1.0
19	Kiwi fruit	41,877	20,362	8,623	70,862	1.0
20	Apricots	49,865	12,475	4,326	66,665	0.9
21	Coconuts	49,965	7,984	227	58,177	0.8
22	Prunes	6,912	10,305	14,841	32,058	0.4
23	Grapefruit	1,708	29,213	989	31,910	0.4
24	Dates	7,810	10,112	352	18,274	0.3

Source: UNCTAD WITS and own calculations

It is interesting to note that although the US has a strong history of citrus exports, South Africa has recently entered the market and has grown its share remarkably. It now supplies 26% of imported oranges and 9% of imported mandarins. Its competitors are Australia and the US for oranges and Australia, China, Morocco and Spain for mandarins (they currently supply over 50% of the market). Grapefruit is another traditional stronghold of US producers where South African exports, with a 7.6% growth rate, are currently performing well. Despite the US's African Growth and Opportunity Act (AGOA), Morocco is the only other African country with any significant export penetration into the North American markets.

4.3 East Asia

East Asia is an important region for fruit exporters, both because of existing markets (predominantly Japan) and because of those that are emerging rapidly (like China and Korea). Table 26 illustrates this point, with total imports of fruit amounting to nearly \$4bn in 2004, Japan's market at just under \$2bn, and China and Korea growing at 10% and 17% respectively from 2000 to 2004. The leading suppliers to this region have historically been the US and other countries in close proximity, such as the Philippines, Thailand, China and New Zealand.

But there are changes looming on the horizon, evidenced, for example, by South Africa's remarkable growth in most of the East Asian markets. Whilst the US and the Philippines slowly lose some of their market share and China begins to consume more and more of its own produce, countries like Thailand, Chile, South Africa and Mexico are stepping in.

Deemed as particularly important by most is the rapidly emerging Chinese fruit market, where increased incomes, a shift from traditional foods, greater levels of trade (brought on by China's emergence as an economic powerhouse and its joining of the World Trade Organisation (WTO) and lagging production techniques (and lack of commercialisation) spell great opportunities for those prepared to supply the fruits that are in demand and set up distribution and/or marketing networks (often with Chinese partners).

In short, to enter the Chinese market, one requires a quality product and a large, co-ordinated investment, but one can anticipate great returns almost immediately, hence the fact that the more developed economies are beginning to expand their exports to China. However, much of the competitive advantage that exporters might have at present is based on low capital availability and (partly as a result of this) inferior quality products, as well as limited use of marketing techniques (production and packaging) and industry-wide standards.

Thus, whilst demand for fruit is expected to continue to increase at a rapid pace for an indefinite period, the real question is whether Chinese producers will respond to these market signals and increase both the production of those varieties in short domestic supply and the quality of their produce. Already many farmers have changed from producing more traditional crops to fruit production in response to higher price incentives, and many foreign (generally larger) companies have

Table 26: Fruit exports to East Asia by country, 2004

Rank	Country	Total value of exports 2004 (US\$m)						Annual growth 2000-2004 (%)						Market share (%)
		Japan	China	HK	Taiwan	Korea	Total	Japan	China	HK	Taiwan	Korea	Total	
	World	1,996	510	711	296	372	3,885	1.7	10.1	-2.1	2.1	17.3	3.0	100.0
1	US	662	88	228	148	157	1,282	-2.1	19.9	-1.3	-3.9	20.5	0.6	33.0
2	Philippines	603	85	52	0	113	852	7.1	3.2	1.6	-38.7	7.6	6.4	21.9
3	Thailand	16	181	115	23	2	337	16.2	30.9	-2.0	-6.6	0.7	10.3	8.7
4	New Zealand	165	30	14	26	40	274	8.1	8.7	-13.5	11.3	51.0	9.4	7.1
5	Chile	63	56	59	34	16	228	10.2	35.6	-1.5	24.4	9.6	11.5	5.9
6	China	87	-	58	7	26	178	-7.1	-	-5.3	9.0	27.4	-3.5	4.6
7	South Africa	70	3	47	5	5	129	17.2	76.7	9.8	39.5	34.7	15.6	3.3
8	Mexico	115	0	3	-	0	118	11.3	-	24.6	-100	-51.7	11.5	3.0
9	Australia	20	1	56	7	1	85	5.2	95.6	-6.8	-0.6	-14.0	-3.8	2.2
10	Ecuador	65	8	0	-	0	74	-12.7	-42.3	-	-	-78.9	-21.0	1.9
11	Vietnam	2	30	6	4	0	43	19.7	25.7	7.9	-3.6	11.2	16.9	1.1
12	Canada	31	3	1	4	0	40	10.0	72.0	2.9	32.4	247.4	13.5	1.0
13	Taiwan, China	25	2	12	-	1	40	-17.2	17.3	15.7	-	375.0	-10.4	1.0
14	Korea, Rep.	14	0	2	14	-	31	-13.6	20.1	-5.0	-	-	2.2	0.8
15	Malaysia	0	4	17	1	0	21	-46.0	4.7	-4.6	-31.7	5.6	-5.0	0.5

Source: UNCTAD WITS and own calculations

invested in packing houses and cold storage systems to take advantage of China's lower labour costs.

At present the largest supplier to the Chinese market is Thailand, which supplies almost all the figs, durians and \$95m worth of what is classified under 'other fruit'. The second-largest supplier is the US, exporting grapes, lemons and oranges, and surprisingly, apples (since China produces more than half of the world's apples). Third is the Philippines, which supplies the majority of China's banana imports. The only other significant exporter to China so far is Chile, which exports about \$40m worth of grapes to the country.

Hong Kong, the second-biggest market for fruit in the region, has traditionally been the focal point of China's fruit and vegetable trade, re-exporting much of its imports to China. Part of its negative growth over the last few years has to do with the fact that many of the north-eastern Chinese cities are now becoming more attractive destinations for direct exports into and out of China than via the traditional Hong Kong wholesale markets. Most of the re-exported fruit into China was shipped through what is termed the 'gray channel', and is unlikely to show up in official records. As such Chinese imports are understated.

Japan, as the world's seventh-largest importer of fruits, is an important market, even though it has experienced rather slow growth of late. At present nearly 65% of its imports come from just two countries – the

US and the Philippines – followed in importance by New Zealand (8%), Mexico (6%) and China (4%). The US supplies most of Japan's imports of cherries (98%), plums (95%), oranges (77%), grapes (75%), grapefruit (73%) and lemons (68%), and 73% of all strawberries, cranberries, raspberries and other berries.

The Philippines supplied mostly bananas (84% of the total Japanese market) and pineapples, whilst New Zealand supplied 95% of the kiwi fruit imported into Japan. Mexico supplies mainly avocados, China various preserved fruits, and South Africa has been gaining a foothold in citrus (grapefruit, oranges and lemons). South Africa and Chile have been able to gain access to the market mainly because of the fact that their harvesting seasons run counter to those of Japan and the US.

South Africa is therefore not a direct competitor with either Japan or the US, but rather with Chile. However, if South Africa can demonstrate quality standards similar to those of the US, the country may be able to compete for bigger market shares in future.

Of course, the biggest issue with regards to entry into the Japanese market is the stringent phytosanitary controls and border inspections of fruit. Tariffs, although historically very high, are becoming less important (see section 5 on market access).



Table 27: East Asia's imports of fruit by variety, 2004 (US\$'000)

Rank	Product name	Japan	China	Hong Kong	Total	Share (%)
1	Bananas & plantains	590,485	93,455	27,625	798,240	22.2
2	Oranges	101,591	36,977	129,341	410,445	11.4
3	Grapes	78,943	82,149	138,298	351,211	9.8
4	Grapefruit	257,902	1,637	5,955	271,251	7.5
5	Kiwi fruit	165,032	4,260	11,267	240,437	6.7
6	Edible preserved fruit	148,625	23,360	1,280	198,547	5.5
7	Apples	218	29,420	63,526	183,365	5.1
8	Cherries	99,426	2,352	22,164	174,029	4.8
9	Lemons	105,144	5,728	19,227	134,640	3.7
10	Guavas, mangoes	41,072	37,389	44,441	125,143	3.5
11	Pineapples	85,176	120	2,525	112,261	3.1
12	Melons & papaya	56,713	10,001	36,710	104,313	2.9
13	Avocados	58,032	-	1,534	60,720	1.7
14	Other fruit	14,038	29,243	3,892	54,748	1.5
15	Peaches & nectarines	225	281	8,343	50,327	1.4

Source: UNCTAD WITS and own calculations

4.4 Russia

Table 28: Fruit exports to Russia by exporting country, 2004 (US\$'000)

Rank	Country	Fruit imports 2004	Annual growth (%)			Market share (%)
			1997-2000	2000-2004	2003-2004	
	World	1,529,362	-12.0	25.8	38.3	100.0
1	Ecuador	329,452	19.2	20.9	34.2	21.5
2	Uzbekistan	138,417	-5.2	15.9	143.4	9.1
3	Turkey	115,249	10.0	40.8	32.1	7.5
4	Argentina	103,313	-0.1	57.1	32.6	6.8
5	Poland	99,891	-28.6	77.5	85.0	6.5
6	China	80,233	-24.6	32.8	37.1	5.2
7	Morocco	72,369	33.7	12.0	13.6	4.7
8	South Africa	58,517	-10.4	54.5	4.6	3.8
9	Moldova	51,425	-51.5	51.8	17.8	3.4
10	Kazakhstan	47,422	-4.7	1.9	40.7	3.1
11	Spain	46,716	-27.5	39.2	8.4	3.1
12	Egypt, Arab Rep.	36,067	-71.8	287.4	64.5	2.4
13	Chile	35,869	-20.4	65.6	106.9	2.3
14	Italy	33,478	-36.7	54.5	13.5	2.2
15	Belgium	29,284	-	70.2	59.1	1.9

Source: UNCTAD WITS and own calculations

Russia is the 10th biggest importer of fruit in the world and has recently experienced rapid growth in the value of imports per annum, up from \$611m in 2000 to \$1.5bn in 2004. Between 2003 and 2004, growth in fruit imports was even higher at just under 40% for the year. Russia is therefore the fastest growing 'significant-sized' fruit export market. The leading exporter to Russia in 2004 was Ecuador, accounting for 21.5% of Russia's fruit imports, followed by Uzbekistan, Turkey, Argentina and Poland. South Africa, whose market access has been growing rapidly (at a 55% per year increase between 2000 and 2004) is currently the eighth-biggest exporter to Russia.

Although Russia's growth has been dramatic over the past few years, it is rather volatile. For example, the period 1997 to 2000 saw a decrease of 12% per annum in imports of fruit. Obviously this is not desirable for exporters wishing to build long-term growth strategies.

The leading fruit import to Russia is bananas (at \$360m or 24% of total imports), followed by apples (\$238m, 16%), grapes (\$176 m, 11.5%), oranges (\$154m, 10%), pears (\$104m, 6.8%) and mandarins and tangerines (\$103m, 6.7%). Bananas come from Ecuador (91%); apples from Poland (28%), Moldova (16%) and China (15%); grapes from Uzbekistan (37%), Turkey (22%) and Iran (7%); oranges from South Africa (23%), Egypt (22%), Morocco (20%) and Turkey (14%);

pears from Argentina (26%), Belgium (22%), the Netherlands (10%) and China (10%); and mandarins from Morocco (40%), Turkey (16%) and China (15%). Swaziland and Zimbabwe have also recently begun to explore the off-season citrus market along with South Africa.

4.5 SADC's export performance

Table 29: SADC exports of fruit to major regions by country, 2004 (US\$'000)

Country	EU15	East Asia	NAFTA	EU 10	Africa	Asean	M East	SADC	World	% of SADC exports
South Africa	1,325,436	129,478	115,220	39,467	25,044	32,213	15,750	15,275	1,813,282	92.5
Madagascar	79,121	-	218	243	28	-	-	26	79,879	4.1
Zimbabwe	18,813	-	16	601	7,374	-	-	7,374	28,413	1.4
Swaziland	14,803	4,764	-	94	202	-	-	163	20,295	1.0
Namibia	14,274	-	-	254	-	9	-	-	15,242	0.8
Mauritius	2,276	-	21	-	-	2	-	-	2,495	0.1
Mozambique	706	-	-	-	449	-	-	449	1,156	0.1
Tanzania	117	-	-	23	78	-	9	1	374	0.0
Zambia	42	-	-	2	1	-	-	-	101	0.0
Congo, DRC	9	-	-	-	2	-	-	-	23	0.0
SADC region	1,455,596	134,241	115,476	40,685	33,179	32,225	15,759	23,289	1,961,268	100.0
% of SADC exports	74.2	6.8	5.9	2.1	1.7	1.6	0.8	1.2	100.0	

Source: UNCTAD WITS and own calculations

The SADC region's trade in fruit is heavily dominated by South Africa as one of the world's leading exporters of fruit. The SADC region exported \$1.96bn worth of fruit in 2004. Of this, South Africa accounted for 92.5%, or \$1.81bn. Roughly 75% of all exports from the region are destined for the EU (\$1.45bn), followed by East Asia (\$134m or 7%), and North America (\$115m or 6%). Almost all exports from SADC countries other than South Africa are sold in the EU (88%) or in Africa 5.5%.

In terms of export growth, the SADC region has seen positive per annum growth in exports to the EU 15 (15.2%), East Asia (14.9%), North America (7.7%), EU 10 (17.2%) and ASEAN (25.6%). These growth rates were almost entirely driven by South African growth, with the one noticeable exception Africa, or more precisely the SADC region. Intra-SADC trade in total has decreased, but by far less than the decrease in exports to the region from South Africa. Countries like Zimbabwe, Swaziland and Mozambique have been increasing their exports to other SADC countries.

In terms of products, South Africa exports a wide range, including significant amounts of grapes, oranges, apples, pears and quinces, grapefruit, plums, mandarins and tangerines, avocados, guavas and

Table 30: Annual growth of SADC exports to major regions 2000 - 2004 (%)

Country	EU 15	E Asia	NAFTA	EU 10	Africa	Asean	M East	SADC	World
Namibia	41.6	-	-	63.0	-	-	-	-	41.7
Mauritius	23.9	-	55.5	-	-	-	-	-	24.7
Tanzania	105.1	-	-	117	112	-	-42.8	-31.4	24.2
South Africa	16.2	15.6	7.6	17.0	-9.2	25.6	-29.8	-17.1	14.2
Madagascar	9.9	-	62.9	68.2	-41.6	-	-	-42.2	9.7
Swaziland	5.0	2.1	-	-15.5	54.4	-	-	46.2	4.7
Zimbabwe	-7.9	-	123.3	34.2	35.2	-	-	36.0	-1.3
Mozambique	-8.4	-	-	-	44.0	-	-	45.6	-5.8
Zambia	-31.0	-	-	-46.4	-14.4	-	-	-	-26.4
Congo, DRC	-57.1	-	-	-	-28.6	-	-	-	-48.5
SADC region	15.2	14.9	7.7	17.2	-4.3	25.6	-30.2	-9.6	13.7

Source: UNCTAD WITS and own calculations

mangoes, apricots, peaches and nectarines, among others. Madagascar, the second largest exporter of fruits in the region, exports predominantly 'other fruits' to France, whilst Zimbabwe and Swaziland export predominantly citrus fruits. Namibia exports grapes to Germany.

Table 31: SADC exports of fruit by variety and exporting country, 2004 (US\$'000)

Product name	SADC	SA	Mad	Zim	Swa	Nam	Mau	Moz	Tan
Grapes, fresh or dried	539,285	524,871	-	25	3	14,348	1	-	5
Oranges	417,427	384,340	-	22,695	10,211	-	-	92	77
Apples	260,751	260,723		21					
Pears & quinces	154,215	154,203	-	5	-	-	-	-	-
Grapefruit	131,379	119,973	-	1,578	8,868	339	-	615	-
Other fruit	105,045	22,961	79,715	1,434	-	-	879	-	12
Plums, prunes & sloes	84,704	84,267	-	117	-	319	1	-	-
Mandarins & tangerines	80,889	79,095	-	1,059	732	-	-	-	-
Avocados	56,535	55,268		859	408				
Lemons	49,578	49,349	-	163	65	-	-	-	1
Guavas, mangoes	18,835	18,688	-	83	-	-	6	55	1
Apricots	18,383	18,252		1			1		129
Peaches & nectarines	15,319	15,243	-	76	-	-	-	-	-
Pineapples	11,534	10,598	2	7	-	-	904	-	22
Edible preserved fruit	6,598	6,438	80	18	-	62	-	-	-
Melons & papaya	2,492	2,373	-	13	-	-	59	47	-
Other citrus	2,049	1,964	-	85	-	-	-	-	-
Dates	1,958	1,776	-	-	7	175	-	-	-
Cranberries, bilberries	1,548	1,547	-	1	-	-	-	-	-
Bananas & Plantains	1,474	234	2	220	-	-	644	340	20
Kiwifruit	1,083	1,080	-	3	-	-	-	-	-
Peel of citrus fruit or melons	361	320	-	-	-	-	-	-	41
Raspberries & other berries	216	148	-	2	-	-	-	-	66
Figs	159	159	-	-	-	-	-	-	-
Inedible preserved fruit	148	64	75	9	-	v -	1	-	-
Coconuts	111	95	5	-	-	-	-	6	-
Strawberries	97	93	-	4	-	-	-	-	-
Cherries	74	74	-	-	-	-	-	-	-
Currants & gooseberries	23	14	-	10	-	-	-	-	-
Total	1,962,272	1,814,210	79,879	28,489	20,295	15,242	2,495	1,156	374

Source: UNCTAD WITS



5. Market access

5.1 General

Barriers to trade can be divided into tariff barriers (including quotas, *ad valorem* tariffs, specific tariffs and entry price systems) and non-tariff barriers (sanitary and phytosanitary measures, labels etc). The main markets for fruit employ various measures, both tariff and non-tariff, to protect their domestic industries. Whilst many of the non-tariff measures can be justified under the auspices of issues such as health and standards, the tariff measures are increasingly under the scrutiny of the WTO, and as such are gradually being phased out. Nevertheless, exporters need to be aware of all the barriers they may encounter when trying to get their produce on foreign shelves.

Tariffs, quotas and the entry price system

Tariffs are either designed to earn a Government revenue from products being imported or to raise the price of imports so as to render local produce more competitive and protect domestic industries.

Quotas can be used to protect domestic industries from excessive imports originating from areas with some form of comparative advantage (which can therefore produce lower cost produce). Tariffs and quotas are often combined, allowing imports to enter at a certain tariff rate up to a specified quantity. Thereafter, imports from that particular region will attract higher tariffs, or will not be allowed at all.

The entry price system, which is used in many northern hemisphere markets, makes use of multiple tariff rates during different periods (seasons), stipulating higher tariffs during those periods when domestic producers are trying to sell their produce, and lower tariffs during the so-called off-seasons. Alternatively, the tariff rate can be a function of the market price – if the produce enters at a price which is too low (and therefore likely to be too competitive), it qualifies for a higher tariff schedule.

Table 32 compares tariffs across four countries/regions – China, Japan, the EU and the US – for fruit products. These tariffs are the most favoured nation (MFN) tariffs, and are generally applicable to any country that does not have a preferential trading agreement (PTA).

Of course, South Africa has a PTA with the EU, and all countries within SADC (bar Zimbabwe) have access to the US market under the AGOA, which significantly lowers tariff barriers. Certain countries in SADC are also able to access preferential tariffs into the EU under the 'Everything But Arms' preferential agreement for the Least Developed Countries (LDCs) of the world – Angola, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mozambique, Tanzania and

Zambia. This is a highly preferential agreement where the tariffs on most goods are zero.

The rest of the countries can access the EU market through the more general GSP (General System of Preferences), which was recommended by the United Nations Conference on Trade and Development (UNCTAD) in 1968, and first implemented in the EU in 1971. The current cycle of the agreement started on 1 January 2006 and will run until 31 December 2008.

Japan also has a GSP system in place, for which all of the SADC countries qualify; however, China as yet does not have any preferential agreements with any of the SADC countries. Therefore, when considering table 32, it is important to remember that it is only useful as a rough glance at the general level of tariffs that one may expect to encounter when trying to export to a particular country.

In reality, the tariffs are likely to be far lower for SADC countries when considering the preferential agreements, but at the same time, most tariff structures are particularly complex, with quotas, seasonal tariffs and specific tariffs (an amount per unit rather than a percentage of the value) all contributing to many different tariff lines and often higher duties payable than one might have anticipated initially. One must also bear in mind that most tariff are designed to protect domestic industries, and as such are likely to discriminate against those attempting to compete with the domestic producers of that country. Again, this could be seen as an advantage for SADC with its counter-seasonal harvest periods.

Table 32: MTF tariffs for selected countries and fruits, 2004

Code	Product	China	EU	Japan	US
80111	Coconuts	12.0	0.0	3.0	0.0
80300	Bananas & plantains	10.0	16.0	25.0	1.4
80410	Dates	15.0	7.7	0.0	10.4
80420	Figs	30.0	8.0	6.0	2.4
80430	Pineapples	12.0	5.8	17.0	0.3
80440	Avocados	na	5.1	3.0	7.8
80450	Guavas & mangoes	15.0	0.0	3.0	4.6
80510	Oranges	11.0	16.0	32.0	1.9
80520	Mandarins & tangerines	12.0	16.0	17.0	1.5
80540	Grapefruit	12.0	2.4	10.0	2.7
80550	Lemons	11.0	12.8	0.0	0.8
80590	Other citrus	30.0	12.8	17.0	0.8
80610	Grapes - fresh	13.0	17.6	17.0	0.0
80620	Grapes - dried	10.0	2.4	1.2	1.6
80711	Watermelons	25.0	8.8	6.0	17.0
80719	Other melons	na	8.8	6.0	29.8
80720	Papaya	25.0	0.0	2.0	5.4
80810	Apples	10.0	9.0	17.0	0.0
80820	Pears & quinces	16.0	10.4	4.8	0.1
80910	Apricots	na	20.0	na	0.1
80920	Cherries	10.0	12.0	8.5	0.0
80930	Peaches & nectarines	10.0	17.6	6.0	0.2
80940	Plums and sloes	10.0	12.0	6.0	0.3
81010	Strawberries	na	11.2	6.0	0.2
81020	Raspberries, blackberries, etc.	na	9.6	6.0	0.0
81030	Currants & gooseberries	na	9.6	6.0	0.0
81040	Cranberries, bilberries, etc.	30.0	9.6	6.0	0.0
81050	Kiwi fruit	23.3	8.8	6.4	0.0
81060	Durians	20.0	8.8	5.0	2.2
81090	Other fruit	30.0	8.8	6.0	2.2
81110	Strawberries preserved	30.0	20.8	12.0	11.2
81120	Raspberries, blackberries preserved	30.0	20.8	19.2	9.0
81190	Other preserved	30.0	20.8	47.6	14.5
81210	Cherries provisionally preserved	30.0	8.8	17.0	11.0
81290	Other provisionally preserved	30.0	12.8	32.0	11.2
81310	Dried apricots	25.0	5.6	9.0	0.3
81320	Prunes	25.0	9.6	2.4	14.0
81330	Dried apples	25.0	3.2	9.0	0.2
81340	Other dried fruit	25.0	6.4	9.0	6.8
81400	Peel of citrus fruit or melons	25.0	1.6	1.5	0.4

Source: ITC MacMAP

Notwithstanding the fact that there are limitations to an analysis from the tariff data since it is too disaggregated, one can quite clearly see that China has relatively high tariffs. Added to this is the fact that there is no preferential access to the country's markets as yet, something that is currently enjoyed in varying degrees by SADC countries for all the other markets shown in the table. Any form of preferential access would mean far lower general tariffs than those represented in table 32. One can also see that certain countries wishing to protect particular industries (presumably in which they feel vulnerable or where a large number of farmers are employed) will raise tariffs to prohibitive levels – for example, China on figs and other citrus, the EU on fresh grapes, apricots and preserved strawberries and raspberries, Japan on various preserved products, and the US on watermelons and other melons. At the same time one can also see how many developed countries try to protect those industries which require further processing (and presumably incorporate higher value added) over the more primary industries, for example, preserved over fresh fruit.

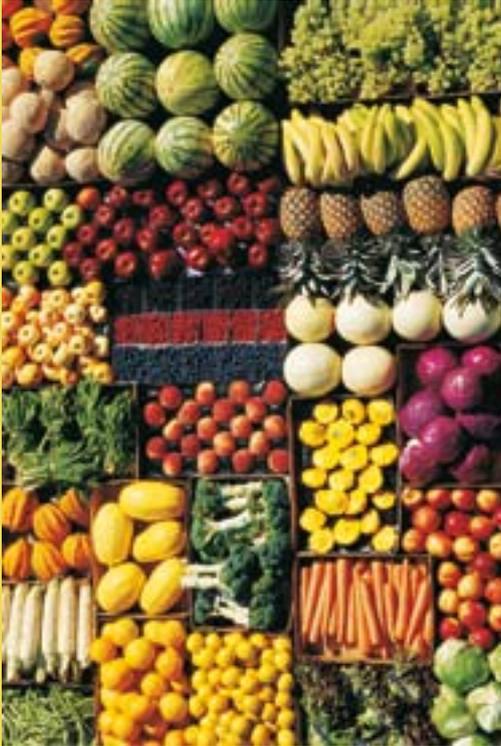
Whilst tariff regulations can be prohibitive and result in inferior market access, it is often the non-tariff barriers that restrict developing countries from successfully entering the large developed markets. Many of these barriers revolve around different types of standards, including sanitary and phytosanitary standards (SPS), food health and safety issues, food labelling and packaging, organic produce certification, quality assurance and other standards and grades.

Sanitary and phytosanitary measures

Perhaps the most important of these non-tariff barriers are the SPS requirements as laid out in the Agreement on the Application of Sanitary and Phytosanitary Measures, which took effect with the establishment of the WTO on 1 January 1995. The SPS Agreement concerns the application of food safety and animal and plant health regulations of member countries, and includes all relevant laws, decrees, regulations, requirements and production methods that are designed to:

- Protect human and animal life or health from risks arising from additives, contaminants, toxins or disease-causing organisms in food, beverage or feed;
- Protect human life and health from risks arising from diseases carried by animals, plants or products; or
- Prevent or limit damage from the entry, establishment or spread of pests.

The SPS Agreement allows countries to set their own standards, as long as they are based on sound science and applied only to the extent necessary to protect human, animal or plant life or health. Mem-



ber countries are encouraged to use international standards, guidelines and recommendations where they exist, but members may apply higher standards if there is scientific justification. They can also set higher standards based on an appropriate assessment of risks as long as these standards are not applied arbitrarily or do not unjustifiably discriminate against countries where identical or similar conditions exist.

Quality, marketing, standards and labels

Along with the standard SPS measures there are various other standards that exporters must attempt to conform to in order to supply the developed world markets, especially those of Europe, the US and Japan. In fact, often the quality of product and the presence of one of the Ecolabels signifying compliance with environmental, fair trade and other standards can be just as important a factor in determining whether one can enter a market as other traditional economic factors such as the price and a steady supply.

5.2 The European Union

5.2.1 General

The EU is a customs union whereby all countries within the union have a common external tariff for third countries. At the same time the EU implements a Common Market Organisation (CMO) structure in an attempt to stabilise and control the agricultural sector through a series of policy mechanisms and trade agreements. Thus policies and tariffs (and other trade barriers) are controlled centrally and apply to all the countries within the EU. By managing the amount of produce that enters the market, the EU hopes to be able to support and protect local farmers from sudden inflows of various fruit varieties, which would drive prices down (and presumably bankrupt or seriously injure farmers' revenues), whilst at the same time deliver enough produce to meet domestic demand adequately, and maintain prices at reasonable levels (keeping consumers happy).

The EU are able to achieve these objectives by having seasonal tariff structures which are highest during European peak harvesting seasons (the price entry system), quotas and specific tariffs, and various policies that allow, amongst other things, government organisations to purchase produce should supply rise too quickly (and thereby maintain prices), and then release this excess back onto the market as and when supply drops again. The immediate implication of these policies for SADC countries is that an opportunity exists to supply the European market in off-season periods, as the produce would not compete directly with European producers and thus would not be liable to a whole array of tariffs and other protective mechanisms. However, there

are other non-tariff barriers, including the phytosanitary and food-health regulations laid down by EU legislation, marketing standards and certificates of conformity, and the ever-changing demand patterns of the EU consumers. Europeans have recently become more focussed on the health and safety of a product, the production techniques, whether they are environmentally friendly and socially responsibly produced, and various labels that designate where and how the product was produced and to what standards it conforms. In a word, quality is the key.

The legislature that controls the fruit and vegetable sector is extensive and can be found at <http://europa.eu.int/eur-lex/lex/en/reper/036054.htm>. All the amended directives that apply to the particular fruit produce one wishes to export are listed here. One caveat, though: it can quite a task to read through all the legislature covering the products of interest. Bananas, for example, have near 100 pieces of legislature (original and updated) covering their marketing requirements, import quotas, specific tariffs, the aid given to producers from certain community members, etc.

5.2.2 The Common Agricultural Policy

Price supports

The EU Agriculture Commission determines the market policy of fruits through its common agricultural policy (CAP), which applies to all fruits and vegetables except olives, potatoes, wine grapes, bananas and sweet corn. These commodities have their own specialised policy regimes due to their sensitive nature and perceived importance in terms of employment and other political objectives. It is important that potential exporters understand the CAP structure, as it has a significant effect on agricultural market prices and therefore on agricultural markets, and is not only a part of but the main reason for the high levels of protection that exist for the EU farmers.

The CAP for fruits is implemented through various producer organisations (POs) which have contracts with local growers (members). In all there are some 1,400 POs handling over 40% of all fruit production in the EU, with some countries having much higher proportions of fruit handled by POs (Belgium and the Netherlands 70%, and France and Spain 50%) and some countries having less (Italy 30%) (Huang, 2001).

Compensation for withdrawal of produce from markets is made if prices are deemed too low by the various POs, whilst processing aid (for canning and preserving fruit) is also available to farmers to divert fresh produce away from over-supplied markets, for storage or eventual export. Because all of the production of PO members must go through the PO, it becomes easier to apply the various rules on compensa-

tion and financing, and these POs become responsible for determining prices and paying compensation, as well as ensuring that the grower adheres to good environmental practices. Produce that is withdrawn is either destroyed or distributed to institutions that would not affect EU markets, which introduces the debate on food aid, its source of supply and its effects on developing countries markets.

The withdrawal and processing compensation programmes clearly have an effect on the prices that can be fetched on the European markets for the affected produce, as well as on growers' long-term planning and whether they intend planting/harvesting more or less produce in the coming seasons. The regulatory effects are therefore seen as particularly important for maintaining the livelihoods of farmers/growers and the resultant stability (against unemployment and dissent) in these sectors. They are also seen as vital in maintaining healthy political relations between different member states, which have varying proportions of farmers in their populations, and some more successful/profitable than others. The sensitivity of these withdrawal and processing compensation funds, in terms of fruit, is due to the fact that much of the fruit is produced in the Mediterranean region where many farmers are dependant on these funds and other subsidies to remain profitable. Citrus fruits, peaches and pears are the main candidates for support, and are seen as the quid pro quo for the northern countries' receipt of funds from CAP for grains and animal products. Of course any attempt to maintain certain minimum (inflated) prices cannot succeed without strict controls on 'cheaper' foreign imports – the reason why the tariff/quota/price entry system is so prohibitive and complex.

The EU is, however, aiming at reducing some of these price supports through a ratcheting system designed to lower the threshold level of metric tons that will be supported each year or the compensation amount payable, but so far progress has been limited (this has much to do with the political problems outlined above). Processing aid in 2000 was €707m, and withdrawal funds for the same year €800m. Some of the processing thresholds and compensation amounts for 2000 are detailed in table 33 and 34. The EU Agricultural Commission undertakes to withdraw produce and compensate farmers, depending on the market price, up to the threshold level and at the rate specified. Alternatively they will pay a certain rate (per ton) to aid the farmers to process the products further and export the processed produce.

Table 33: EU national processing thresholds ('000 metric tons)

Country	Peaches	Pears	Oranges	Lemons	Mandarins
EU total	539.0	104.6	1,500.2	510.6	384.0
Greece	300.0	5.1	280.0	27.9	5.2
Spain	180.8	35.1	600.4	192.2	270.2
France	16.7	17.7	n.a.	n.a.	0.4
Italy	42.3	45.7	599.8	290.4	106.4
Portugal	0.2	0.6	20.0	n.a.	1.7

Source: Huang, 2001

Table 34: EU withdrawal and processing compensation aid (€/ton)

Withdrawals	2000	1999	Processing	2000	1999
Oranges	141.3	142.0	Pineapples	1,119.3	1,400.3
Mandarins	142.6	148.9	Peaches	41.3	61.0
Lemons	131.5	132.2	Prunes	683.9	799.8
Grapes	90.8	96.2	Figs	266.3	293.4
Apples	95.6	99.4	Grapes dried	27.9	27.9
Pears	91.0	94.6			
Peaches	124.5	131.2			

Source: Huang, 2001

Export subsidies, promotional aids and financial aids

In addition to the withdrawal and processing compensation funds allocated to the fruit industry, the EU also provides export subsidies for fresh fruits to alleviate market pressures (€25m in 2000), promotional funds for marketing of oranges and apples, restructuring funds for modernising markets and marketing structures, as well as other amounts available for those industries under pressure from international competitors (for example, EC 2517/69 deals with citrus fruits). All of these funds allow European farmers to reduce the price of their produce to compete more effectively with foreign competitors. This, in addition to the complicated tariff structure (including quotas and the price entry system) can make entering the EU market, especially during peak EU harvesting periods, prohibitively difficult. Having said this, the EU is slowly lowering its export and other subsidies in compliance with the WTO.

5.2.3 Tariff barriers

The EU makes use of tariffs and quotas, as well as a system which is known as the entry price system. In all there are thousands of lines.

The entry price system

The EU establishes an 'entry price' at which produce may enter the EU market, which is based not only on the market price for the current year (demand and supply) and for previous years, but also on the prices of domestic producers (prices they need to maintain profitability). It is calculated by the regulatory authorities so that it can be used in combination with tariffs and quotas to aid the EU's attempts at protecting its agricultural system. The entry price is thus the minimum price at which produce may enter into the market; if the price of the produce is lower than this calculated price, it is liable to have duties imposed upon it over and above any duties/quotas it might ordinarily attract. Agricultural duties are applied as follows:

- When the value of the imported party is between 92% and 94% of the entry price, 8% of the entry price will be added to the normal customs duty.
- When the value of the imported party is between 94% and 96% of the entry price, 6% of the entry price will be added to the normal customs duty.
- When the value of the imported party is between 96% and 98% of the entry price, 4% of the entry price will be added to the normal customs duty.
- When the value of the imported party is between 98% and 100% of the entry price, 2% of the entry price will be added to the normal customs duty.

The entry price system applies to apples, pears and lemons year-round and to citrus fruit, table grapes, apricots, cherries, peaches, nectarines and plums during their peak seasons. There are tariffs applicable over and above the entry price tariffs, depending on the produce, where it originates from and whether that country has any preferential trading agreements with the EU. An example of the entry price system for oranges (sweet fresh oranges of the code 0805 10 20) is shown in table 35. It differentiates between the tariffs applicable for MFN countries (those without any preferential trading agreements), Chile (a potential competitor), South Africa, ACP countries (Africa, Caribbean and Pacific) and countries classified under LDC or the 'Everything But Arms' trade concession agreement.

Table 35: Example of the EU tariff and entry price system:

Tariff on product code 0805 10 20 11 –
sweet oranges: navels, navelines, navelates, salustianas, vernas, valencia lates, maltese, shamoutis, ovalis, trovita and hamlins

Entry price categories	MFN rates	Chile rates	ACP rates	LDC rates	SA rates
If the import price is higher or equal to €35.4 / 100 kg	16%	10.20%	3.20%	0%	0% + 66.5
If the import price is higher or equal to €34.7 / 100 kg	16% + €0.7 / 100 kg	10.2% + 0.7	3.2% + 0.7	0% + 0.7	0% + 66.5
If the import price is higher or equal to €34 EUR / 100 kg	16% + €1.4 / 100 kg	10.2% + 1.4	3.2% + 1.4	0% + 1.4	0% + 66.5
If the import price is higher or equal to €33.3 / 100 kg	16% + €2.1 / 100 kg	10.2% + 2.1	3.2% + 2.1	0% + 2.1	0% + 66.5
If the import price is higher or equal to €32.6 / 100 kg	16% + €2.8 / 100 kg	10.2% + 2.8	3.2% + 2.8	0% + 2.8	0% + 66.5
If the import price is higher or equal to €0 / 100 kg	16% + €7.1 / 100 kg	10.2% + 7.1	3.2% + 7.1	0% + 7.1	0% + 66.5

Source: TARIC (The EC has developed and operates several databases in conjunction with Member States' Customs and Taxation Services, such as TARIC.)

Added to this is the quota system, which comes into effect should exports from a country exceed a certain amount. Under this system, the tariffs which are quoted, along with an entry price system (as above), are only applicable should net imports from a particular country be under a certain amount (termed the trigger amount) during the 'peak seasons'. These are termed in-quota tariffs. Out-quota tariffs (when the quota is exceeded) are at a much higher rate. Table 36 outlines the periods for the entry price system as well as the trigger amounts in tons.

Table 36: Entry price dates and trigger values for selected fruits

Taric code	Description	Entry price dates	Trigger tons
0805 10 20	Sweet oranges	1 December - 31 May	271,073
0805 20 10	Clementines	1 November - 28 February	150,169
0805 20 30 - 90	Mandarins (tangerines, etc.)	1 November - 28 February	94,492
0805 50 10	Lemons	1 June - 31 December	291,598
		1 January - 31 May	50,374
0806 10 10	Table grapes	21 July - 20 November	222,307
0808 10 80	Apples	1 July - 31 August	804,433
		1 September - 31 December	117,107
0808 20 50	Pears	1 January - 30 April	239,355
		1 July 31 December	29,158
0809 10 00	Apricots	1 June - 31 July	127,403
0809 30 10, 90	Peaches & nectarines	11 June - 30 September	982,366
0809 40 05	Plums	11 June - 30 September	54,605

Source: European Commission on Agriculture

5.2.4 Non-tariff barriers

Non-tariff barriers can be divided into those that are mandatory and laid out in the EU Commission's legislature, and those that are as a result of consumers, retailers, importers and other distributors' preferences.

Product legislation: quality and marketing

There are a number of pieces of EU legislation that govern the quality of produce that may be imported, marketed and sold within the EU.

General Food Law covers matters in procedures of food safety and hygiene (micro-biological and chemical), including provisions on the traceability of food (for example, Hazard Analysis and Critical Control Points, or HACCP), and is laid out under regulation EC 178/2002 (see http://www.europa.eu.int/comm/food/index_en.html).

EU Marketing Standards, which govern the quality and labelling of fruit, are laid out in the CAP framework, under regulation EC 2200/96 (see <http://www.defra.gov.uk/hort/hmi/common/standard.htm>). These regulations include diameter, weight and class specifications, and any produce that does not comply with these standards are not allowed to be sold on the EU markets (detailed lists of products and their standards can be found in the annexes to the directive). The legislation (under EC 1148/2001) also dictates that a *Certificate of Conformity* must

be obtained by anyone wishing to export and sell fruit in the EU, if that particular fruit falls under the jurisdiction of the EU marketing standards. Fruit to be used in further processing needs a **Certificate of Industrial Use**, whilst another legislative directive covers the **Maximum Residue Limits** (MRL) of various pesticides allowed.

Product legislation: phytosanitary regulations

The international standard for phytosanitary measures was set up by the International Plant Protection Committee (IPPC) to protect against the spreading of diseases or insects through the importation of certain agricultural goods. The EU has its own particular rules formalised under EC 2002/89, which attempts to prevent contact of EU crops with harmful organisms from elsewhere in the world. Article 13 of the directive states that:

"...member states should ensure... that plants, plant products or other objects, listed in Annex V, Part B, which come from a third country and are brought into the customs territory of the Community, shall, from the time of their entry, be subject to customs supervision pursuant to Article 37(1) of the Community Customs Code and also to supervision by the responsible official bodies... such as to conclude, as a result of these formalities and as far as can be determined:

- That the plants, plant products or other objects are not contaminated by harmful organisms listed in Annex I, Part A.
- In the case of plants or plant products listed in Annex II, Part A, that they are not contaminated by the relevant harmful organism listed in that Annex.
- In the case of plants, plant products or other objects listed in Annex IV, Part A, that they comply with the relevant special requirements indicated in that Annex.

(Directive 2002/89 of the European Union Commission)

The crux of the directive is that it authorises the Plant Protection Services to inspect a large number of fruit products upon arrival in the EU. This inspection consists of a physical examination of a consignment deemed to have a level of phytosanitary risk, identification of any harmful organisms and certification of the validity of any phytosanitary certificate covering the consignment. If the consignment does not comply with the requirements, it may not enter the EU, although certain organisms can be fumigated at the expense of the exporter. The Annexes to the Directive contain an extensive list of the various bacteria, fungi, viruses, insects and other organisms that are either banned outright (Annex I & II, Part A, for example *Liberobacter africanum*) or only to specific protected zones (Annex I & II, Part B). They also contain a list

of plants and plant products that are prohibited if they originate from certain areas/countries (Annex III) or require plant health inspections (Annex V). Fruit in Annex V requiring inspection includes all citrus fruit, kumquats, quinces, mangoes, plums, cherries, apricots, peaches, guavas, pears, cranberries, currants and gooseberries. Finally, Annex IV details special requirements that must be adhered to for various plants and plant products.

Once the consignment has been inspected, a phytosanitary certificate is authorised. It is not always necessary to inspect each and every batch – generally, phytosanitary certificates can be issued at the point of origin to facilitate the process. An acceptable phytosanitary certificate needs to include various stipulations: the origin and destination of the plant, botanical names of produce, net weight, etc. It also needs to be authorised by a plant protection services officer and issued within 14 days of leaving the country.

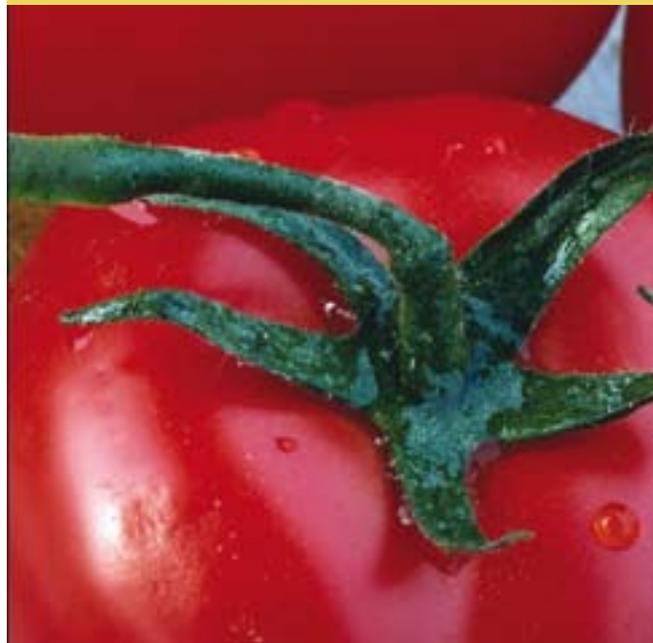
Product legislation: packaging

The EU commission lays down rules for materials that come into contact with food and which may endanger people's health or bring about an unacceptable change in the composition of the foodstuffs. The framework legislation for this is EC 1935/2004. Recycling packaging materials are also emphasised under 94/62/EC, whereby member states are required to recycle between 50% and 65% of packaging waste. If exporters do not ship produce in packaging which is reusable, they may be liable for the costs incurred by the importing companies. Wood packaging is subject to phytosanitary controls (see Directive EC 2002/89) and may need to undergo heat treatment, fumigation, etc.

Non-legal market requirements: social and environmental accountability

To access a market, importers must not only comply with the legal requirements set out above, but also with market requirements and demands. For the most part, these revolve around quality and the perceptions of European consumers about the environmental, social, health and safety aspects of both the products and the production techniques. Whilst supplying fruit that complies with these issues may not be mandatory in the legal sense, they are becoming increasingly important in Europe and cannot be ignored by existing or potential exporters.

Social accountability is becoming important in the industry, not only amongst consumers, but also for retail outlets and wholesalers. The Social Accountability 8000 (SA8000) certification is a management system based on International Labour Organisation (ILO) conventions, and deals with issues such as child labour, health and safety, and freedom of association, and requires an on-site audit to be performed



annually. The certificate is seen as necessary for accessing any European market successfully. The major retailers in the EU also play an important role in tackling environmental issues, which means that exporters have to take these into account when negotiating exporting arrangements.

Consumers are becoming increasingly aware of *environmental issues*, with consumer movements lobbying against purchasing non-environmentally friendly or non-sustainable produce. To this end, both governments and private partners have created standards (such as ISO 14001 and EUREPGAP) and labels to ensure produce adhere to particular specifications.

Although ecolabels (for example, the EU Ecolabel, the Netherlands Milieukeur, the German Blue Angel and the Scandinavian White Swan) are voluntary, they can afford an exporter a marketing edge, as consumers wishing to purchase environmentally sound produce demand products that are easily recognisable.

Labels are an absolute must for exporters attempting to enter the rapidly expanding organic produce market. The EU commission has recently adopted an EU label for identifying food produced according to EU organic standards in the directive EEC 2092/91 (see http://www.europa.eu.int/comm/food/index_en.html).

Another important emerging label is Fairtrade, and includes those labels offered by Max Havelaar Foundation, TransFair International and the FLO (Fairtrade Labelling Organisation). Recently a 'universal' logo was adopted, based on international fair trade standards developed by FLO, which covers, amongst other things, minimum quality and price, various processing requirements, compensation of small farmers that covers sustainable production and living standards, and contracts that allow for long term-planning and development (see www.fairtrade.net/sites/standards/general.html or www.maxhavelaar.nl).

Consumer health and safety requirements

Increasing consumer conscience about health and safety issues has prompted a number of safety initiatives in Europe, such as EUREPGAP on good agricultural practices (GAP) by the main European retailers (<http://www.eurep.org>), the international management system of HACCP, which is independently certified and required by legislation for European producers as well as food imported into Europe (EC 852/2004), and the ISO 9000 management standards system (for procedures and working methods), which is certified by the International Standards Organisation (ISO) (see www.iso.ch).

5.3 The United States

5.3.1 Tariff barriers

Table 37 lists the applicable tariffs on selected fruit categories entering into the US during different time periods. The first column contains the MFN rates, which are for the most part specific tariffs or tariffs that attract a duty based on the number of units or the weight of units being imported. The second column gives an approximation of what the ad valorem tariff (which is a percentage of the value of the imports) would be (the calculation is performed using actual imported values). The third column shows the tariffs applicable to SADC members.

As can be seen from the table, SADC members have completely free access to the US markets under either the general GSP, the GSP for LDCs or the AGOA. The final column can be used as a reference point to see what Chile, the main fruit supplier to the US and therefore one of SADC's main potential rivals, must pay in terms of tariff duties when exporting fruit. Bear in mind that Chile's access to the US fruit market is considered to be highly preferential under its own PTA, thus SADC's access, which is markedly lower than Chile's, is 'as good as it gets'.



Table 37: MFN and preferential tariffs on selected fruits for SADC and other countries

US code	Description of fruit, details and time frames	MFN rates		Preferential Agreement for SADC members		Preferential Agreement for Chile
		Tariff	Ad valorem equivalent	Tariff	Preferential Agreement	
8042040	Figs, fresh or dried, whole, in units weighing more than 0.5 kg each	79.00 \$/ton	3.04%	0.00%	L, A	39.00 \$/ton
8042060	Figs, fresh or dried, whole, contents 0.5 kg or less	62.00 \$/ton	2.24%	0.00%	G	0.00%
8042080	Figs, fresh or dried, other than whole (including fig paste)	88.00 \$/ton	2.44%	0.00%	L, A	44.00 \$/ton
8043020	Pineapples, fresh or dried, not reduced in size, in bulk	5.10 \$/ton	0.24%	0.00%	L, A	0.00%
8043040	Pineapples, fresh or dried, not reduced in size, in crates or other packages	11.00 \$/ton	0.51%	0.00%	L, A	0.00%
8043060	Pineapples, fresh or dried, reduced in size	4.40 \$/ton	0.13%	0.00%	L, A	0.00%
8044000	Avocados, fresh or dried	112.00 \$/ton	7.79%	0.00%	L, A	112.00 \$/ton
8045040	Guavas, mangoes, and mangosteens, fresh, September 1 through May 31	66.00 \$/ton	7.93%	0.00%	G	0.00%
8045060	Guavas, mangoes, and mangosteens, fresh, June 1 through August 31	66.00 \$/ton	4.92%	0.00%	G	0.00%
8045080	Guavas, mangoes, and mangosteens, dried	15.00 \$/ton	0.24%	0.00%	G	0.00%
8051000	Oranges, fresh or dried	19.00 \$/ton	2.54%	0.00%	A	9.00 \$/ton
8052000	Mandarins (including tangerines and satsumas); clementines, fresh or dried	19.00 \$/ton	1.75%	0.00%	G	9.00 \$/ton
8054040	Grapefruit, fresh or dried, August 1 through September 30	19.00 \$/ton	2.36%	0.00%	G	14.00 \$/ton
8054060	Grapefruit, fresh or dried, October	15.00 \$/ton	2.19%	0.00%	G	7.00 \$/ton
8054080	Grapefruit, fresh or dried, November 1 through July 31	25.00 \$/ton	3.64%	0.00%	G	20.00 \$/ton
8055020	Lemons, fresh or dried	22.00 \$/ton	0.67%	0.00%	L, A	16.00 \$/ton
8055040	Limes of the Citrus aurantifolia variety, fresh or dried	18.00 \$/ton	0.54%	0.00%	G	0.00%
8061020	Grapes, fresh, February 15 through March 31	1.13 \$/m3	0.26%	0.00%	L, A	0.00%
8061040	Grapes, fresh, April 1 through June 30	0.00%	0.00%	0.00%	M	0.00%
8061060	Grapes, fresh, July 1 through February 14	1.80 \$/m3	0.31%	0.00%	L, A	0.00%
8062010	Raisins, made from dried seedless grapes	18.00 \$/ton	1.42%	0.00%	L, A	9.00 \$/ton
8062020	Raisins, made from other than seedless grapes	28.00 \$/ton	1.52%	0.00%	L, A	14.00 \$/ton
8062090	Grapes, dried, other than raisins	35.00 \$/ton	1.86%	0.00%	L, A	26.00 \$/ton
8071130	Watermelons, fresh, December 1 to March 31	9.00%	9.00%	0.00%	G	0.00%
8071140	Watermelons, fresh, April 1 through November 30	17.00%	17.00%	0.00%	L, A	13.60%
8071910	Cantaloupes, fresh, August 1 through September 15	12.80%	12.80%	0.00%	L, A	10.20%
8071920	Cantaloupes, fresh, January 1 to July 31 or September 16 to December 31	29.80%	29.80%	0.00%	G	0.00%
8072000	Papayas (papaws), fresh	5.40%	5.40%	0.00%	G	0.00%
8081000	Apples, fresh	0.00%	0.00%	0.00%	M	0.00%
8082020	Pears and quinces, fresh, April 1 through June 30, inclusive	0.00%	0.00%	0.00%	M	0.00%
8082040	Pears and quinces, fresh, July 1 through the following March 31, inclusive	3.00 \$/ton	0.19%	0.00%	L, A	0.00%
8091000	Apricots, fresh	2.00 \$/ton	0.08%	0.00%	L, A	0.00%
8092000	Cherries, fresh	0.00%	0.00%	0.00%	M	0.00%
8093020	Peaches & nectarines, fresh, June 1 through November 30	2.00 \$/ton	0.18%	0.00%	L, A	0.00%
8093040	Peaches & nectarines, fresh, December 1 through May 31	0.00%	0.00%	0.00%	M	0.00%

Note: * L = LDC, A = AGOA, G = GSP, M = MFN

5.3.2 Non-tariff barriers

The US's phytosanitary regulation is conducted by APHIS (Animal and Plant Health Inspection Service), which is divided into nine sub-sections. PPQ (Plant Protection and Quarantine) and VS (Veterinary Services) are responsible for issuing permits for commodities and determining whether a commodity can be imported. The PPD (Policy and Programme Development) division works together with both of these divisions in determining long-term plans and import procedures.

Some products can get pre-clearance from International Services (IS) personnel stationed in the country of origin, either at exporting terminals or site inspections. The PPQ's main focus is to prevent the spread of diseases and pests into US agriculture resources, and it has personnel stationed at all airports, seaports and border stations that check imported cargo and oversee the quarantine process. Exporters or importers must make a request to export/import a commodity, provide as much information as possible on the product, its region of origin and its status that is whether there are restrictions or regulations governing that particular product from that particular region) before a permit is issued, along with the conditions of importation (disinfestation treatment) or mitigation measures. Denials can be challenged – and governments and companies can request a change in the status of a prohibited commodity (an investigation must be performed by the PPQ scientific team), as long as sufficient conditions have changed or a risk assessment has not been conducted within the last 10 years).

Most approved commodities can enter with inspection alone, but some may have to undergo mitigating measures, including post-harvest treatments (hot/cold temperature treatments, irradiation or fumigation, depending on the requirements and which particular treatment is least harmful), the establishment of specifically defined and maintained pest-free areas in a country (which obviously requires extensive co-operation between the country's plant health services and the APHIS IS division), or systems approaches (field surveys, random inspections or various on-site treatments).

A list of the various prohibited commodities originating from particular regions and those that require particular inspection or quarantine measures as a condition of entry can be found at <http://www.aphis.usda.gov>. An online programme explaining the procedures of APHIS and the USDA can also be found at <http://www.aphis.usda.gov/is/sps>.

In addition to phytosanitary regulations, the USDA Food Safety Inspection Services (FSIS) regulates sanitary practices in the packing of food products, while the Food and Drug Administration (FDA), which is part of the US Department of Health, regulates packaging and labelling (http://www.fsis.usda.gov/regulations_&_policies/labeling_guidance/index.asp). The HACCP protocol is used extensively. The USDA also



has quality standards for fruits and vegetables that provide a basis for domestic and international trade and promote efficiency in marketing and procurement. These standards can be found at <http://www.ams.usda.gov/standards/frutmrkt.htm>. At the same time the USDA issues quality certificates based on these standards and a comprehensive grading system. Graders are located around the country at terminal markets. These certification services, which facilitate the ordering and purchasing of products by large-volume buyers, assure these buyers that the products they purchase will meet the terms of the contract in terms of quality, processing, size, packaging and delivery. Detailed information is available at <http://www.ams.usda.gov/fv/fvstand.htm>. (For information on certification of organic produce, visit <http://www.ams.usda.gov/nop/CertifyingAgents/CertAgenthome.html>.)

5.4 Asian market access

Japan's agricultural sector is heavily protected, with calculations from the Organisation for Economic Co-operation and Development (OECD) estimating that almost 60% of the value of Japan's farm production comes from trade barriers or domestic subsidies. Japan uses tariff rate quotas (TRQ) to protect its most sensitive products, and reserves the right for trading many of these products (within the quota) for one or two state trading enterprises. However, these extremely protective measures apply only to some products; others are able to compete more effectively with outside competition, often on the grounds of higher quality.

Perhaps the biggest barrier to trade with Japan in fruit markets is its strict phytosanitary requirements, which have often been challenged in the WTO as having little or no scientific justification. Other measures that are being challenged include Japan's use of fumigation on agricultural products when cosmopolitan pests (already found in Japan) are detected.

Japan is also increasing its labelling requirements. It now (as of 1 April 2000) requires fresh food, including fruit, to be labelled with the place of origin, whilst new technological ('smart') labels that have embedded semi-conductors and information on just about everything are being adopted in various agricultural sectors.

Food containing genetically modified organisms (GMOs) need to be assessed for environmental and food safety by the MAFF or the Ministry of Health, Labour and Welfare (MHLW). At the same time, the MHLW tests food imports for maximum residue levels from pesticides, and as of May 2006, any food with pesticides not on an approved list, regardless of residue levels, are not allowed entry.

Japanese organic definitions changed in 2001 (they roughly corresponded to world standard definitions), and any foreign producers

wishing to enter the Japanese market must be certified under Japanese standards (not general world standards).

China also has a massive system of government support for farmers and generally for rural dwellers (who are lagging far behind urban dwellers in terms of income levels). To this end, most of the agricultural sectors are protected and promoted through a series of subsidies, tax cuts and infrastructure spending policies (as well as low-cost loans, research, land use protection, market stabilisation measures, etc.). Part of the protection of its massive farming population, which for the most part consists of small farmers not benefiting from economies of scale, necessarily occurs in the form of high tariffs and other restrictions. However, China is obliged to reduce tariff levels as a condition of being a member of the WTO. It therefore remains to be seen just what policies will be adopted going forward, but the general consensus is that it is a vitally important market to watch, and endeavour to enter.



6. Distribution channels and logistics

6.1 General distribution channels

There are roughly three distinct sales channels for exporting fruit. One can sell directly to an importer with or without the assistance of an agent (usually larger, more established commercial farms/orchards). One can supply a fruit combine, which will then contract out importers/marketers and try to take advantage of economies of scale and increased bargaining power. At the same time fruit combines might also supply large retail chains. One can also be a member of a private or co-operative export organisation (including marketing boards) which will find agents or importers and market the produce collectively. Similar to a fruit combine, an export organisation can either supply wholesale markets or retail chains, depending on particular circumstances. Export organisations and marketing boards will wash, sort and package the produce.

They will also market the goods under their own name or on behalf of the member, which includes taking care of labelling, bar-coding, etc. Most of the time, export organisations will enter into collective agreements with freight forwarders, negotiating better prices and services (more regular transport, lower peak season prices, etc). Some countries have national marketing boards that handle all the national produce (membership is compulsory) and only sell to a restricted number of selected importers.

Agents will establish contracts between producers/export organisations and buyers in the importing country, and will usually take between 2% and 3 % commission. In contrast, an importer will buy and sell in his/her own capacity, assuming the full risk (unless on consignment). They will also be responsible for clearing the produce through customs, packaging and assuring label/quality compliance, and distribution of the produce. Their margins lie between 5% and 10%. The contract importers of fruit combines market and distribute the produce of the combines, clear it through customs and in some cases treat and package it.

Only a few exporters have long-term contracts with wholesale grocers (who deliver directly to retail shops), but with the increasing importance of standards (EurepGap, etc.) and the year-round availability of fruit, the planning of long-term contractual relationships is expected to increase.

Finally, a new medium of e-commerce is expected to have a significant impact on potential exporters/suppliers and their ability to supply directly to wholesalers/distributors in the target markets. See, for example, www.agribuys.com, www.foodstrading.com or www.hairyape.info/index.html.

6.2 Globalisation and retail consolidation

With fewer constraints and lower transaction costs (especially transport costs), many firms are opting to source produce internationally. Of course this may mean being a multi-national company that produces in one country (owns commercial farms) and then sells the produce in another country, but it could also mean just maintaining relations with foreign companies/organisations/farmers. Traditional importers have no ties to either domestic producers or foreign producers; they simply market the produce – but this state of affairs is changing. Many importers are now simply the marketers of large foreign producer organisations, whilst some companies have divisions that handle the production of the produce, other divisions that package and ship it, and still others that act as sellers, to wholesale outlets or even under their own brand names/retail outlets.

Clearly the whole industry is becoming more globalised, and to meet consumer demands (variety, increased quality, packaging and convenience), companies in some industries will only stay competitive if they expand and compete on a much more integrated level. Examples include Chilean suppliers, who traditionally supplied winter produce to the US markets but are now expanding and producing on farms that they own in the US in order to provide a year-round supply; US companies that conversely own farms in Mexico and Chile for producing and importing produce; or even company mergers to take advantage of economies of scale.

At the same time consolidation in the retail sector has a large impact on buyer/seller relationships, with retailers in the EU, US and Japan now expanding and capturing more of the market than ever before. The large retailers, however, desire large quantities of standardised products that can be supplied consistently and over the long term – no more fly-by-nights or wholesalers supplying markets with whatever produce they can find. If one is able to satisfy the stringent requirements of a large retailer, however, one has access to long-term guaranteed sales and a consistent stream of revenue, which of course assists with financing and planning.

Thus, again, size is likely to count in a farmer's favour. But if the sizes of farms do not lend themselves to such contracts, or generally to economies of scale, this problem could be overcome by producer organisations that act on behalf of the member farmers and pick up, market and distribute the produce collectively.

6.3 Logistical issues

The transportation of fruit falls within two categories – *ocean cargo* and *air cargo* – with ocean cargo taking much longer to reach the desired location but costing considerably less. Of course, the choice of transportation method depends, for the most part, on the fragility of the produce and how long it can remain relatively fresh. With the advent of technology and container improvements, the feasibility, cost and attractiveness of sea transportation have improved considerably. As more developing countries begin to export and supply major developed countries markets, so the number and regularity of maritime routes, and the container vessels travelling these routes, increase. Countries in South America benefit tremendously from the banana trade by enabling cheaper transport prices for their other fruit varieties.

Such economies of scale could benefit SADC countries if more producers became exporters and took advantage of the various ports which have special capabilities in handling fruit produce (for example, Durban's new fruit terminal or the proposed terminal in Maputo).

For some products, in order to reach the destination market with an acceptable degree of freshness, air transport is the only option. Obviously, the price fetched on these markets needs to be sufficient to cover the transport costs, and collective agreements between farmers of different commodities with different harvest periods can become particularly important. There are numerous bottlenecks and infrastructural 'weak points' that exist in the SADC region which presently disadvantage (sometimes prohibitively) potential fruit exporters, and therefore are particularly important to research and be aware of. Often it is these shortcomings that will determine whether one can export profitably, rather than other economical factors or market access requirements.

Cold chain management is crucial when handling perishable products, from the initial packing houses to the refrigerated container trucks that transport the produce to the shipping terminals, through to the storage facilities at these terminals (and their pre-cooling capability), onto the actual shipping vessels and their containers, and finally on to the importers and distributors that must clear the produce and transport it to the markets/retail outlets, etc. For every 10°C increase above the recommended temperature, the rate of respiration and ripening of produce can increase twice or even thrice. Related to this are the increasingly important traceability standards, which require an efficiently controlled *supply chain* and internationally accepted business standards.

Packaging can also play a vital role in ensuring safe and efficient transport of a product and conforming to handling requirements, uniformity, recyclable materials specifications, phytosanitary requirements, proper storage needs and even attractiveness (for marketing purposes).



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