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# TRADE INFORMATION BRIEF

ALMONDS



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TRADE & INDUSTRIAL POLICY STRATEGIES



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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

This Trade Information Brief showcases opportunities for SADC producers in the almond industry.

The global demand for almonds has increased steadily, driven by the interaction of various macro- and microeconomic factors. Macro-economic factors include a population's wealth, age and geographical location, especially the extent of urbanisation. Microeconomic factors are influenced by a consumer's perceptions and preferences, which are shaped by cultural norms, the relative price of competing goods and product availability. If the macro- and microeconomic factors are integrated, the following stylised facts emerge:

- A positive correlation exists between a population's growth in disposable income and the quantity of fruit and vegetables it consumes.
- As incomes rise, consumers increasingly substitute products embodying higher levels of value-added service into their diet (Gehlar & Regmi, 2005). This creates a boom for higher value, processed products.

Based on these stylised facts, a population's consumption of almonds increases as per capita income rises because affluent societies tend to consume more fruit and vegetables, confectionery, snacks and processed foods. As a result, the target market for almonds is the middle class of wealthier middle-income and higher-income countries.

An almond tree's lifespan is 20 to 25 years, but it only produces fruit from its fourth year. This has two implications. First, the supply of almonds is relatively inelastic compared to demand, and secondly, supply has an inbuilt delayed momentum. Therefore the impact of growers' planting activity on production levels and prices is delayed. Although the demand for almonds has increased, because the industry's supply side is relatively inelastic in the short term, the market price for almonds has steadily increased. This has encouraged farmers to enlarge their orchards. However, the period of rapid planting activity is drawing to a close, with many producers having started to decrease their planting activity. As a result, over the medium term (approximately two to five years), the supply of almonds should increase and then plateau.

The important issue for potential exporters is whether current prices are sustainable, given that the supply of almonds will significantly increase by the end of the decade because of historical planting activity. Industry experts say the development of new products and the growth of emerging markets will absorb excess supply and prices should continue to increase over the medium to long term.

The most important factor that could potentially limit production in SADC is climate. The trees require hot, dry summers and cool rainy, winters. In SADC, only Botswana, Namibia and South Africa's Western

## References

A full set of references for this report can be accessed at [www.sadctrade.org/TIB/almonds](http://www.sadctrade.org/TIB/almonds).

## Monetary figures

All monetary figures are in nominal US\$.

Cape province have these climatic conditions. However, almonds are a sturdy, easy to manage crop and can withstand long periods of severe water shortages (Agunbiade & Olanlokun, 2006). This has a positive implication for SADC as most farms are not irrigated, although an irrigated crop produces more and better quality nuts per tree.

The production, processing and marketing of almonds benefit from economies of scale. However, this does not imply that the industry must be dominated by large commercial farms. Smaller farmers can benefit from scale economies by pooling their resources in grower associations and marketing co-operatives. Almonds can be processed using either capital- or labour-intensive methods. Generally, almonds produced as an input into other foodstuffs are processed using capital-intensive methods, while almonds produced to prepare snacks tend to use labour-intensive processing. Obviously, using machines to process almonds is quicker and cheaper than labour-intensive methods. A drawback of capital-intensive processing, however, is that it carries a greater risk of damaging the almonds than manual processing. In India and Italy, higher quality, more expensive almonds, which are processed manually, are used to produce snacks. This has an important implication for SADC. Given surplus, relatively cheap labour in SADC and its distance from major export markets, pursuing a high-value instead of a high-volume export strategy has considerable potential.

Almonds are a luxury, high-value agricultural product predominately consumed by middle-class families, especially those living in Europe, Asia and North America. SADC's demand is marginal, although demand in South Africa and Mauritius is growing, albeit off a small base.

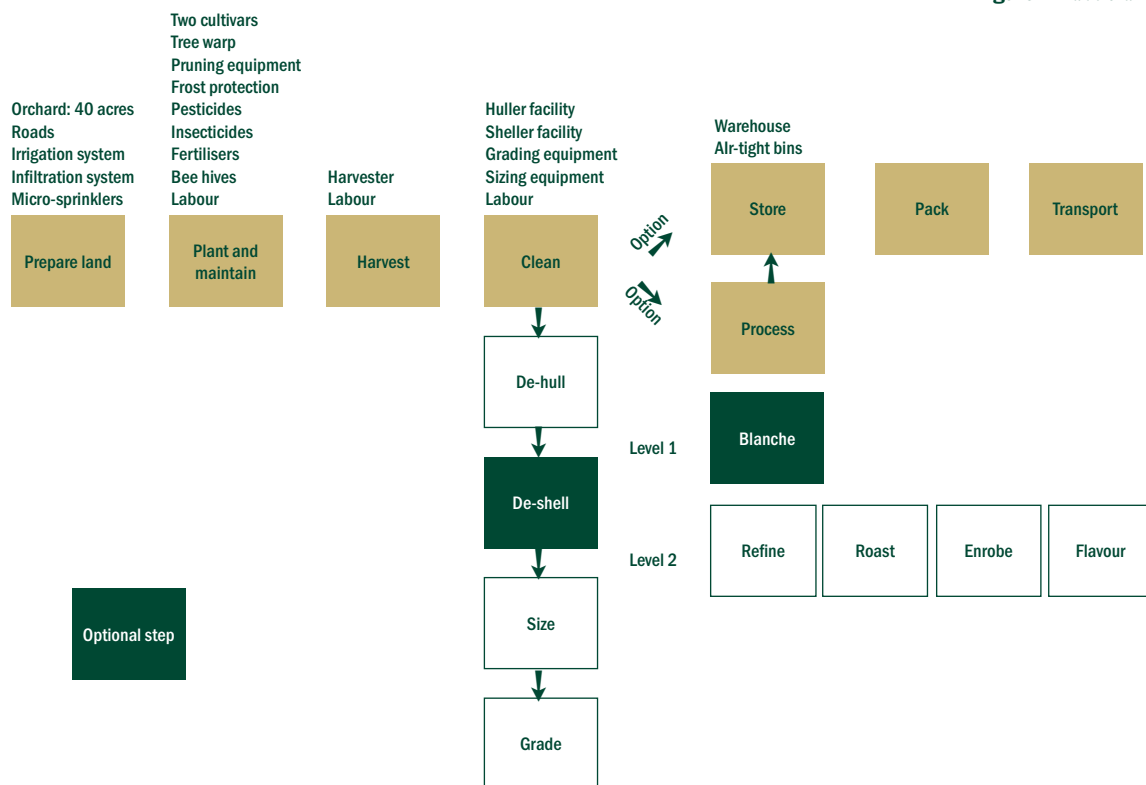
SADC's infrastructure constraints tend to limit its participation in global markets. This is especially true for perishable agricultural products subject to onerous logistical arrangements such as cold chain management. Almonds are not perishable, provided they are stored properly, which simplifies transportation and logistics to get produce to distant export markets.

Almonds provide a viable export opportunity for SADC farmers. However, almonds should not be grown as a farmer's primary crop due to the concentrated nature of the industry and a potential future medium-term over-supply which could reduce prices.

## 2. Product characteristics

### 2.1. Value chain

An almond orchard requires at least two different cultivars, where pollen shedding and bloom periods overlap, to cross-pollinate the almond trees. As almond trees are not self-pollinating, bees are brought to the orchard to carry pollen between alternating rows of almond varieties. It takes six to eight months from full bloom until nut maturity. The pre-harvesting and harvesting phases are relatively short and lend themselves to labour-intensive activities. The cleaning stage of the value chain is performed by a handler, who is the first level in the marketing chain. Cleaning almonds can be done manually, mechanically or electronically. If almonds are stored in cool, dry conditions of about 10°C and less than 65% humidity, their shelf life is approximately one year. This means grower associations and almond co-operatives can store almonds to reduce their exposure to volatile prices and benefit from higher prices by restricting supply.



The almond industry tends to be vertically integrated through the value chain and has a concentrated structure, with a few large growers and processors responsible for the bulk of economic activity. This industry structure is prevalent amongst both developing and developed countries and established and emerging producers. For example, in 2003, 78% of California's export crop was processed by 20% of the industry's handlers (Boriss & Brunke, 2005). In Australia, Select Harvest Limited, the largest almond grower and processor, is responsible for a third of that country's crop (Harte, 2006). Compared to its American and Australian counterparts, the EU's almond industry has more family-owned than commercial farms. The EU encourages growers and handlers to form Producer Organisations (POs) by offering to co-finance farmers' operational programmes. In Spain, domestic growers formed co-operatives to process and market their almonds in domestic and international markets (Ramos & Medina, 2006).

The reasons for the almond industry's structure are threefold. First, production, distribution and marketing decisions are interlinked. Developing new cultivars and investing in hydroponics technology to increase almond yields per tree is an important competitive strategy. However, these activities require substantial capital, are relatively risky and benefit from economies of scale. On the demand side, creating new markets for almonds requires extensive marketing; one marketing tool is the promotion of almonds as a health food that helps to reduce the risk of heart attacks.

Secondly, handlers provide a conduit of information between growers and customers, which means that most almonds tend to move through integrated handler-processing-marketing organisations. In the third place, the co-ordinated buying of almonds in the domestic market is used to reduce price volatility. According to Blue Diamond, the largest grower-handler co-operative in the US, one of the reasons for its success is that it "avoids the peaks and valleys of unco-ordinated selling and is able to deliver reliable, competitive results under any market circumstance" (Carol, 2006).

## 2.2. Product description

Trade data for almonds at the Harmonised System (HS) Code six-digit level fall within two categories: HS 080211 – almonds in-shell, fresh or dried and HS 080212 – almonds fresh or dried, shelled and peeled. (The HS is an international method for classifying products for trading purposes.)

When almonds are harvested they are encased in a tough, leathery hull and inner protective hard shell. The first stage of the value chain is to separate the almond's hull and shell from its kernel. Almonds are classified as in-shell as their husk is removed, leaving a thin shell. The hulls and shells discarded during this process are a by-product that is



**Table 1:** Culinary uses for almonds

Almond preparation	Food application
Whole	Natural, roasted, flavoured snacks Chocolate- or sugar-covered sweets Ingredients for upstream industries Inputs for processing
Cut into slices or flakes	Toppings for salads Ingredients for cereal Garnishes: baked goods/prepared foods
Cut into slivers or halves	Roasted or flavoured snacks Ingredient for baked goods and cereal Texture for confectionery Topping for prepared foods
Diced or chopped	Toppings for baked goods/dairy products Ice cream bar coatings Filling for baked goods/confectionery
Ground into meal or flour	Coating for fried foods Ingredient and filling for confectionery Flavour enhancer Sauce thickener
Made into a paste	Filling for chocolate, cereal bars, confectionery, baked goods Substitute for other nut butters
Extract oil	Cooking oil

**Source:** Almond Marketing Brochure, Almond Board of California (2005)

sold to the livestock industry. Hulls are used to feed dairy cattle and the shells are used for bedding.

The primary commercial product of the almond tree is the almond kernel. Almonds are used primarily as a food source, with limited medical and cosmetic application.

In developed countries, the largest upstream purchasers of almonds are the confectionery, baking, dairy and prepared foods industries, which on average account for half of all consumption. In developing countries, almonds are predominately consumed in a more natural state and sold as a snack food. Irrespective of the type of market, the best quality almonds are used to produce snack foods, while secondary grades are used in processed foods across a spectrum of industries.



### 3. Demand drivers

As a population becomes more urbanised and its disposable income increases, it generally improves its diet, which means increasing the quantity and nutrient value of the food basket by incorporating more fruit and vegetables. Consumers' food consumption is also influenced by their perceptions and preferences, which are shaped by cultural norms, in turn affected by urbanisation, the relative price of competing goods and product availability.

A combination of consumers having less time available to prepare food and forfeiting economies of scale gained from preparing food for a group of people has increased the opportunity cost of preparing food. Therefore, an increase in consumers' disposable income, combined with a preference for convenience, has given consumers the option to pay a premium for food that saves them time. This has created a boom for higher value processed foods, which include those that tend to use almonds as an ingredient.

In developing countries, as consumer incomes grow, food consumption shifts from low-value, carbohydrate-rich cereals to higher value meats, fruit and vegetables, which means nuts such as almonds are in greater demand.

In contrast, greater levels of disposable income in developed countries encourage consumers to increase their consumption of time-saving packaged convenience foods. According to Gehlar & Regmi, 2005a: 6), high-income regions, including EU countries, the US and Japan, accounted for over 60% of packaged food sales in the world in 2002. (Packaged food accounts for about half of total food expenditure in developed countries, but for a third or less in most developing countries.) This increases the demand for almonds in developed countries, as the nuts are used as ingredients in processed foods, snacks, toppings and garnishes.

Although almond producers have marketed almonds as a health food to control the incidence of heart disease and cholesterol and to promote weight loss, they do not possess any special health benefits over other nuts, which can be substituted for almonds. Therefore the movement towards healthier lifestyles and the consumption of health foods do not secure a market for almonds in particular. The relative price of other tree nuts will therefore either promote or discourage the consumption of almonds.

## 4. Market characteristics

### 4.1. Production

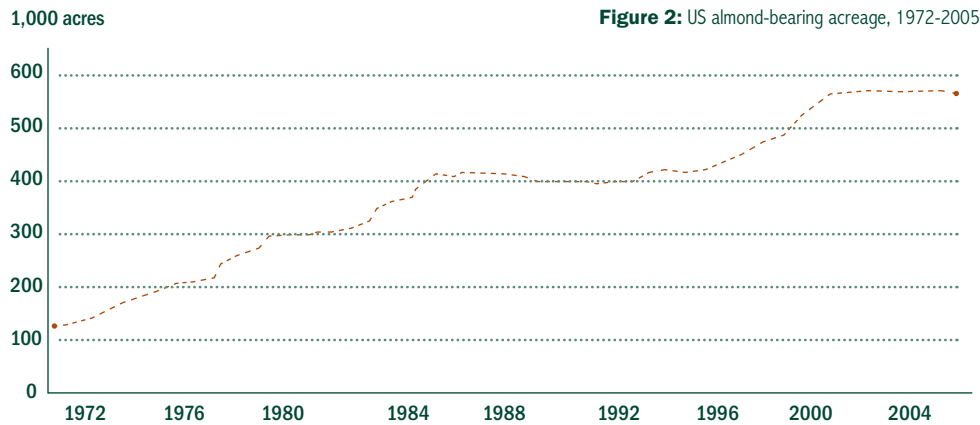
As one can see from table 2, the industry's supply side remained relatively stable from 2000 to 2004, achieving an annual average growth rate of 4.1%. The US dominates global almond production, with a 45% share of total production in 2004. Figure 2 shows that the US increased its almond-bearing acreage from 1972 to 2000, while the country's almond-bearing hectares remained constant between 2003 and 2005, at 555,000 hectares (USDA, 2005). Given the sheer size of the US's productive volume compared to other countries' producers, it largely determines global market supplies.

**Table 2:** The major producers of almonds ('000 tons)

Rank	Country	Year					Growth (%)	Percentage
		2000	2001	2002	2003	2004	00-04	2004
<b>Established producers</b>								
1	US	533.00	609.18	800.05	786.26	761.29	9.32	44.41
2	Spain	225.22	254.60	279.40	214.45	224.60	-0.07	13.10
3	Syria	62.29	49.49	139.01	130.00	130.00	20.19	7.58
4	Italy	104.76	112.81	104.89	91.38	105.25	0.12	6.14
5	Iran	89.64	97.14	107.00	80.00	80.00	-2.80	4.67
6	Morocco	65.04	81.82	82.40	70.81	70.00	1.85	4.08
7	Greece	50.96	55.12	38.13	36.48	51.75	0.39	3.02
8	Tunisia	60.00	32.00	18.50	40.00	44.00	-7.46	2.57
9	Turkey	47.00	47.00	41.00	41.00	37.00	-5.81	2.16
10	Algeria	26.48	25.20	32.29	33.23	33.00	5.66	1.92
<b>SADC</b>								
34	Swaziland	0.70	1.70	0.70	0.50	0.48	-9.00	0.03
42	Tanzania	0.00	0.00	0.00	0.00	0.11		0.01
48	Zambia	0.00	0.00	0.00	0.00	0.01		
<b>Emerging producers</b>								
13	China	17.00	20.00	22.00	23.00	24.00	9.00	1.40
17	Chile	8.14	8.60	9.10	8.80	9.00	2.54	0.52
20	Palestine	4.39	4.36	4.83	4.48	5.98	8.03	0.35
	Rest of the world	165.01	141.95	157.75	145.95	137.83	-4.40	8.04
	<b>Total production</b>	<b>1,459.63</b>	<b>1,535.97</b>	<b>1,837.06</b>	<b>1,706.34</b>	<b>1,714.30</b>	<b>4.10</b>	<b>100.00</b>

Source: Food and Agricultural Organisation Statistics (FAOSTAT)

The second-largest producer is Spain, with 13% of global production. In Spain, 1.6-million acres are allocated to almond production of which 120,000 acres are classified as non-bearing. Almond production tends to be a marginal crop grown by farmers who derive the bulk of their income from other crops. Approximately 90% of orchards are not irrigated and yields are quite low, reaching less than 200 kilograms per acre (Perez, 2003). As the majority of Spain's production is dependant on rainfall patterns, it opens up the market to supply-side variability. This provides opportunities for organised exporters to fill the gap when



Source: US Department of Agriculture (USDA), 2005: 21

supply is constrained and almond prices are at a premium. Therefore, as Ramos & Medina (2006) note, a change in the EU's Common Agricultural Policy (CAP) could result in "the progressive abandonment of [almond production] in less productive regions". As a result, Spain's productive capacity should decrease over the medium to long term.

Syria is the world's third largest producer, with 8% of global production. Even though Syria's production capacity grew by 20.19% over the period under review, it is off a low base. Syria's production is largely for its domestic market, which is protected by high tariffs. As producers are internally focussed, their productive capacity has a negligible impact on the global supply of almonds.

The production capability of the fourth largest almond producer, Italy, has remained constant over the past decade and analysts do not expect the country to reinvest in orchards, as the agricultural sector has shifted its productive capacity to exploit profitable opportunities in other crops. In the medium term, Italy's almond production will therefore decline (US Department of Agriculture, 2006) and the country will become a more important import market rather than an export competitor.

Greece is the seventh largest producer of almonds, accounting for 3% of global production. More than 50% of Greece's orchards produce almonds and over the next five years, in response to greater domestic and international demand and buoyed by the EU's revised CAP farming subsidy, Greek producers will expand their production capacity, which could reach 25,000 to 28,000 metric tons per annum by 2010 (Zekliziotis, 2005). (EU farmers no longer receive subsidies to grow field crops and will shift production to more profitable crops such as almonds. An added incentive is that field crops were grown on irrigated land with poor soil quality, which are perfect conditions to grow almonds.) Greek producers will pose a competitive threat as they are establishing themselves as the key exporter to the Balkan states, a lucrative emerging market.

Turkey is the ninth largest almond producer, with 2% of global production. The Turkish government does not provide any assistance to the almond industry as it is considered a marginal crop, and the industry is apparently not organised with producer associations or co-operatives, which are vital to commercial success (Sarigedik, 2003). Given the industry's lack of organisation and its mature nature, Turkey's production capacity should remain constant over the medium to long term.

Chile and Australia are emerging almond producers that face similar conditions to those present in SADC. Neither country has apparent competitive advantage in producing almonds. Both are geographically isolated from major markets, face rainfall and frost constraints, and domestic demand for this non-traditional crop is limited. However, since 2001, Australia has planted 35,095 acres of almonds. Australia's orchards have grown from 10,000 acres in 2000 to 46,670 acres in 2006, of which 21,012 acres are bearing. Australia is vying to be the second largest exporter of almonds and plans to plant between 20,000 and 30,000 acres of new almond orchards over the next two to three years. This will exponentially increase the amount of almonds produced by Australia – the expected output for 2007 is 20,000 tons and if Australia's ambitious planting plans are successful, it could produce 50,000 tons in 2012. Most of the country's produce is earmarked for the UK, France, Germany, Spain, Middle East, China, Japan and India. The Australian strategy is to compete in terms of quality and to exploit its counter-seasonal advantage to export fresh almonds to the northern hemisphere.

80% of Chile's planted area is in production. Chile's commercial almond crop is planted on irrigated land (which improves crop quality and size), with 40% on drip irrigation. Chile's average yield per hectare is therefore high, averaging 600kg to one ton. Over the next five to seven years, 500 hectares of almonds will be planted each year, of which 250 hectares will replace ageing orchards. Chile's almond production capacity is capped by access to scarce productive land and competition from avocados for such land. Although Chile's planting activity is increasing, it is off a low base (Chile's total planted areas of almonds are not likely to exceed 15,000 hectares) and will have a limited impact on global supplies (Hennicke, 2006). Chile will not be a direct competitor to SADC producers as it exports almonds to South American countries where SADC does not enjoy any tariff privileges.

Over the medium to long term, global almond production will increase, but at a decreasing rate, as the US, the world's dominant producer, has scaled back its planting activities. Although emerging producers such as Greece, Chile and Australia are aggressively planting trees, it will take some years before they are ready to bear nuts, and as their planting activities are off a low base, the global almond supply will only be affected marginally.



## 4.2. Consumption

The six largest consumers of almonds – the US, Spain, Italy, Syria, Germany and France – comprise 54% of total consumption, while the remaining 46% is scattered amongst various countries. Demand prospects for almonds appear to be positive, with the four largest consumers of almonds increasing their demand for almonds at a faster rate than the world's average consumption rate.

**Table 3:** Major consumers of almonds ('000 tons)

Rank	Country	Year				Growth (%)	Percentage
		2000	2001	2002	2003	00-03	2004
1	US	218.53	236.86	295.09	267.38	6.96	14.88
2	Spain	210.73	212.19	203.11	242.99	4.86	13.52
3	Italy	144.49	149.77	151.11	162.29	3.95	9.03
4	Syria	75.61	63.26	99.93	115.89	15.30	6.45
5	Germany	111.12	104.41	107.85	106.98	-1.26	5.95
6	France	82.57	81.23	84.96	78.38	-1.72	4.36
7	Iran	81.53	83.12	53.07	74.79	-2.84	4.16
8	Morocco	59.51	76.22	76.86	66.17	3.60	3.68
9	Greece	52.70	60.56	53.59	59.97	4.40	3.34
10	Japan	40.12	45.55	52.63	54.32	10.63	3.02
<b>SADC</b>							
49	South Africa	1.27	1.64	1.53	1.79	12.12	0.10
75	Swaziland	0.03	0.12	0.11	0.23	97.18	0.01
78	Mauritius	0.15	0.21	0.19	0.19	8.20	0.01
	Other	540.79	518.45	524.99	567.66	1.63	31.59
	<b>World consumption</b>	<b>1,617.88</b>	<b>1,631.95</b>	<b>1,703.49</b>	<b>1,797.24</b>	<b>3.57</b>	<b>100.00</b>

Source: FAOSTAT

Emerging markets for almonds are geographically dispersed between regions and countries' stages of development (see table 4). Although emerging markets' consumption growth has been impressive, one must take into consideration that this has been off a low base.

Although the level and type of food demanded by a society are determined by its wealth, per capita income and cultural preferences, broad similarities do exist between countries' consumption patterns. To explore these trends, we use country-specific case studies to illustrate the consumption drivers in developing, emerging and developed countries. The US and Spain's consumption behaviour is a fair reflection of the drivers shaping developed economies' demand for almonds (see table 5). A US survey conducted in 2005 confirms that the manner in which this market consumes almonds has not significantly changed since 1991. More than 50% of the US's domestic almond stocks are purchased by food processors and used as ingredients in manufactured goods such as candy, cereal, ice cream, granola bars and biscuits (USDA, 2005). 25% of local almond stocks are purchased by retailers for snacks or for domestic baking and cooking, while the remaining 25% is used by the food service industry such as restaurants and/or caterers. Spain's almond consumption follows a similar trend, with 70% to 80% of almonds used by the confectionery (particularly the nougat) industry, while the remainder is consumed as snacks (Perez, 2003).

The factors shaping China's consumption of almonds can be used as a proxy to understand the demand drivers shaping consumption patterns in developing countries, in particular India. The Chinese prima-

rily consume tree-nuts in snacks, with the country's huge middle class (approximately 200-million to 300-million consumers), which continues to grow, the predominant consumers of almonds. Experts predict that China's nut consumption will increase by 5% per annum (Bugang & Brunke, 2006). However, this market is price sensitive, as nuts are a snack food. Therefore, if the relative price of almonds increases compared to other tree-nuts, consumers will rather buy other nuts or alternative snack foods. Nut consumption also experiences seasonal fluctuations. About 70% of annual nut sales occur between the Mid-Autumn Festival and the Chinese New Year (September to February), despite prices reaching their highest levels during this period.

Russia, with the third fastest growing retail market in the world after India and China, is a lucrative market for almonds. The retail boom has led to a growth in supermarkets, which in turn stimulated the development of the food processing industry. Since 1993, this sector has grown 15% to 20% per annum, and by 2003 it was worth US\$32.5-billion (Schultz, 2006). Processors demand high-quality ingredients as they focus on value-added production that give rise to new products, and are therefore quality rather than price orientated. The development of supermarkets has also resulted in better storage facilities, infrastructure and logistics. On the supply side it is simpler to place products in the market through improved supply chain management.

**Table 4:** Emerging markets' consumption of almonds ('000 tons)

Rank	Country	Year					Growth (%)	Percentage
		2000	2001	2002	2003	2004		
<b>EU</b>								
21	UK	17.47	18.16	18.05	20.87	25.6	10.02	1.16
22	Switzerland	14.30	14.51	14.18	15.44	21.74	11.04	0.86
23	The Netherlands	12.91	17.41	12.51	15.10	22.33	14.68	0.84
25	Denmark	12.14	12.36	11.73	13.21	20.28	13.69	0.74
26	Belgium	10.78	8.74	12.07	12.48	14.42	7.54	0.69
30	Austria	5.28	7.29	9.08	10.32	8.50	12.64	0.57
32	Sweden	6.22	5.91	5.66	6.23	10.25	13.30	0.35
39	Norway	4.48	3.40	3.73	4.14	5.65	5.97	0.23
40	Poland	2.11	2.92	3.45	3.65	5.36	26.25	0.20
<b>Eastern Europe</b>								
24	Russian Federation	5.14	9.67	10.30	13.42	25.69	49.52	0.75
37	Czech Republic	2.55	3.46	4.32	4.84	5.91	23.38	0.27
<b>Asia</b>								
11	China	36.16	39.57	47.85	45.43	52.39	9.71	2.53
28	Korea	8.19	9.55	10.25	11.77	14.79	15.92	0.65
<b>Middle East</b>								
14	Algeria	26.42	25.93	34.94	37.57	42.47	12.60	2.09
35	Saudi Arabia	4.64	5.30	3.75	5.92	7.23	11.73	0.33
38	Jordan	3.40	2.69	4.31	4.48	5.14	10.88	0.25
<b>North America</b>								
17	Canada	18.68	20.17	23.68	27.72	44.77	24.42	1.54

Source: FAOSTAT

### 4.3. Outlook: integrating demand and supply

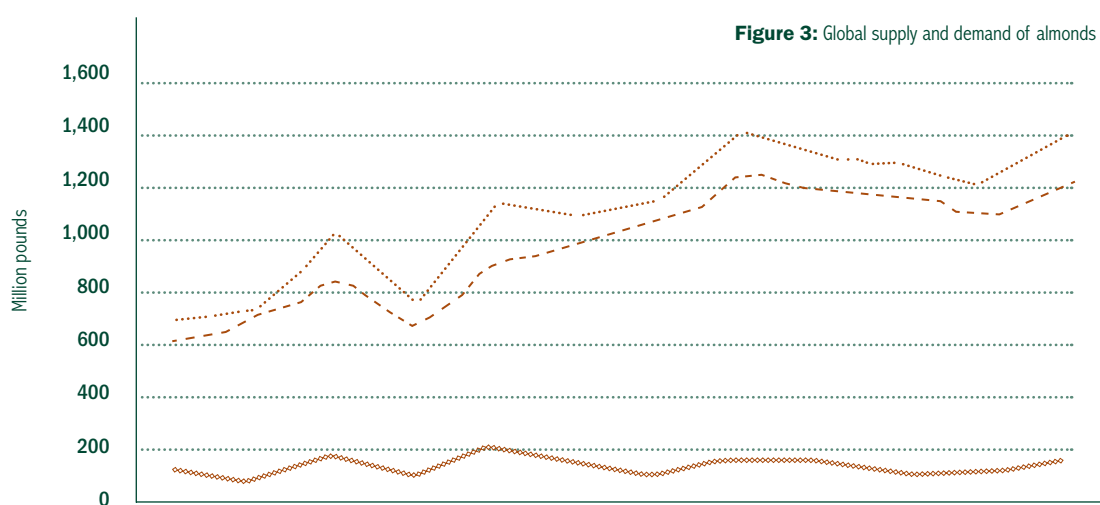
High almond prices encourage farmers to enlarge their orchards. As it takes four years for an almond tree to produce fruit, the supply side has an in-built delayed momentum. Therefore, over the medium

term (two to six years), the global supply of almonds should ramp up and then start to taper off (see figure 3). To assess whether one should enter the almond industry, the critical issue to consider is the sustainability of current prices, given that the global supply of almonds is expected to increase significantly by the end of the decade. Blue Diamond president Doug Youngdahl predicts that an annual increase of 20,000 to 25,000 new acres will be needed to satisfy anticipated future demand, but acknowledges that today's plantings are at levels double that number (Carol, 2006). The industry's profitability therefore hinges on its ability to create an increased demand for almonds, particularly in the health market and to explore new markets in Asia and Eastern Europe. Moreover, big co-operatives are protecting themselves against potential price erosion by using their resources to create a differentiated product through branding activities.

**Table 5:** US's almond consumption

User	1980	1985	1989	1991	Change '80/'91
	Millions of pounds				(%)
Confectionery industry	22.9	40.5	53.1	59.9	161.6
Consumer products	24.8	37.5	42.5	31.8	28.3
Food processor	7.7	16.5	30.1	28.1	264.7
Nut salters	17.2	22.5	17.7	18.7	8.8
Ice cream makers	14.3	15.0	14.1	18.7	30.9
Food service	5.7	10.5	12.4	13.1	129.9
Bakers	2.9	7.5	7.1	11.2	287.3
In-shell				3.7	n/a
<b>Total</b>	<b>95.5</b>	<b>150.0</b>	<b>177.0</b>	<b>185.3</b>	<b>94.1</b>

Source: Blue Diamond Growers, in Moulton, 1994



**Figure 3:** Global supply and demand of almonds

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
World supply	714	758	1,021	779	1,123	1,093	1,150	1,387	1,314	1,258	1,188	1,360
Consumption	621	710	849	687	918	966	1,069	1,217	1,165	1,143	1,075	1,220
Carry-over stocks	93	48	172	92	205	127	81	170	149	115	113	160

Source: Australian Almond Board

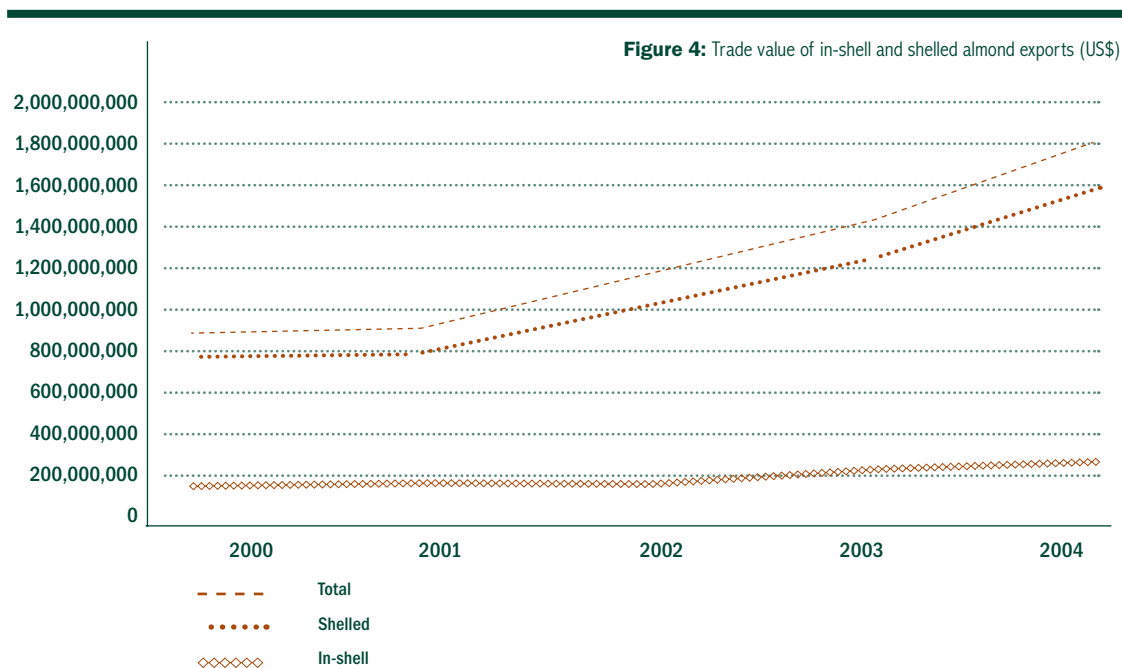


# 5. Trade

## 5.1. Introduction

The value and volume of trade in shelled almonds is greater than for in-shell almonds (see figure 4). Shelled almonds are a higher value product than in-shell almonds and provide an exporter with an option to increase his margins.

Prior to 1999, the demand for in-shell almonds was relatively flat, but India's demand for in-shell almonds revived this market. The demand for in-shell almonds is driven by developing countries, in particular India and China, which use cheap labour to manually shell almonds and re-export them as a processed good. In contrast, the demand for shelled almonds stems from developing countries' desire for easy-to-use ingredients for the confectionary and food processing industries.



Source: UN Commodity Trade Statistics Database (Comtrade)

**Table 6:** Exports of in-shell and shelled almonds (US\$)

	Year					2005	Growth (%) 00-04	Percentage of total 2004
	2000	2001	2002	2003	2004			
In-shell	135,729,918	130,967,748	140,159,420	214,296,433	250,292,776	340,187,277	16.53	13.70
Shelled	743,190,790	780,447,541	1,014,460,600	1,221,389,897	1,587,317,012	2,176,953,917	20.89	86.89
<b>Total exports</b>	<b>878,920,708</b>	<b>911,415,287</b>	<b>1,154,620,020</b>	<b>1,435,686,330</b>	<b>1,837,609,788</b>	<b>2,517,141,194</b>	<b>20.25</b>	<b>100.59</b>

Source: UN Comtrade

Trade patterns develop and become entrenched due to the concentration of production in key areas because of climatic endowments, proximity to markets and growers taking advantage of counter-seasonal production between northern and southern hemispheres. North America, essentially the US, is the world's dominant almond grower and preferred global supplier. The US is the primary exporter to the three largest in-shell and shelled almond importers. Its market strength is derived from its large source of supply, consistent quality, advanced infrastructure, professional grower co-operatives and aggressive marketing.

Proximity to markets is an important variable that influences the trade of agricultural products due to their perishable nature and high transportation costs compared to the relative value of the product. Provided they are stored under the correct conditions, almonds have a shelf-life of one year. The importance of geographical proximity between an exporter and an importer due to product perishability is therefore not vital except in niche markets where superior quality almonds are demanded for snacks. This is unfortunate for SADC growers as counter-seasonality has been a source of competitive advantage and has proved beneficial in many other agricultural commodities.

Even though almonds are classified as a high-value agricultural product, compared to exporting manufactured goods, almonds are a low-value commodity and therefore transportation costs significantly affect margins. Thus, despite the potential to supply distant markets, the bulk of trade tends to occur between regions. The almond industry has developed trading hubs to source and pool raw almonds which are processed and then re-exported to neighbouring countries within designated regions. For example, Spain, Greece, Hong Kong and the US serve as trading hubs for Europe, the Balkans, Asia and North America, respectively. Canada imports the bulk of its almonds from the US, while European countries prefer to import from Spain and Italy, thus entrenching intra-regional trade. Increased extra-regional trade between north-south countries has been the result of producers taking advantage of counter-seasonality.

## 5.2. Trade analysis of the in-shell almond market

### 5.2.1. Regional imports

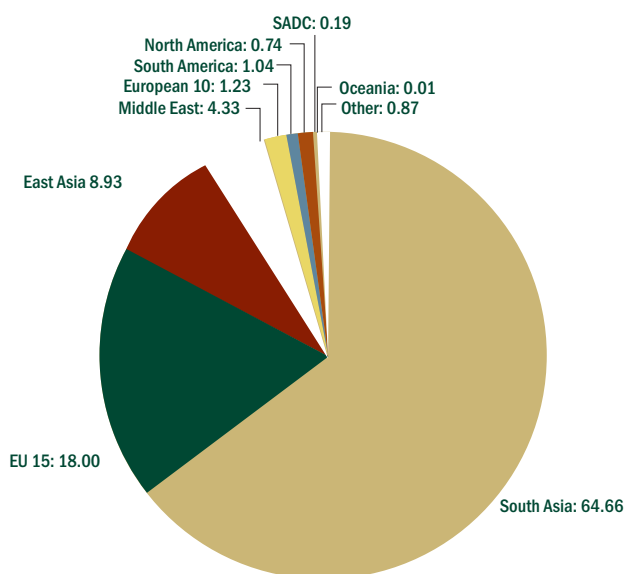
In 2004, South Asia was the largest importer of in-shell almonds, with 65% of the market (see figure 5). This was due to India's increasing demand for in-shell almonds, driven by its growing middle class. The EU 15 was a distant second, accounting for 18% of the market. From 2000 to 2004, the market composition remained relatively unchanged, except for South Asia which showed an increase in market share from 58% in 2000 to 65% in 2004 and East Asia which saw a sharp decline in market share, from 19% to 9%. Based on the data, the best market

prospect is South Asia as its share of the market continues to grow, which is remarkable considering it is off a large base.

North America was the fastest growing market for imported in-shell almonds, with an annual average growth rate of 69%, but it is off a relatively low base (see figure 6). In Canada, almonds are gaining popularity as a healthy snack alternative, while the US is a net exporter of almonds, mainly to the EU 15. However, it does import lower quality almonds used by its food processing industry.

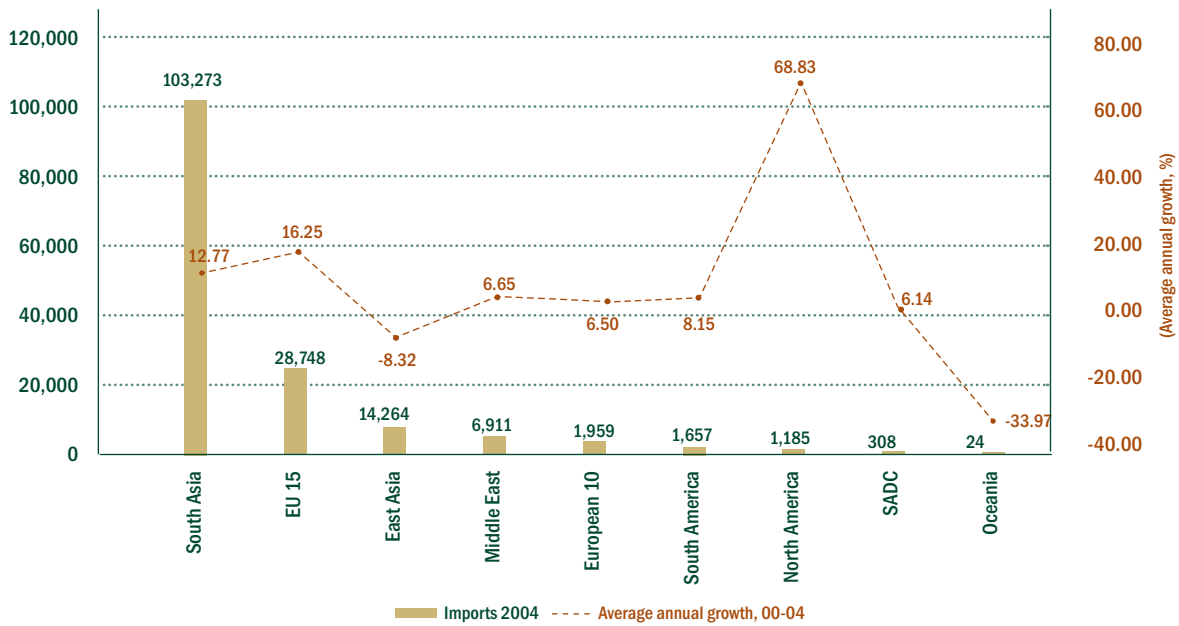
The second fastest growing market was the EU 15 region, which achieved an average annual growth rate of 16%. South Asia's imports of in-shell almonds grew by 13%, making it the third fastest growing market over the period under review. Oceania's imports of in-shell almonds declined by 34% from 2000 to 2004. Australia has established itself as Oceania's regional trading hub.

**Figure 5:** Regions' share of imports for 2004 by value (%)



**Source:** Comtrade

**Figure 6:** Value and growth of regions' imports (US\$'000)

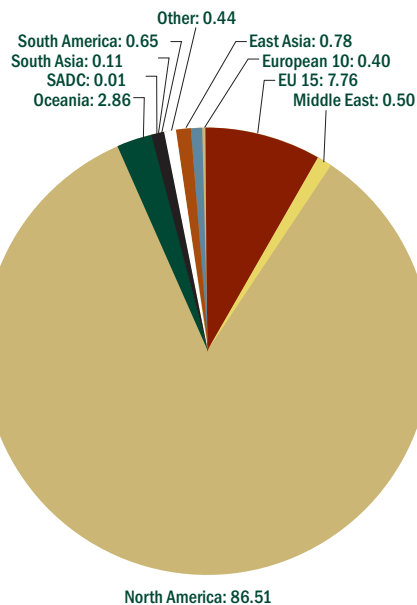


Source: Comtrade

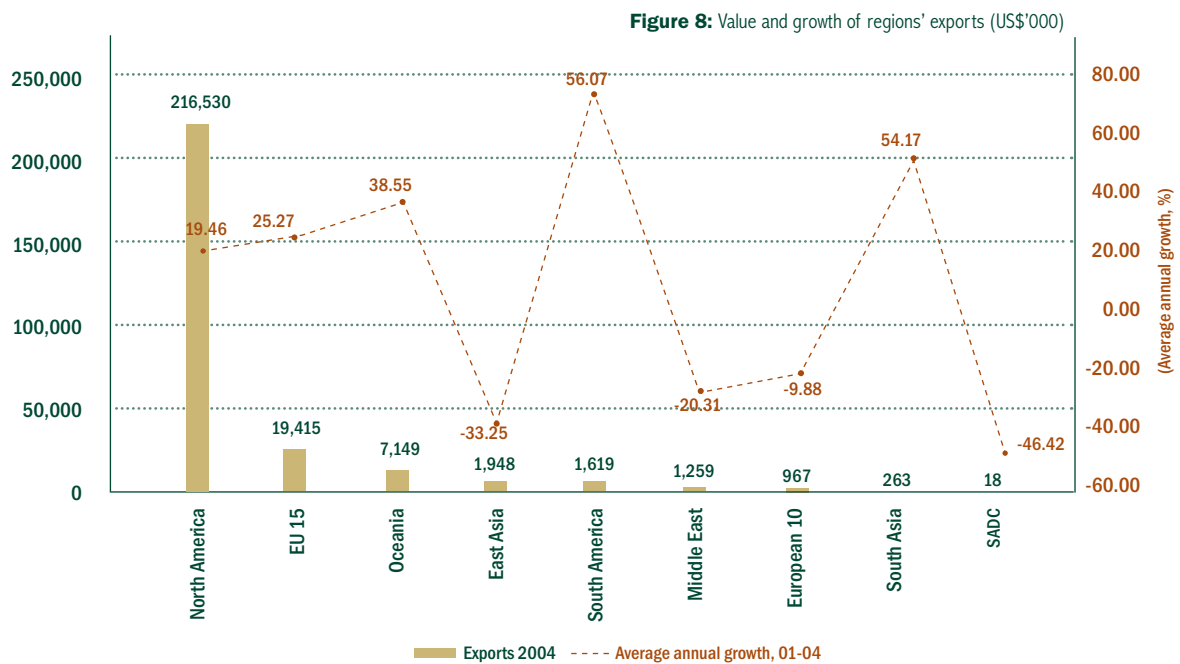
### 5.2.2. Regional exports

In 2004, North America dominated the export market, followed by the EU 15 and Oceania, with an 87%, 8% and 3% share of the market, respectively (see figure 7). North America's trading partners are predominately South Asia, in particular India, and East Asia, especially China. The market composition was relatively stable from 2000 to 2004. Although North America dominates the market, Oceania's export capability is steadily increasing.

**Figure 7:** Region's share of exports for 2004 by value (%)



Source: Comtrade

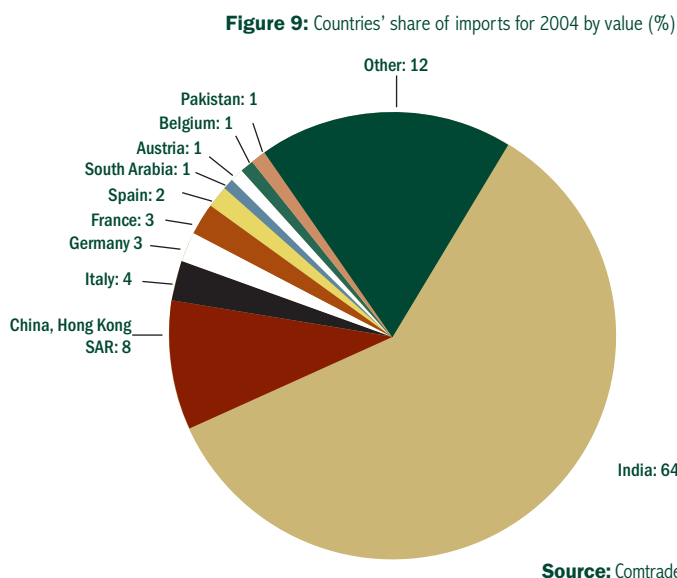


Source: Comtrade

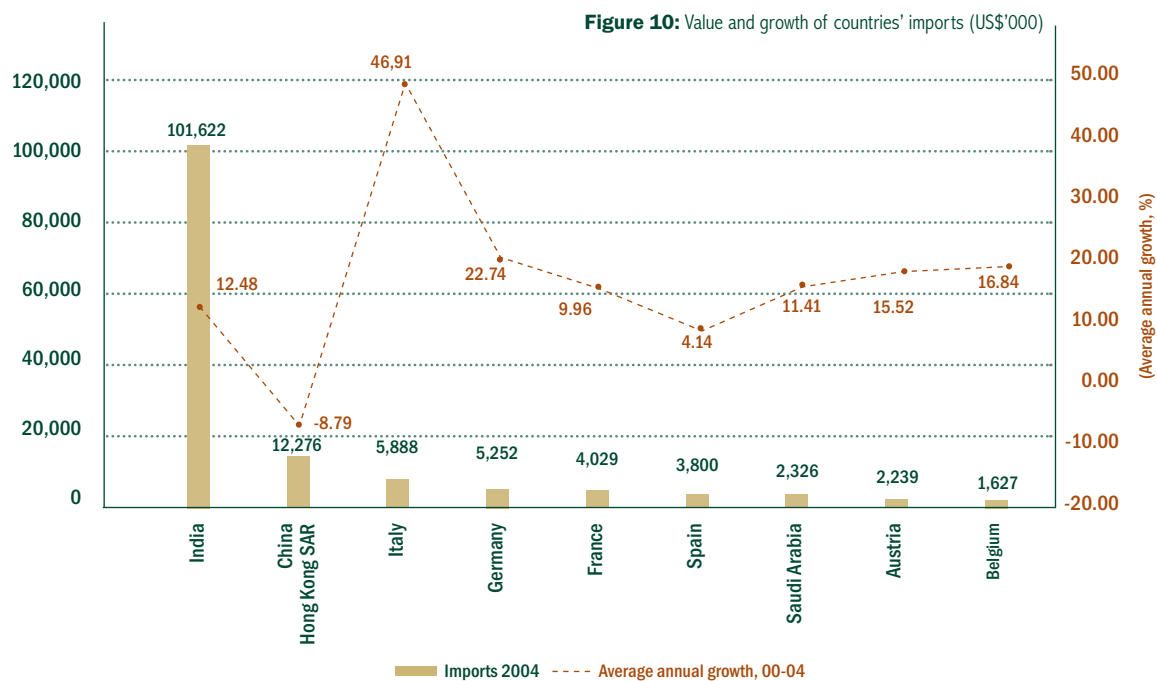
In terms of value, in 2004 the largest regional exporter of in-shell almonds was North America, whose export growth was largely fuelled by sales to India and China, followed by the EU 15 and Oceania (see figure 8). Oceania grew its exports by 39%, reflecting Australia's strategy of targeting Pacific Rim countries.

### 5.2.3. Country imports

In 2004, India was the largest importer of in-shell almonds with 64% of global imports (see figure 9). Hong Kong's share of global in-shell imports for 2004 was 8%, placing it a distant second. In 2004, five countries accounted for 81% of global imports, indicating that the demand for imported in-shell almonds tends to be concentrated in a few countries.



Source: Comtrade



Source: Comtrade

From 2000 to 2004, the import market for in-shell almonds achieved an annual average growth rate of 10% (see figure 10), while six out of the top nine import destinations attained an annual average growth rate above 10%. India, the largest importer of in-shell almonds, reported growth of 12.48%. Market growth is expected to continue – an important factor for SADC growers as entering the Indian market will require substantial resources.

It is vital that potential exporters understand what drives India and China's consumption patterns to anticipate their import requirements. In India, the majority of in-shell imports are hand shelled and sold to the market as kernels (Singh, 2004). Indian consumers prefer hand-cracked almonds as it produces a perfect nut, whereas mechanical processing tends to scratch or chip the almonds. India's supply of cheap labour allows it to shell imported almonds at a lower cost, which turns a commodity product into a higher value quality processed product. The shelled almonds are then exported as a processed product.

India's import market is price sensitive. Higher relative almond prices lead to product substitution of less expensive nuts, in particular walnuts, pistachios and cashew nuts. India's middle class numbers approximately 150-million to 200-million consumers and is the fastest growing segment of the population in terms of size and wealth. Almonds are consumed as whole nuts and used in desserts, sweets and confectionery. The confectionery industry accounts for 25% to 35% of India's almond consumption.

Experts predict that the demand for in-shell almonds should increase to 30,000 to 35,000 tons per annum (Singh, 2004), driven by urbanisation that affects consumer preference, trade liberalisation policies and changes in societies' economic structure. According to Landes (2004), "middle-income and urban consumers are likely to spend more of their income on upgrading and diversifying their diets, eating out more often and eating more processed and convenience foods". On average, Indian households spend 55% of their income on food, a sizeable proportion compared to other emerging markets. A growing middle class, coupled with changes in food prices due to the introduction of liberal trade policies, drive the demand for a greater variety of foodstuffs. Domestic production cannot supply these products due to poor farming practices and insufficient infrastructure. In the short to medium term, therefore, India will have to import food, but this could change over the long term as the Indian government is initiating programmes to improve the productivity of India's agricultural sector.

So, India's demand for almonds should increase in the near future, but local producers will not have the capacity to satisfy this market. As a result, on a purely volume basis, India is a viable export market; however, supply-side bottlenecks throughout the value chain from production to retail hamper importers' ability to access the market profitably. According to Landes (2004), marketing chains are highly fragmented, often including six to eight intermediaries, and are dominated by small-scale enterprises. About 4% of agricultural production is processed by a multitude of small processors. India's \$133-billion retail food industry is dominated by small, family-owned stores (Landes, 2004). Retail chains are experiencing phenomenal growth, but only account for 1% of food sales.

Imported goods tend to cost more than their domestic counterparts, which places them at a relative disadvantage. This is due to supply-side inefficiencies that create a complex value chain allowing wholesalers, retailers and intermediaries to charge high margins, exacerbated by high tariffs (Landes, 2004). India is a key almond market because of the sheer volume of its demand, and thus the issue is not if SADC growers should enter the market but when. SADC growers can delay entering this market until its supply-side constraints are eased, which could lock them out the market; alternatively, entering the market now could gain SADC a first-mover advantage over other countries.

Hong Kong's large import figures do not reflect local consumption but rather its status as China's import hub. In 1995, re-exports to China and Macau accounted for about 80% of America's direct exports to Hong Kong (Rutledge, 1996). As a consequence, China's import figure is understated as nuts are imported via Hong Kong. Shanghai serves as China's internal nut distribution hub from where products are re-directed and distributed throughout China.

China imports in-shell almonds for domestic consumption and re-exports them to the region in a processed form. China uses its abundant cheap labour



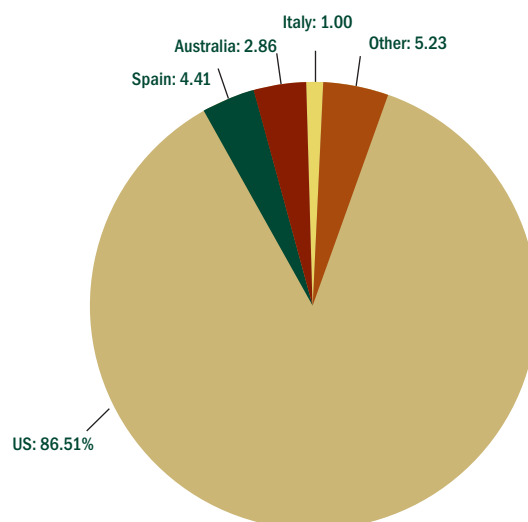
to crack the almond shells manually and then re-exports the shelled almonds as a value-added product. The majority of imported almonds are consumed as snacks and the remainder is used as food ingredients by the confectionery industry.

Urbanisation is driving the expansion and development of China's retail food sector, which will affect the demand for imported almonds. Over the next 20 years, China's urban population is expected to increase by 300-million (Coyle, 2005). China's food sector is dominated by traditional small-scale stores but supermarkets are rapidly increasing. In 2002, supermarkets' share of total retail food sales was roughly 10% to 12% and it is expected to increase to 50% by 2010 (Gehlar & Rimini, 2005b). Over the medium to long term, the demand for imported almonds should increase as China, due to supply-side bottlenecks, does not have the production capacity to satisfy its future demand.

#### 5.2.4. Country exports

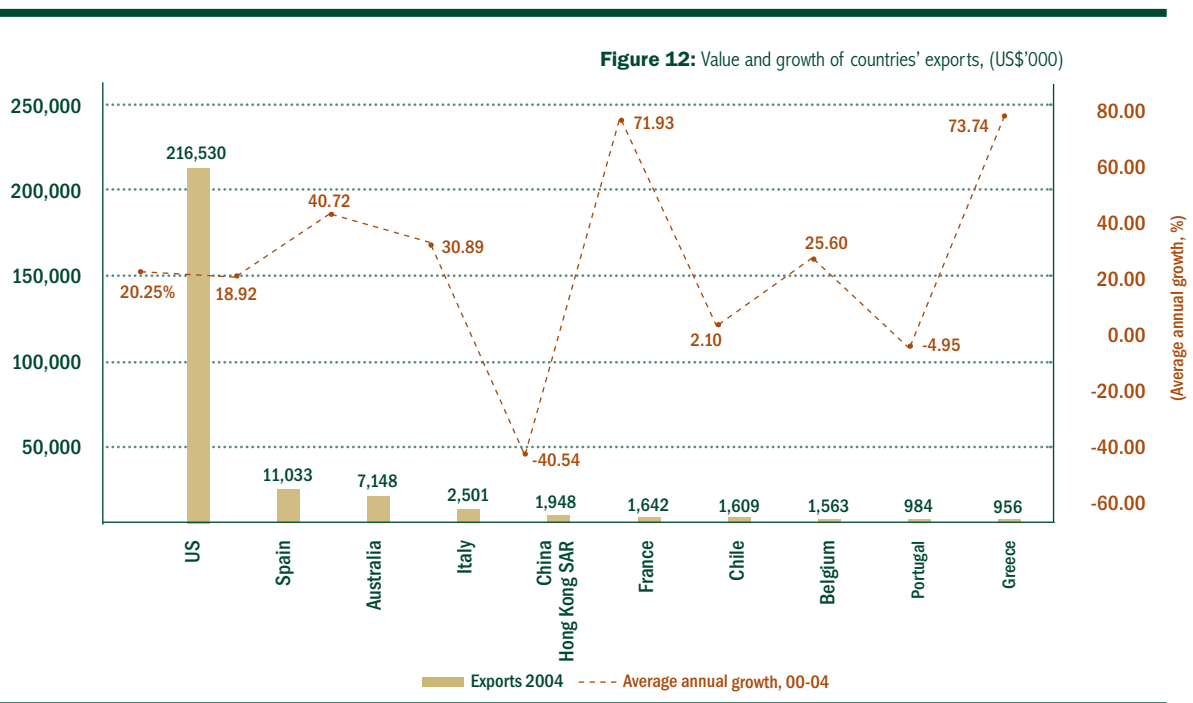
From figure 11 it is clear that the almond market is dominated by a handful of large exporters. In 2004, the top four exporters' share of the market was 95%. The US dominates this market with an 86.51% market share, followed by Spain with a 4.41% share. The reason for this huge differential arises from these countries' respective trading partners. Spain's major trading partners are the EU15 countries whose almond markets are established and prefer shelled almonds. The US's trading partners are more diversified, encompassing developed (Canada, and the EU) and developing nations (India, China and Korea). The consumers of in-shell almonds are mainly developing countries, in particular India and China. The US aggressively marketed its almonds in India and China and its share of the global export market for in-shell almonds increased from 76% in 2000 to 86% in 2004.

**Figure 11:** Countries' share of exports for 2004 by value (%)



Source: Comtrade





Source: Comtrade

From 2000 to 2004, the global export market for in-shell almonds attained an average annual growth rate of 16.53% (see figure 12). This growth was fuelled by India and China's demand for in-shell almonds. Over the short to medium term, the market's growth rate should remain relatively unchanged, but over the long term, both China and India's demand for in-shell almonds should decrease as the demand for processed food increases due to the development of the retail food sector and consumers' rising income. Before SADC invests in supplying this market, it should therefore be aware of sustainability issues. However, SADC could consider entering the Indian and Chinese markets to gain a foothold in their more lucrative shelled almond market in the future.

Seven of the top 10 exporters of in-shell almonds experienced phenomenal average annual growth rates from 2001 to 2004. However, these gains were generally off a low base, except for the US, which grew exports by 20.25% over the period. China is a re-export zone, and thus a drop in exports is due to a greater proportion of imported almonds being consumed locally.

The production of almonds is concentrated in a few areas due to climatic conditions. The US is the world's leading almond exporter and the possibility that its dominant position will be threatened is negligible. Australia is vying for the number two position within the next six years; since 2003 it has doubled its orchards to 18,000 ha, with Victoria as the hub. The Australian Almond Board is investing in technology and developing new cultivars to improve yields. The association is also forming links with private companies to pool and channel funds into priority

projects. The Australian Almond Board has conducted marketing campaigns to stimulate local and regional consumption, especially in New Zealand, which accounts for 21% of Australia's exports.

Australia's experience provides useful lessons for SADC producers, including securing a stable, growing, relatively close market for one's product. SADC countries need to consider whether they have sufficient domestic demand to support the development of an almond industry. And, is SADC's potential demand for almonds sufficient to exploit scale economies required to access global markets? The second lesson concerns the need to create an almond cluster in a geographical area and to pool resources through associations. Australia could be a potential threat to SADC producers, as one of its strategies is to gain access to markets by exploiting its counter-seasonal production capabilities. However, Australia could assist SADC producers to enter the almond market by sharing its knowledge through developmental agencies.

Greece is an emerging exporter. Greek almonds are known for their excellent quality and importers buy them for snack foods in western European markets. Greek almonds have distinctive characteristics and are not perfect substitutes for other more 'commercial' types of almonds. Greek exporters should not be a significant competitor to SADC producers, as the country's export market is predominately the Balkan States. In fact, Greece's emergence as an export hub to the Balkans bodes well for SADC producers, as Greece will import commercial varieties for re-export purposes.

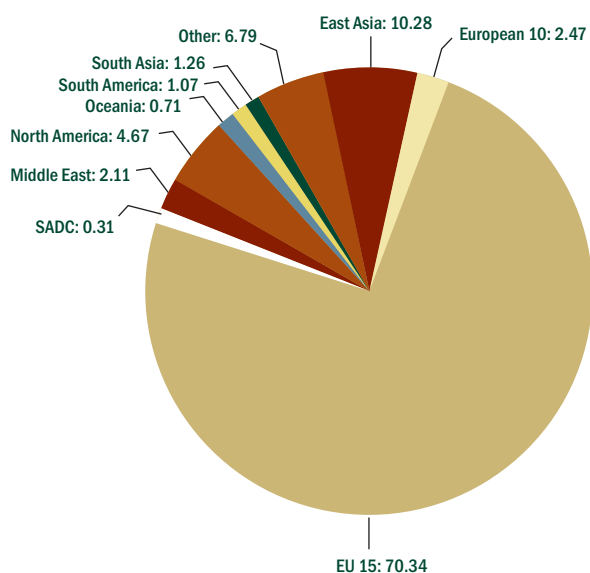
Chile's export strategy is to focus on countries where it enjoys a tariff advantage, such as Argentina, Brazil, Columbia, Venezuela, Spain, Italy, the Netherlands and India. SADC farmers could use this strategy to gain a foothold into markets.

## 5.3. Trade analysis of the shelled almond market

### 5.3.1. Regional imports

The EU 15 region is the predominant global importer of shelled almonds. During 2004 its share of the global import market was 70%, which overshadowed the second largest importer, East Asia, which accounted for a meagre 10% (see figure 13). The EU 15's dominance of the market is not surprising given Spain's status as Europe's premier almond hub and Greece's status as an almond hub for the Balkans. Although both of these countries produce almonds, the quantities are insufficient to satisfy local and regional demand. East Asia's imports are driven by China's domestic consumption and its re-export market.

**Figure 13:** Regions' share of imports for 2004 by value (%)

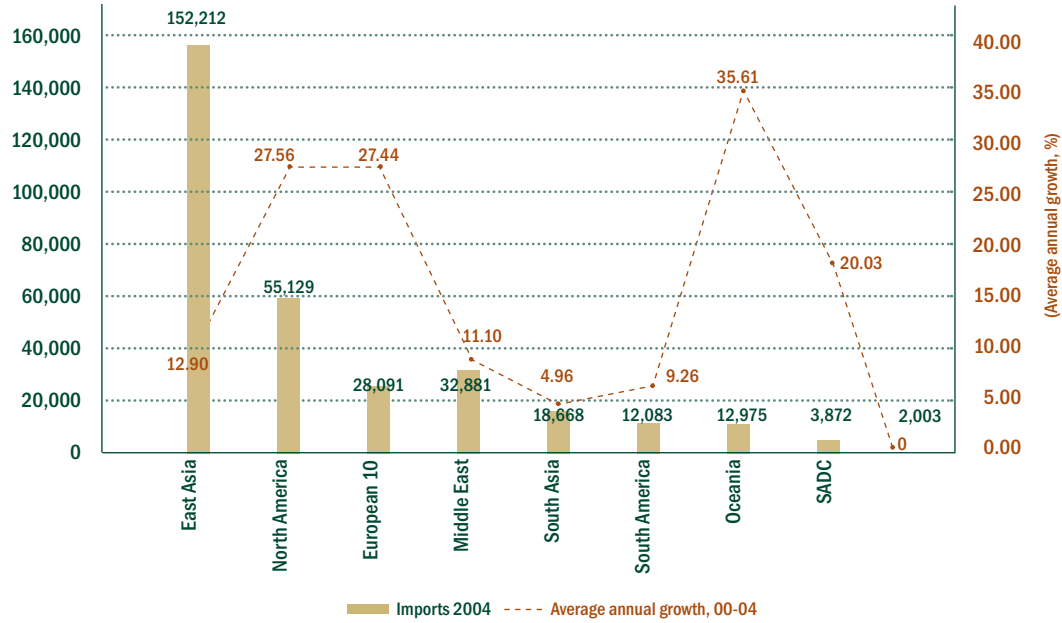


**Source:** Comtrade

Based on average annual growth rates calculated from 2000 to 2004, the demand for shelled almonds grew rapidly, faster than the demand for in-shell almonds, despite its lower base (see figure 14). Shelled almonds are a higher value product than in-shell almonds and the process to remove an almond's husk and outer-shell is labour intensive. This opens up opportunities for SADC growers to participate in a growing, value-added export market.

The fastest growing markets over the period were Oceania, North America, the EU 10 and SADC. These regions are geographically dispersed, which create varied export opportunities. Three out of the four regions experiencing rapid growth have a dominant regional supplier: the EU 10's regional supplier is Spain, Oceania's supplier is Australia and North America's supplier is the US. SADC is the only region without a central supplier.

Figure 14: Value and growth of regions' imports (US\$'000)

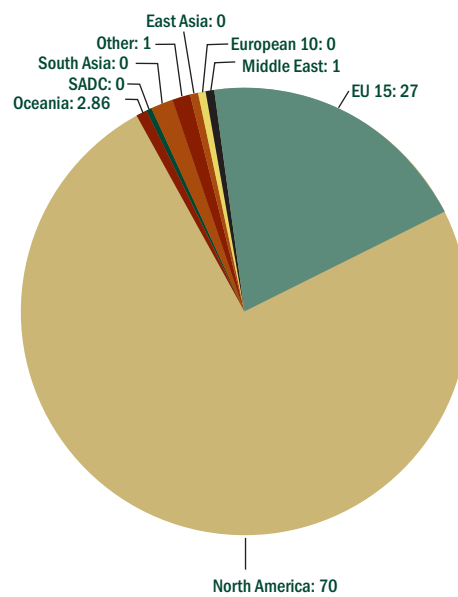


Source: Comtrade

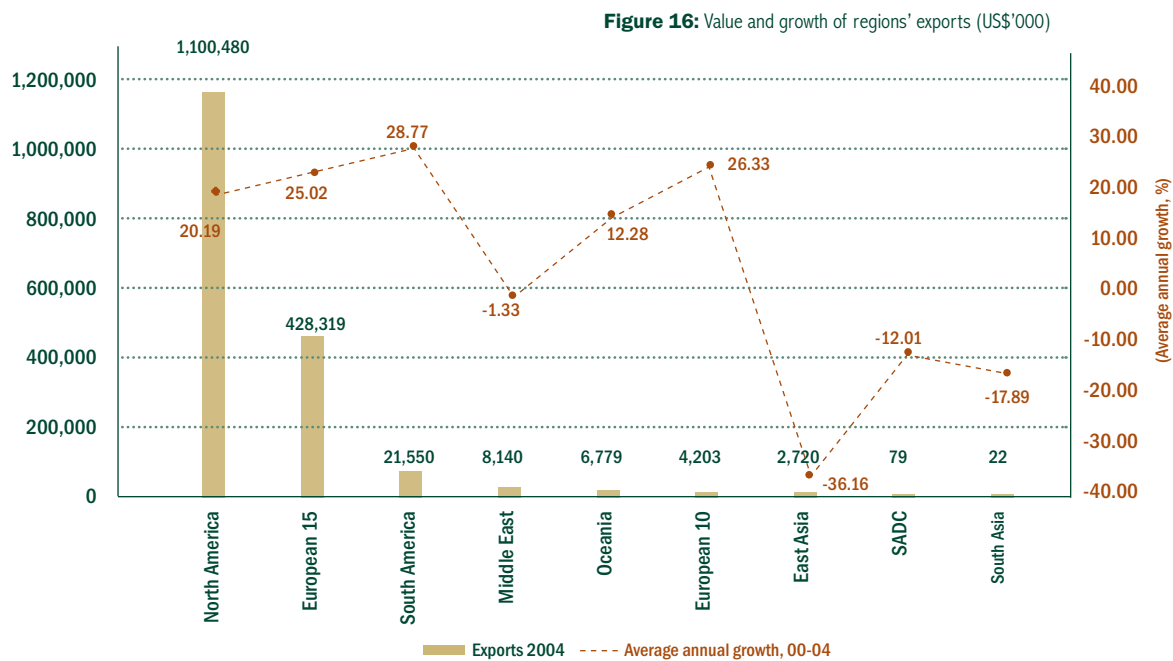
### 5.3.2. Regional exports

In 2004, the two largest regional exporters of shelled almonds – North America and the EU 15 – comprised 70% and 27% of the market, respectively (see figure 15). North America dominates the market due to the sheer volume of its production capacity, strong grower associations and a powerful global marketing network. This market's composition was stable from 2000 to 2004.

Figure 15: Regions' share of exports for 2004 by value (%)



Source: Comtrade



Source: Comtrade

**Table 7: Spain's trade matrix**

In-shell		Shelled	
Exports	Imports	Exports	Imports
US\$ 10,631,164	US\$ 3,800,152	US\$ 233,011,394	US\$ 294,786,893
Germany 39%	US 56%	Germany 40%	US 90%
Portugal 24%	Portugal 37%	France 14%	Italy 3%
Greece 15%	Greece 3%	Italy 11%	France 3%
France 4%	Tunisia 2%	The Netherlands 8%	Chile 1%
Italy 3%	Australia 1%	Switzerland 5%	Turkey 1%

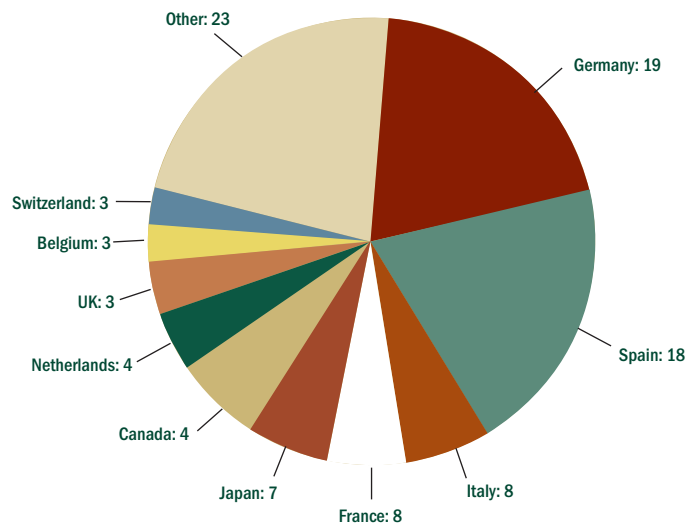
Source: Comtrade

From 2000 to 2004, both North America and the EU 15 reported strong annual average growth rates of 20% and 25%, respectively (see figure 16). The demand for almonds is strong and stable as established markets managed to maintain double-digit growth.

The EU 15 is a net importer of almonds, with Spain serving as Europe's almond hub. Spain imports almonds from the US and then re-exports them, either as a commodity or processed to the rest of Europe. Spain's food imports grew 22% from 2002 to 2003 to reach \$19.39-billion; however, its exports of the same products totalled \$23.59-billion and grew by 26% (see table 7).

Countries use historical links and/or preferential trade agreements to enter into extra-regional markets. Australia is an excellent example of a country that uses its colonial ties to enter a lucrative export market. In 2004, Australia's largest export market for shelled almonds was the UK. If historical ties are ignored, this export-import relationship does not seem to be plausible due to the vast distance and corresponding high transportation costs involved in exporting a low-value product. SADC growers could learn from the Australian export strategy and use old colonial ties to access markets.

**Figure 17:** Countries' share of imports for 2004, by value (%)



Source: Comtrade

### 5.3.3. Country imports

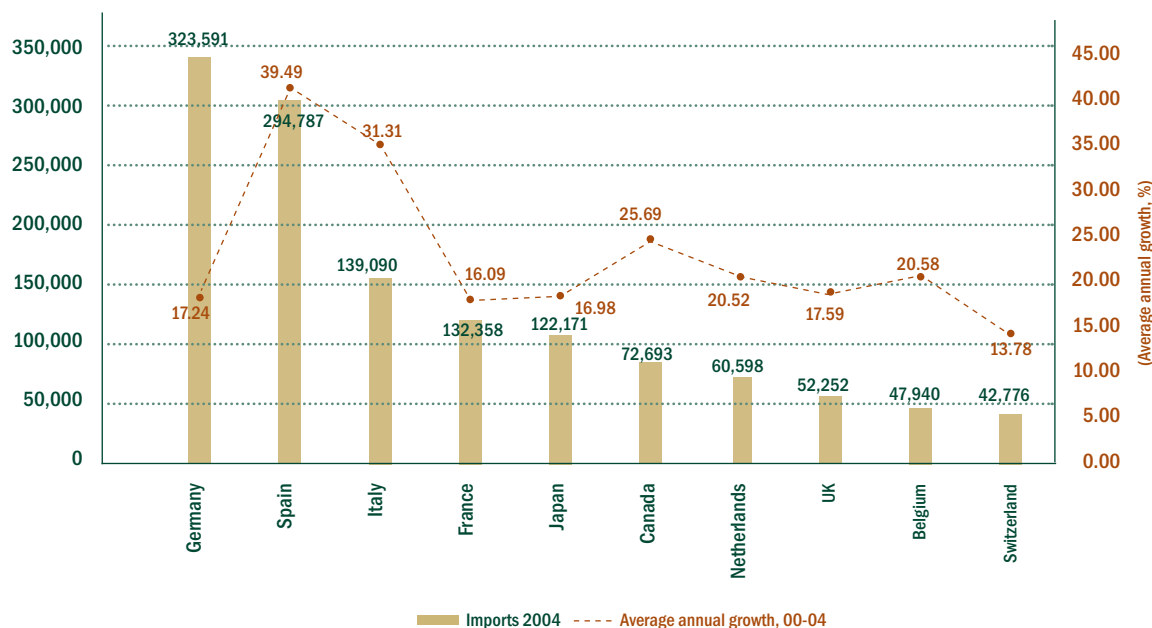
Figure 17 shows that the top 10 importing countries in 2004 comprised 77% of the market. The two biggest importers, Germany and Spain, accounted for 37% of global shelled almond exports. Eight of the top 10 importers of shelled almonds are EU 15 countries, which means this market is geographically concentrated. This has positive implications for SADC producers, which have preferential trading agreements with the EU, such as South Africa.

From 2000 to 2004 the import market for shelled almonds achieved an average annual growth rate of 21% (see figure 19). Over the period, the top 10 importers of shelled almonds maintained a double-digit annual average growth rate. Spain and Canada's growth performances were particularly notable, reaching 40% and 26%, respectively. When the trade data are analysed, a common trend emerges: established markets' average annual growth rate is lower than their emerging market counterparts. In addition, the absolute value of emerging market imports is significantly lower than that of established markets. Emerging import markets for shelled almonds are the former eastern bloc countries and South-East Asia (China, Thailand and Malaysia).

The value, volume and rate of growth of countries' imports of shelled almonds is greater than those for in-shell almonds. And the composition of the import market for shelled almonds is more diversified than its in-shell counterpart. If monetary and risk aspects are considered then exporters' primary focus should be the market for shelled almonds. This sub-section explores the factors that shape the three largest global importers' demand for shelled almonds.

In 2004, Germany was the largest importer of shelled almonds. Germany imports tree-nuts in bulk and re-packages or processes them. A large share of almonds earmarked for processing is used by the confectionery industry to produce marzipan (Lieberz, 2005). Retailers

Figure 18: Value and growth of countries' imports (US\$'000)



Source: Comtrade

rarely directly import products into Germany but rather use specialised import companies that distribute products to food processors, which in turn deliver products to retailers. It is relatively easy to export products into Germany, provided one uses the correct channels, as it has a well-developed importer network and distribution system (Lieberz, 2005). It is difficult, however, to promote new brands as private label products are popular.

Consumers and retailers are extremely price sensitive; however, this does not infer that parties are not concerned about food quality and safety issues. They want top quality at a discount and will sacrifice choice to pay less. Consumers are opting to shop at discount stores, which tend to stock a limited product range; typically one brand or private label per product. Therefore competition among suppliers to secure a place on a retailer's product list is fierce.

Although it is not a statutory requirement, it is impossible to market a product in Germany that does not carry the Green Dot, a recycling symbol which demonstrates that a product's packaging adheres to German Packaging and Waste Avoidance Law. For more information, refer to [www.gruener-punkt.de](http://www.gruener-punkt.de).

In 2004, Spain was the second largest importer of shelled almonds. The majority of Spain's imported almonds are used as food ingredients by the confectionery industry. Other industries that use imported almonds include the snack industry for preparing roasted almond snack packs and the sweet industry that processes almonds to produce nougat, marzipan, ice-cream and chocolate products. The Spanish market is price sensitive and relative prices determine the proportion of domestic compared to imported almonds used in almond-based products (Perez, 2003).

It is predicted that Spain's demand for imported shelled almonds will increase as its food processing industry continues to grow. In 2004,



Spain's food processing industry contributed 17% to total industrial production and consumed 70% of domestic agricultural production (Escudero, 2004). Raw materials comprise 58% of total production costs and are primarily sourced from domestic farmers or neighbouring EU members. There are exceptions, however. The US Department of Agriculture notes that Spanish confectioners will import more almonds from non-EU countries to produce processed products that are then exported to the EU. Food processors prefer to use US almonds due to their uniformity and low breakage rates.

Since 2000, Spain's retail food industry has undergone a process of consolidation. By 2004, the largest five food distribution groups accounted for over 50% of total sales. The consolidation of the industry has caused fierce competition. Food processors are more price sensitive regarding their raw material costs. Escudero (2004) notes that food producers have indicated that the growing purchasing power of the big food distribution groups allows retailers to demand lower prices from them. This has lowered prices and reduced profit margins throughout the value chain. The consolidation and expansion of Spain's food processing sector are increasing the demand for relatively cheap almonds. In this market a producer's profitability hinges on selling large quantities, at the cheapest possible price, by reducing the cost base. In essence, this market provides opportunities for low-cost growers that can export large quantities of almonds to exploit scale economies. EU countries have a cost advantage in the Spanish market because tariffs are not levied on their goods. However, Spain will import almonds from non-EU countries as Europe's demand is greater than its production capacity – which means that although SADC is not a low-cost producer of almonds it does not mean that it is frozen out of this market. SADC could supply almonds to Spain when supply is constrained and prices are at a premium. Essentially, SADC could export counter seasonally to pick up slack demand.

To bring a product into Spain and place it in the local market requires a local import agent. Fresh produce is distributed through a network of 22 public wholesale markets throughout the country. 50% of fresh produce is sold through traditional stores. Processed food is primarily sold through supermarkets (54.3%), hypermarkets (24.1%) and traditional outlets (13.9%) (Escudero, 2004). Establishing a contact to sell almonds to the food processing industry might be difficult, as three companies specialise in processing almonds into food ingredients. These companies are the largest importers of US almonds into Spain. This is a highly lucrative market and US exporters use their resources to protect it – entering into a price war here would be futile.

Perez (2003) notes that Spanish processed good producers are competitive in European markets due to tradition, know-how and logistics-immediate delivery. A marketing strategy for SADC producers is to go beyond seeing Spain as a final market, but rather as a gateway into



Europe by tapping into its logistical proficiency with European markets. Once Europe recognises SADC's almonds as a quality product, SADC producer co-operatives could export directly to Europe.

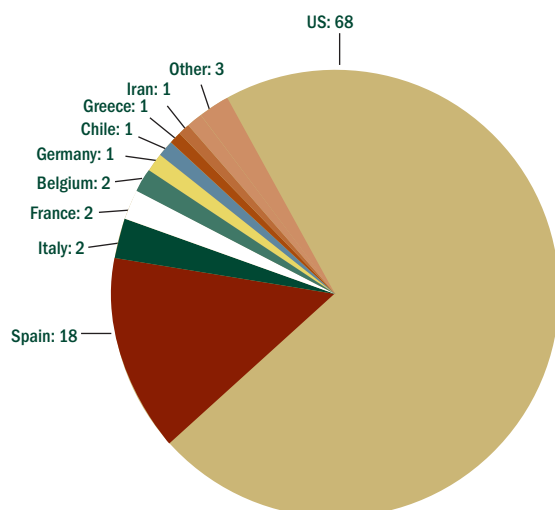
Although Italy is the fifth largest producer of almonds and falls within the top five exporters of in-shell and shelled almonds, it is a net importer of shelled almonds and relies on imports to satisfy domestic consumption. Given that the Italians have not invested in their orchards over the past decade, over the medium term production capacity is expected to decline, even though Italian consumption of almonds is growing. Italy's demand for imported shelled almonds should therefore increase. The majority of imported shelled almonds are used by the price sensitive confectionery industry – if the relative price of almonds increase compared to other tree nuts, substitutes are sought. Italy's almond market is relatively unstable and not necessarily optimum for SADC producers.

Greece is an emerging importer due to its status as a regional re-export hub to the Balkan states and insufficient production levels to satisfy local demand. Imported almonds are primarily consumed by the domestic confectionery industry (65%).

### 5.3.4. Country exports

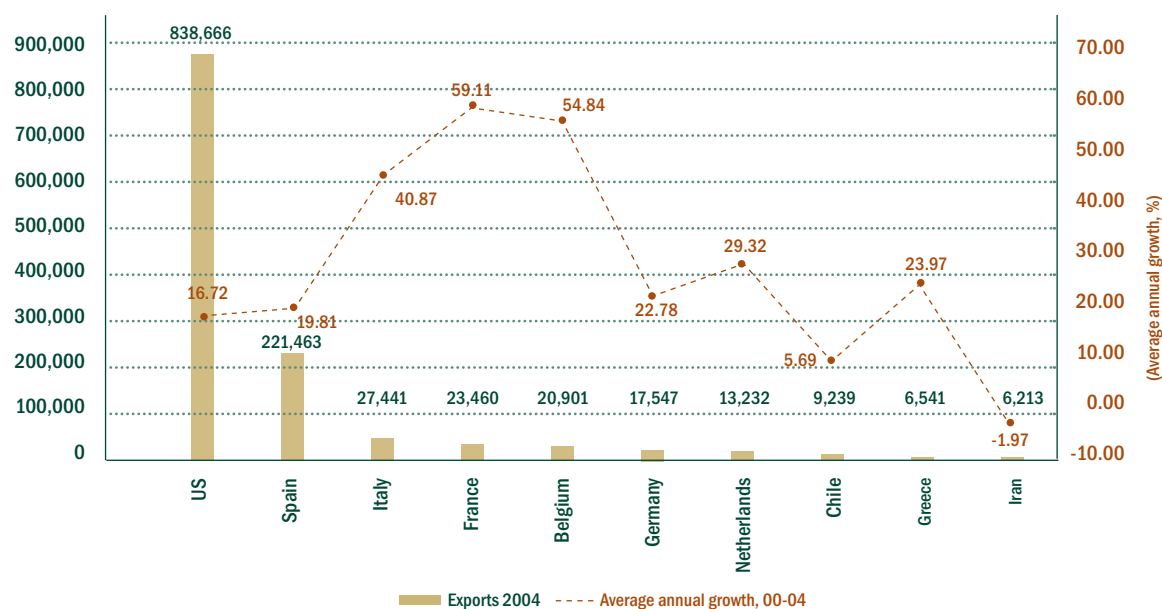
In 2004, the two biggest exporters of shelled almonds accounted for 86% of the market – the US with a 68% share, followed by Spain with 18% (see figure 19). From 2000 to 2004, the top 10 exporters of shelled almonds (of which seven are European countries) maintained stable market positions. Chile's inclusion in the top 10 exporters list

**Figure 19:** Countries' share of exports for 2004 by value (%)



Source: Comtrade

Figure 20 : Value and growth of countries' exports (US\$'000)



Source: Comtrade

should demonstrate to SADC producers that it is possible to compete successfully in this market. Chile, like most SADC countries, is an emerging producer, and therefore a useful case study for potential Southern African almond growers. Seven of Chile's top 10 importers are South American countries.

From 2000 to 2004, the global export market for shelled almonds, on an average annual basis, achieved growth of 18%. Eight out of the top 10 country exporters grew by at least 17%, with the two exceptions being Iran and Chile (see figure 20). Belgium, Germany and the Netherlands are re-exporters.

Spain is the second largest importer and exporter of shelled almonds. According to Perez (2003), half to two-thirds of Californian almonds imported into Spain are subsequently re-exported in the form of whole or blanched almonds and processed almonds (flour, dices and fillets) to other EU countries. The implication for SADC producers is that Spain is an important market as it serves as a gateway into Europe; however, this market is highly contested because of the sheer volume of demand rather than prices and potential SADC exporters should pool their resources.

#### 5.4. SADC trade

SADC's imports of in-shell and shelled almonds are negligible, comprising less than 1% of the world's total imports for in-shell and shelled almonds from 2000 to 2004 (see tables 8 and 9). This trend was briefly broken in 2001 for shelled almonds when SADC's share of imports was 1.08%.

**Table 8:** SADC's imports of in-shell almonds

Country	Year					Growth (%)	Percentage
	2000	2001	2002	2003	2004	00-04	2004
Botswana	73,084	28,036					0.00
Madagascar	1,584	946	146	5,334			0.00
Malawi	1,700		282	702	1,230	-6.27	0.13
Mauritius	2,721	38,740	35,398	38,227	46,047	76.07	5.01
Mozambique	170,171	3,460	802				0.00
Namibia	22,032	29,016	21,118	26,352			0.00
South Africa	391,783	24,150	31,950	670,422	860,393	17.04	93.66
Swaziland	9,228	3,004	5,952				0.00
Tanzania	2,672	6,629	2,939	3,686	6,503	19.47	0.71
Zambia	406	90	528	96	282	-7.03	0.03
Zimbabwe		186	10,226		2,144		0.23
SADC total	677,381	136,258	111,343	746,822	918,603	6.28	
World total	109,063,731	87,792,174	91,561,980	106,430,814	159,713,995	7.93	
SADC percentage	0.62	0.16	0.12	0.70	0.58		

Source: Comtrade

**Table 9:** SADC's imports of shelled almonds

Country	Year					Growth (%)	Percentage
	2000	2001	2002	2003	2004	00-04	2004
Botswana	19,930	8,960				-1	0
Madagascar	22,911	17,907	10,631	100,626	32,449	9	0
Malawi		357	1,497	1,962	2,488		0
Mauritius	483,715	643,423	734,098	965,312	1,020,643	21	7
Mozambique	4,914	27,842	5,698			-100	0
Namibia	33,318	10,588	9,044	26,346		-100	0
South Africa	6,835,900	7,697,794	6,298,398	10,416,695	14,545,517	21	93
Swaziland	52,798	17,720	2,438			-100	0
Tanzania	21,305	20,489	39,496	24,711	29,646	9	0
Zambia	24	2,720	6,144	4,296	2,712	226	0
Zimbabwe		6,844	33,499		25,546		0
SADC total	7,474,815	8,454,644	7,140,943	11,539,918	15,659,001	20	100
World total	786,496,706	780,341,827	913,408,290	1,299,842,607	1,667,132,116	21	
SADC percentage	0.98	1.08	0.78	0.94	0.94		

Source: Comtrade

South Africa and Mauritius' imports of shelled almonds are significantly greater than their imports of in-shell almonds. Based on the huge differential in the value and volume of trade in shelled compared to in-shell almonds, and also because shelled almonds are a higher value product, this section focuses on the feasibility of sourcing shelled almonds from SADC growers.

In 2004, South Africa and Mauritius, because of their more affluent and health-conscious populations, accounted for about 98% of SADC's imports of shelled almonds. South Africa imports 93% of SADC's shelled almonds for its food processing sector and snack industry.

**Table 10:** SADC's exports of in-shell almonds

Country	Year					Growth (%)	Percentage
	2000	2001	2002	2003	2004	00-04	2004
Botswana	228	70					
Malawi				152	5,072		14.00
Mauritius					80		0,22
Namibia		2,396	5,486				
South Africa	18,853	30,781	436	10,372	10,098	-14.45	27.88
Swaziland	327,748	181,550	157,414				
Tanzania	5,708	227,254	238,600	126,411	20,678	37.96	57.09
Zambia					290		0.80
Zimbabwe	18						
<b>SADC total</b>	<b>352,555</b>	<b>442,051</b>	<b>401,936</b>	<b>136,935</b>	<b>36,218</b>	<b>-43.39</b>	<b>100.00</b>
<b>World total</b>	<b>135,729,909</b>	<b>130,967,746</b>	<b>140,159,420</b>	<b>214,296,433</b>	<b>250,292,776</b>	<b>16.53</b>	
<b>SADC percentage</b>	<b>0.26</b>	<b>0.34</b>	<b>0.29</b>	<b>0.06</b>	<b>0.01</b>		

Source: Comtrade

**Table 11:** SADC's exports of shelled almonds

Country	Year					Growth (%)	Percentage
	2000	2001	2002	2003	2004	00-04	2004
Botswana		54					
Madagascar		43,492		2,385			
Malawi				614,199	77,936		45.27
Mauritius	706		872	1,270	11,458	100,71	6.66
Mozambique			116,345				
Namibia			1,930				
South Africa	136,770	72,440	48,452	79,587	47,518	-23.23	27.60
Swaziland	87,776	194,016	13,274				
Tanzania			3,891	9,063	35,254		20.48
Zambia	41,294	22,502					
Zimbabwe	18						
<b>SADC total</b>	<b>266,564</b>	<b>332,504</b>	<b>184,764</b>	<b>706,504</b>	<b>172,166</b>	<b>-10.35</b>	<b>100.00</b>
<b>World total</b>	<b>743,190,790</b>	<b>780,447,541</b>	<b>1,014,460,600</b>	<b>1,221,389,897</b>	<b>1,587,317,012</b>	<b>20.89</b>	
<b>SADC percentage</b>	<b>0.04</b>	<b>0.04</b>	<b>0.02</b>	<b>0.06</b>	<b>0.01</b>		

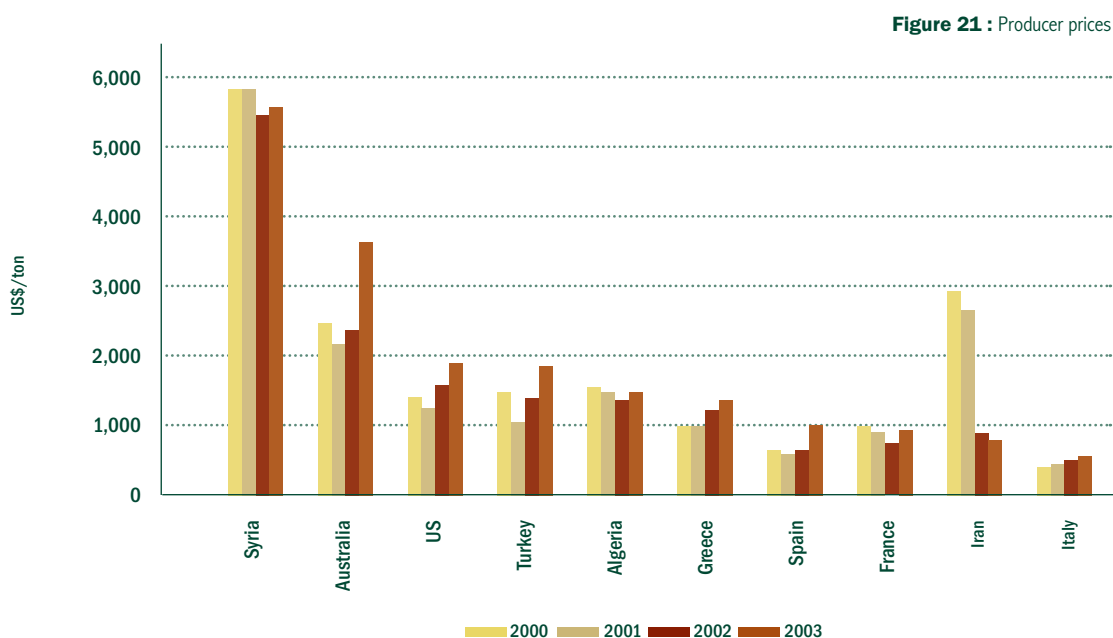
Source: Comtrade

South Africa and Mauritius' demand for almonds is growing at an average annual rate of 21% from 2000 to 2004. Based on trade data, South Africa and Mauritius have the potential demand to support the development of a regional almond market. SADC's share of in-shell and shelled almond exports are marginal, with the main exporters being Malawi, Tanzania and South Africa (see tables 10 and 11). The average annual growth rate of SADC's almond exports is below the global average growth rate.

## 6. Prices

### 6.1. Producer prices

Quoting annual prices masks seasonal fluctuations that arise from weather-induced production changes. In the short-run the supply-side production capacity is more inelastic than demand, and as a result producer prices tend to fluctuate on a monthly basis. As a result revenues per acre are not stable. In this type of market, cash-flow planning must be a critical part of a grower's strategy.



Source: FAOSTAT

Generally, producer prices can be grouped into three baskets – high, average and low. Syria, Australia and Iran's prices tend to be high, which hinder a country's ability to export (see figure 21). So it is not surprising that Syria is a large producer but has marginal exports. In Syria and Iran, producers are protected by high tariffs. Although Australia's tariffs are not high, the factor driving Australia's producer prices is increased investment in infrastructure without a corresponding increase in supply to benefit from scale economies. Therefore, price increases do not represent inefficiencies but investment in productive capacity.

Prices for the US, Turkey, Algeria and Greece are mid-level. Both the US and Greece produce almonds as a commercial crop and aggressively export. SADC growers should ensure that their producer prices fall within a middle range.

Spain, France and Italy fall within the low producer price basket. France and Italy farm almonds on marginal land and are decreasing

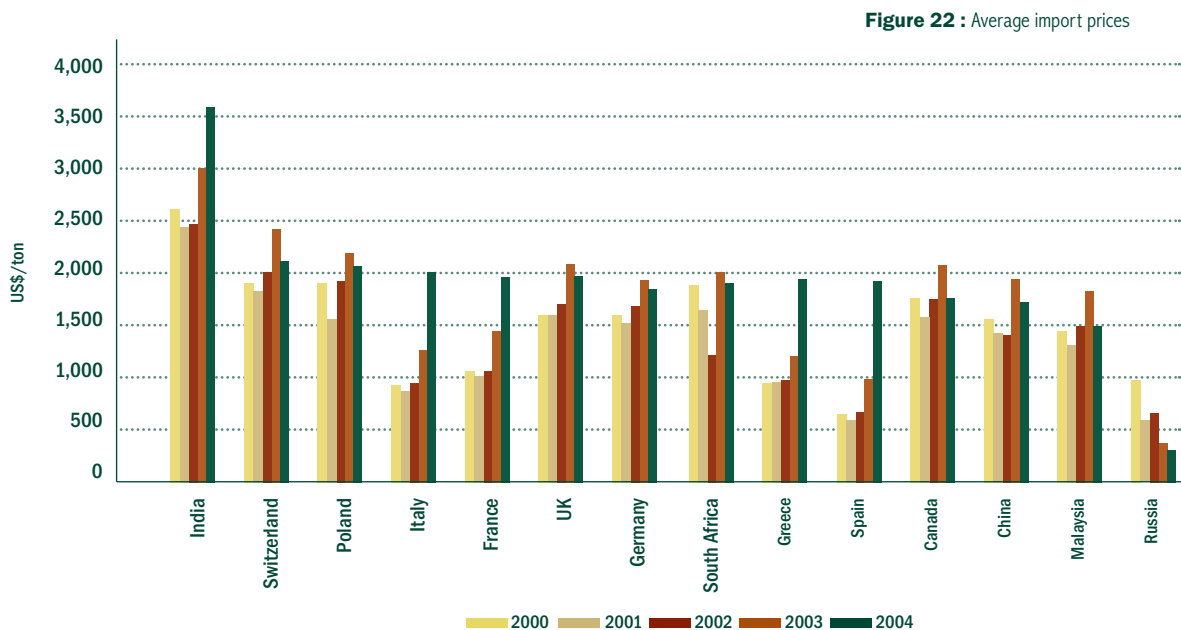
farming activity. Spain does not farm almonds commercially and as a result its crop is erratic as it is dependent on weather patterns. Other producers could compete against Spain using non-price variables such as security of supply.

Producer prices for almonds in various countries have increased in recent years. Producer prices experienced buoyant growth in Spain, the US, Greece and Australia, increasing by 18%, 14%, 12% and 11%, respectively. Price increases were primarily driven by increasing demand in local and export markets. Rapid increases in market prices in specific countries, most notably Greece, the US and Australia, caused farmers to plant more almond trees.

Over the medium to long term, the industry's demand side has greater flexibility than its supply side. In the medium term, keeping prices at their current level is dependent on stimulating demand.

## 6.2 Average import prices

According to Zekliziotis (2006), import prices are strongly influenced by US and Spanish production and Chinese and Russian demand, the main target of American almond exporters. Although countries' 2004 import prices vary, they are within a tight range, roughly \$1,600 to \$2,200 per ton (see figure 22). The exceptions are India, Russia and Malaysia. India's high prices reflect market inefficiencies, high tariffs, onerous phytosanitary requirements and supply-side bottlenecks caused by a fragmented value chain. For example, farmers tend to receive a small share of the consumer price, approximately 25% in the case of unprocessed vegetables. Physical losses in the food chain are high as well, roughly 40% for horticultural products (Gehlar & Regmi, 2005b). In China, average import prices are higher than producer prices as imported almonds are subject to custom duties and 10% value-added tax (VAT).



Source: FAOSTAT

On average, the growth rate of import prices for 14 countries contained in table 12 has remained relatively stable, except for Italy, France, Spain and Russia. Even if these countries' prices are included in our sample, the sample's average growth rate and median from 2000 to 2004 was 5% and 3%, respectively.

**Table 12:** Selection of import prices in US\$/ton

Country	Year					Growth (%)	
	2000	2001	2002	2003	2004	00-04	00-03
India	2,697.17	2,344.07	2,445.38	2,995.12	3,656.87	7.91	3.55
Switzerland	1,925.09	1,830.99	1,998.61	2,373.16	2,150.99	2.81	7.22
Poland	1,943.66	1,717.69	1,936.78	2,329.79	2,128.12	2.29	6.23
Italy	959.84	889.38	947.77	1,188.57	1,982.27	19.88	7.38
France	1,081.95	1,011.59	1,090.37	1,348.72	1,952.47	15.90	7.62
UK	1,642.26	1,626.65	1,750.67	2,142.86	1,908.66	3.83	9.27
Germany	1,530.71	1,470.13	1,597.53	1,960.32	1,871.35	5.15	8.60
South Africa	1,953.85	1,601.19	1,356.69	1,994.62	1,853.47	-1.31	0.69
Greece	959.80	952.25	979.33	1,139.40	1,837.79	17.63	5.88
Spain	782.46	735.66	804.23	984.64	1,758.57	22.44	7.96
Canada	1,746.52	1,663.54	1,745.83	2,054.54	1,737.77	-0.13	5.41
China	1,639.48	1,405.81	1,391.78	1,957.22	1,715.10	1.13	6.08
Malaysia	1,433.33	1,414.94	1,507.52	1,889.83	1,485.88	0.90	9.65
Russia	889.53	674.59	714.56	414.31	245.90	-27.49	-22.48
<b>Average growth</b>						5.07	4.51
<b>Median</b>						3.32	6.73

Source: FAOSTAT

### 6.3. Average export prices

Figure 23 illustrates that export prices tend to fluctuate at around \$2,000 per ton. The export prices of Australia, Italy, Greece Spain and Chile move in a close band, while the US's export price is marginally below these countries' prices. This can be attributed to the US government's active role in encouraging growers to export their produce. Iran and Syria's export prices are very low; however, these countries are marginal exporters and their low prices will therefore not affect export prices. Moreover, Syria's export price is unsustainable as it is significantly below its producer price; as a result it is not a viable long-term option. Although Australia's export product is also sold for less than its producer price, the Australians have identified the almond industry as an export commodity and perhaps believe that cutting prices in the short term will give them a foothold in the industry over the long term.

Both the EU and China subsidise exports. The EU provides an export subsidy for shelled almonds of 24 Euros per metric ton, while Chinese nut exporters receive a five percent tax rebate after their products have been exported. Since current policy requires exporters to provide evidence showing that their nuts are sourced from farmers, exporters argue that the policy is impractical and cumbersome (Bugang & Sanchez, 2006).



Source: FAOSTAT



## 7. Market access

### 7.1. Tariffs

**Table 13:** Market tariffs

Country	Tariff
India In-shell Shelled	Rs 35/kg Rs 65/ kg plus 2% Education Cess= Rs 66.3 / kg
China In-shell Shelled	24.0% plus 13.0% VAT = 40.12% 10.0% plus 13.0% VAT =24.30%
European Union Members:	Preferential tariff: 0% (applicable to in-shell and shelled almonds)
Canada	MFN duties: 0% (applicable to in-shell and shelled almonds)
Australia	MFN duties: 5% (applicable to in-shell and shelled almonds)
Turkey	MFN duties: 43.2% (applicable to in-shell and shelled almonds)
Syria	General tariff: 58%
Switzerland	MFN duties: 0% (applicable to in-shell and shelled almonds)
Russian Federation	General tariff: 5% (applicable to in-shell and shelled almonds)

Source: TradeMap

The US, the world's dominant almond producer, faces a zero tariff rate in the EU, so Southern African exporters cannot use tariffs as a tool to gain a price advantage over their American counterparts. The EU does not impose any tariff quotas on bitter almonds, code 0802 1110 (in-shell) and 08021210 (shelled). For more information on the EU's tariffs, visit <http://europa.eu.int/comm/taxationcustoms/dds/en/tarhome.html>.

### 7.2. Non-tariff barriers

#### 7.2.1. Food quality issues

EU regulations stipulate a five to 10 micrograms/kilogram limit for nuts subject to sorting or other physical treatment before human

**Table 14:** Aflatoxin tolerances

Country	Aflatoxin tolerances
India	30 microgram/kg (B1, B2, and G2 combined)
China	20 microgram/kg (B1, B2, and G2 combined)
EU (Directive 98/53/EC & 466/2001)	Direct human consumption / ingredient in foodstuffs: 4microgram/kg (B1, B2, and G2 combined) and 2 microgram/kg of BI: Sorted/other physical treatment before human consumption:10 microgram/kg (B1, B2, and G2 combined) and 5 microgram/kg of BI
Canada	15 microgram/kg (B1, B2, and G2 combined)
Malaysia	35 microgram/kg (B1, B2, and G2 combined)
Australia	15 microgram/kg (B1, B2, and G2 combined)
Turkey	10 microgram/kg (B1, B2, and G2 combined) and 5 microgram/kg of BI
Hong Kong	15 microgram/kg (B1, B2, and G2 combined) and 15 microgram/kg of BI
Switzerland	4 microgram/kg (B1, B2, and G2 combined) and 2 microgram/kg of BI
Russian Federation	5 microgram/kg of B1

Source: Californian Almond Association

consumption or use as an ingredient in foodstuffs. However, this is based on the premise that the process of sorting or physical treatment will reduce aflatoxin to stipulated levels for human consumption, in this case 2 PPB and 4 PPB limits. For more information regarding the EU's maximum level of aflatoxin permitted in Dried Fruit and Nuts, refer to the EU Official Journal L077, published on 16 March 2001, pp1-3 (<http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/1077/107720010316en00010013.pdf>). For more information about Europe's food safety and quality regulations, refer to the Food and Agricultural Import Regulations and Standards Report, prepared by FAS, at <http://www.useu.be/agri/usda.html>.

Another issue regarding the EU's aflatoxin policy is the manner in which it is implemented. According to EU standards "when aflatoxin was detected in a shipment of imported almonds, all subsequent incoming almond shipments from the country of origin were required to be tested and were held in port until test results were obtained" (Perez, 2003). This procedure was only lifted when 10 consecutive shipments from the country of origin's aflatoxin levels were within the stipulated levels.

In Spain when aflatoxin is detected in a shipment of imported almonds, mandatory testing is required only on subsequent shipments from the originating grower or packer. The fact that this procedure is applied only at firm and not at country level in Spain reduces importers' exposure to costly, time-consuming bureaucratic procedures. This procedure can, however, only be applied if shipping documentation identifies the originating grower or packer. In addition, Spanish authorities have reduced the number of satisfactory tests for lifting alerts from 10 to three (Perez, 2003).

According to EU regulations released on 1 January 2006 (EC 882/2004), member states have the choice to decide if rejected products should be destroyed or returned to an exporter.

If products do not satisfy EU standards with respect to class classification regarding quality, size, labelling, packaging and presentation, they are not allowed to be sold. Enforcement of these standards is the responsibility of each member state. Farm-gate sales and products used for processing do not have to meet these standards.

Importing nuts into India is onerous because of strict phytosanitary requirements introduced in 2004 (refer to <http://plantquarantineindia.org/pdffiles/PQorder2003.pdf>). In China imported nuts products and domestic marketed nuts must adhere to Hygienic Standard for Nut (GB16326-2005); refer to the GAIN report CH3087 for further details.

### **7.2.2. Agricultural policies**

In the EU the production of almonds is concentrated in poorer countries. Almonds have been grown in these areas for generations. This has created a sensitive political situation, resulting in policies that

subsidise farmers. This affects foreign producers' ability to compete. The EU also boosts growers' selling price for shelled almonds by giving them an export subsidy of 24 Euros per metric ton when they export to non-EC countries, excluding the US.

The following support policies are discussed at length in trade literature and are important. First, operational funds are distributed via producer organisations, which are voluntary organisations comprising growers and co-operatives. Under this policy the PO determines its contribution towards its Operational Fund for the year. The PO's contribution is matched by the EU, capped at 4.1% of the PO's annual sales. According to the US Department of Agriculture, POs generally use the subsidy to finance fruit and vegetable withdrawal operations, excluding nuts, and invest in operational programmes, such as improving irrigation systems, upgrading technical systems and environmental protection measures (Perez, 2003).

In the second place, the CAP contains a financial support programme for tree nut producers. From 2005, EU tree nut (including carob) producers are eligible to receive 120.75 Euro per hectare from the EU, which may be supplemented by an equal amount by member states' funds from their budget. The maximum payment an EU producer can receive is 241.50 Euro per hectare. Under the CAP Programme, an EU member's total payment is capped based on the Maximum Guarantee Area of stipulated hectares. A grower's orchard must be at least 0.2 hectares to qualify for the subsidy. Growers must apply individually for the subsidy and must be a member of a PO (Ramos & Medina, 2006).

The US does not subsidise growers' production costs, unless a value is assigned to subsidised irrigation water. Instead, the US indirectly subsidises industry marketing activities, such as organising trade missions, sponsoring trade shows and providing market information. Exporters from other countries can strategically place themselves in the market to benefit from the US government's sponsored marketing initiatives. As a result the US farmers' marketing subsidy should not be perceived as a direct threat.





## 8. Marketing activities

### 8.1. Marketing activities in developed and developing markets

Taste and trends shape the food industry's evolution. As consumer preferences have cultural variations, the food industry of specific countries has certain nuances. These nuances are most evident between developing and developed countries. If markets have different characteristics, they require different marketing approaches and strategies.

In developed countries, consumers' demand for a product is driven by traditional factors, such as product prices and income levels, but also intangibles. As consumers become more sophisticated, the relative value attributed to intangible factors increases. Intangible value is associated with product quality, which is determined by a product's sensory, health, process (organic versus commercial) and convenience attributes. Apart from facing more sophisticated customers, the retail industry is becoming more competitive as a result of consolidation. Retailers are therefore faced with two challenges: creating loyal customers to ensure repeat business and informing consumers about a product's intangible characteristics.

Retailers have responded to this challenge by creating private branded products. As a brand is associated exclusively with a particular retailer, investing in a branded product exposes retailers to greater risk but also reward and places greater responsibility for product design, quality control and product liability on the retailer (Codron et al., 2005). Retailers can reduce their potential risk exposure by exerting more influence on the overall value creation process in the food chain. This enables the retailer to ensure that products bear the retailer's mark in terms of design, positioning and consistent quality, and has changed the manner in which retailers interact with suppliers. In addition to traditional factors like price, quality and the ability to supply needed volume, the ability to trace back products and the willingness of suppliers to engage in long-term relationships with retailers are important selection criteria (Skytte & Blunch, 2001, in Codron et al., 2005). This has led to the backward integration of the supply chain.

In developed countries private branding is popular, especially in Europe, which is one of the largest and also one of the fastest growing markets for almonds. In Switzerland the retail share of private labels is 50% to 60%, while it is 20% to 40% in most other Western European countries (Codron et al., 2005). Given the importance of retailers' private brands in the European market, a marketing strategy that SADC producers should investigate is entering into a supply agreement with a large retailer. Another advantage of this type of arrangement for potential SADC producers is that crops must be grown to satisfy stipulated criteria and are regularly audited. Given these control mechanisms SADC, producers will receive training and supply-side inputs that are

traditionally considered factors constraining SADC agricultural production. It may be argued that small farmers do not have the resources to service large supermarket contracts, and as a result these contracts are limited to commercial farmers. If this is the case, commercial farmers could form supply networks that incorporates small-scale farmers into their production network.

The retail food sector in developing countries, primarily in upper-middle income countries, is in transition. The industry's structure is moving away from small general dealers and markets towards supermarket chains. This change affects the ease with which SADC almond growers can access the retail food market. A supermarket chain invests in centralised warehousing and distribution centres when it has more than 10 stores in a geographic area. According to Coyle, 2005, centralised procurement and distribution functions broaden the geographic reach of a firm's business to include more distant regional and national suppliers, displacing traditional, localised channels in the process. Thus the development and proliferation of supermarkets throughout the developing world should provide additional access points for SADC exporters to supply these markets. This statement is especially pertinent to the Asian market. The consumption of almonds is rapidly increasing throughout Asia. Exporting agricultural products to this market has in the past been difficult due to supply-side bottlenecks. The emergence of supermarkets, coupled with the modernisation of infrastructure – in particular port facilities – has made it easier and more cost effective for supermarket chains to source products from foreign suppliers than their domestic counterparts, as domestic producers' cold chain management and access to transportation infrastructure are limited.

## 8.2. Diversification

The size of a market with respect to its value and growth rate affect one's marketing activities. Empirical evidence indicates that market sizes, as indicated by the value of retail sales, are much larger in high-income countries, but market growth has generally been faster among developing countries (Gehlar & Regmi, 2005a). Furthermore, while retail sales of packaged foods have grown at about 2% to 3% annually in high-income countries, they have grown much faster amongst developing countries, ranging from 7% in upper-middle-income countries to 28% in lower-middle-income countries (Gehlar & Regmi, 2005a). The growth in middle-income countries' consumption of processed food was driven by Eastern European countries, such as Romania, Poland and Hungary. Analysts predict that in five years' time, the next boom market for packaged foods will be East and South Asia, in particular China, Thailand, the Philippines, Indonesia, Vietnam and India. This discussion illustrates that almond growers and marketers should target diversified markets in various regions and at various stages of development. When potential exporters select a market portfolio, they should take

into consideration which markets have a short-, medium- and long-term potential. For example, a small market that is growing rapidly may be a good long-term prospect but in the short term it is a peripheral market. Based on the data presented in this report, the developing markets for almonds that provide medium- or long-term export potential are India, China, Malaysia, Romania, Hungary and the Russian Federation.

### 8.3. Marketing techniques

Based on the value chain discussion in section 1, handlers serve as the middle-man between growers and retailers. They integrate and interface with the market's supply and demand side and have a good understanding of the market's needs and growers' capabilities. For example, handlers have information about the size, value and whereabouts of different types of markets, such as specialised high-quality markets versus bulk commodity markets that favour standard industrial production. The easiest way for importers to gain current information to match their product quality characteristics against market requirements is to obtain information and recommendations from handlers.

### 8.4. Way forward

The following strategies should be considered when one enters into the almond market:

- Develop a crop diversification strategy: The almond industry's supply side is relatively inflexible. As a result, short-term market adjustments take place through prices, therefore prices are cyclical and can be volatile. Financial instruments have not been developed to hedge against price fluctuations. Growers that follow a crop diversification strategy cushion risk by growing other tree or vine crops that use similar equipment and require comparable technical knowledge.
- Form an industry association to integrate activities throughout the value chain: The costs associated with producing almonds are largely fixed; variable costs are relatively small. Almonds are classified as a low-value, bulk commodity and their price is determined by the market. In this type of market, a grower's profitability is driven by reducing costs through exploiting economies of scale and increasing sales. Market organisation is important to manage production variability, to pool resources to invest in infrastructure, to stimulate demand for products, to develop new products and to access export markets. Therefore the structure of SADC's almond industry will affect its competitiveness. Leading producers and exporters of almonds, such as America and Spain, have geographically concentrated production and processing activities in key areas and have strong industry associations to market their product.

- Create a two-pronged market strategy. Trade data illustrate that a region or market's buying and selling activity is dominated by a handful of big consumers and producers, while the remainder of the market has a multitude of small players. For example, large import markets such as Spain, China, India and Germany tend to source between 70% to 90% of their imports from a bulk supplier, normally the US, and two other established suppliers, normally Spain or Italy. The implication is that relatively small producers such as SADC should pick up an established market's slack. Even though a grower's percentage of an established market's imports will be small, the absolute value will be large. This strategy will also allow SADC growers to benefit from the US's extensive marketing campaigns. However, in emerging markets that are experiencing rapid growth off a small base, SADC growers should opt for an aggressive, pro-active strategy. The emerging markets for almonds tend to be in Asia and the former Soviet bloc. Traditional dominant exporters do not have a significant advantage compared to SADC exporters in these markets with respect to tariffs, non-tariffs barriers and cultural affiliations. Irrespective of the type of market SADC growers target, they should be aware of a region or market's feeder hub, as this will provide a gateway into numerous other markets. In addition, SADC growers should use counter-seasonal tendencies to their advantage. According to Huang, 2004, the demand for year-round supplies has created market niches for non-traditional sources; as a consequence, if a country can supply a critical market niche when supply is low and prices are high, it may have a viable industry, even if it is exporting for a relatively short period.





## 9. Conclusion

An almond tree only bears fruit four years after it has been planted. This has two important consequences. First, one's ability to assess potential supply requires information about planting activity. Secondly, the industry's supply-side is rigid and cannot respond to demand variations in the short term. The unresponsive nature of supply has the potential to expose the industry to price volatility. To assess the industry's prospects it is important to understand the rate at which major producers are expanding their orchards and the resources they have allocated to marketing activities. Given the productive capacity and marketing strength of the US almond industry, it is the world's dominant grower and exporter of almonds, and thus essentially determines the global market supply. The US's planting activity stabilised from 2003, which means the supply of almonds will increase and then taper off in 2010. The US is aware of the potential for a glut and have started a marketing campaign to increase the demand for almonds.

The US has the expertise, infrastructure and financial resources to conduct global marketing campaigns to stimulate the demand for almonds. Greece, Turkey, Chile and Australia plan to expand their orchards, although their added crops to the market are off a relatively low base, and the impact will be mitigated by Spain and Italy's plans to scale down production.

Due to global rising per capita incomes, the demand for almonds is increasing. Urbanisation, the westernisation of diets and the redefinition of the family unit have increased consumers' demand for convenience, exotic and health foods. The demand for these products tends to be concentrated among consumers in developed countries and the middle class of middle-income countries. The demand for almonds is driven by emerging economies in Eastern Europe and Asia, especially India and China. These countries have a retail food sector that is moving towards adopting a supermarket system, which stocks more processed foods and offers a wider product selection.

Regional trade patterns indicate that the almond industry comprises a two-tiered market system. The first tier comprises dominant growers that export their produce into second tier re-export hubs. Almonds are processed in the second tier market and re-exported. The first level of trade is extra-regional and primarily between the US and large feeder hubs, such as Spain or Hong Kong. The second tier of trade tends to be intra-regional. For example, Spain serves as the EU's feeder hub, as it imports almonds from the US and then re-exports them to Europe. Hong Kong and Greece perform the same role for East Asia and the Balkan States.

Prospects for the almond industry are positive. The supply side will continue to grow but will taper off, while the demand side is entering a phase of rapid growth. Although trade is dominated by a few coun-



tries, feeder hubs allow smaller players to access markets. On average, countries' import prices for almonds tend to fluctuate within a small band, and have remained relatively stable from 2000 to 2004. Margins, indicated by the difference between producer and import prices, are favourable. Also, bitter almonds are not subject to tariff quotas and tariff rates tend to be low compared to other agricultural products. Based on these considerations, the almond industry provides export opportunities for SADC farmers.

SADC producers can learn from Chile and Australia's emergence as significant global exporters of almonds. They exploit supply-side economies of scale by tapping into regional demand. Their average export price is above South Africa's but these countries face similar logistical issues, as they are situated far away from large feeder hubs. This indicates that South Africa and SADC could be more competitive in international markets.



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