



Australia Indonesia Partnership
Kemitraan Australia Indonesia



CURRENT TRENDS IN THE CASHEW KERNEL MARKET

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IFC's participation in the Australia–Indonesian Partnership

The Australia–Indonesia Partnership (AIP) supports Indonesia's reconstruction and development efforts, both in and beyond tsunami-affected areas. Assistance will involve long-term sustained cooperation focused on economic and social development.

As part of the AIP, the Smallholder Agribusiness Development Initiative (SADI) aims to improve incomes and productivity for farmers and agribusiness, in response to market opportunities, in four eastern provinces—East Nusa Tenggara, West Nusa Tenggara, South East Sulawesi and South Sulawesi.

IFC's commitment to SADI focuses on strengthening private sector agribusiness and SME development by improving access to markets, enhancing the business enabling environment, and supporting access to finance. This commitment will contribute to increased productivity and incomes through development of an improved and more efficient agribusiness environment.

Executive Summary

- The global market for cashew kernels is substantial and expanding. There are opportunities for new suppliers in different regional markets.
- While cashews tend to be consumed in the markets of the more developed economies, India remains the second largest consumer of cashew kernels. India imports in-shell cashew but not kernels: the processing industry is protected by an import duty.
- China is a substantial import market but is largely served by imports from Vietnam. A fraction of the cross border trade is recorded, and anecdotal reports claim a substantial clandestine movement of cashew.
- There is growth in demand in all the major markets. The global food market trends of health, convenience and indulgence apply in varying degrees to the cashew kernel market too. The growth is uneven: Indian and Chinese consumption appears to be growing fastest, while the US and Japanese markets are showing a low rate of growth.
- In the newer markets, such as Eastern Europe, there is a trend in kernel grades toward the superior types notably from the pieces to the wholes. The W320 remains the dominant grade in worldwide trade and is likely to maintain this position.
- Some markets, such as the US, are able to use a wider range of grades than others, such as the EU.
- Certification issues are becoming more important in some markets. The new processor should develop and operate the factory to food grade standards: certification to ISO or BRC standards may or may not be mandatory according to the market, but will be a useful indicator to a customer of the capabilities.
- There is a demand for organic cashew kernel, but it is a long way behind the demand in other food products. It is recommended that certification to organic standards is only sought if recommended by a customer.
- "Fair Trade" protocols have yet to be demanded for cashew kernels to any degree.
- There are no opportunities to add value for the major consuming markets at this time, and mostly distributors prefer to bulk and process product at the destination market.
- Innovative flavouring and processing in cashew kernels have been tried but with limited success. In Europe and the US the popularity of raw (unroasted) kernels is increasing. These require the highest standards of hygiene from the sheller and packer.

Abbreviations

AFI	Association of Food Industries
BRC	British Retail Consortium
CNSL	Cashew Nut Shell Liquid
EC	European Commission
EU	European Union
FSU	Former Soviet Union
HACCP	Hazard Analysis and Critical Control Points
ISO	International Standards Organisation
Kg	Kilogram
Lbs	Pound (0.454Kg)
RCN	Raw Cashew Nut (the in-shell cashew)

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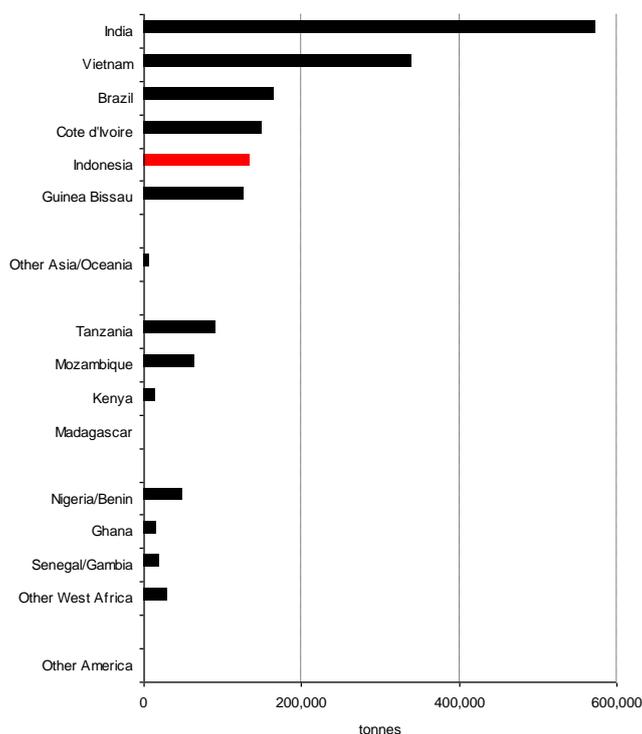
1. INTRODUCTION

- The IFC agri-business linkages project in Indonesia is developing an overall sub-program for cashew. In view of the time interval that lies between the initialisation and the completion of research and development programmes, especially those involving the development of plantings, it is important to have forecasts of demand. A good understanding of the directions in the cashew market is needed in order to facilitate planning of the upcoming programme.
- The present report combines an overview of the global trade in cashew with interviews with leading members of the cashew kernel trade in a number of markets to provide a picture of the current developments.

2. OVERVIEW OF THE GLOBAL CASHEW TRADE

Cashew Nut Production

Figure 1 Estimated Commercialized Production of In-shell Cashews in 2006.



Source: Compiled from National Statistics, trade comment and authors' estimates

- Figure 1 shows the relative importance of the major producers.

- Cashews grow widely across the tropics in a range of settings from intensive plantations, through extensively planted small-holdings to semi-wild populations.
- Production estimates are necessarily vague as the output from small holdings and semi-wild populations is never recorded. However, the key statistic is the amount commercialized, and this has reached about 1.65mn tonnes per year.
- India is the largest producer, with Vietnam production somewhat behind but it is reported to be growing rapidly.

In-shell Cashew Trade

- At harvest, the edible part of the cashew nut, namely the kernel, is enclosed by a tough shell that is quite leathery and irregularly shaped. In this state the nut is referred to as "in-shell" or as "seed" or as raw cashew nut (RCN) and it is generally in-shell that the nuts are first commercialised.
- The removal of the kernel from the shell is a difficult, time-consuming and unpleasant process. The shell is not brittle enough to break easily and it contains a caustic phenolic compound (cashew nut shell liquid or CNSL) that damages skin.
- For maximum value the kernel must be extracted whole from the shell. Any breakages or split kernels receive a substantially lower price in the global market. While there have been various attempts at mechanising the shelling process, these have generally met with limited success as the yield of whole kernels is too low. Only the Brazilian industry operates large scale mechanised shelling; there is some mechanisation in the Vietnamese factories but mostly the World's output of cashew is shelled by hand.
- While most kernels are consumed in markets in developed economies, the extraction process is quite unsuited to the high labour costs found there. The nuts should therefore be shelled at origin where the technology or capability makes this possible.
- Some 90 years ago the Indian producers in Kerala State developed the process of shelling cashews and packaging the kernels in vacuum tins for export. That expertise continues today and over 50% of the World cashew output is still shelled in India.
- Currently, India, Brazil and Vietnam all have important shelling industries. There is processing activity in other producing countries but the quantities are relatively minor in the global picture.
- There are no reliable industry figures on processing activity. Table 1 overleaf shows an estimate of the current situation.
- India has a substantial demand for imports of in-shell cashew in order to keep its industries active throughout the year. Other origins, for example Africa, are dependent either on seasonal processing or on expensively financed stocks. This gives the Indian processor a competitive advantage despite the apparent cost of shipping.

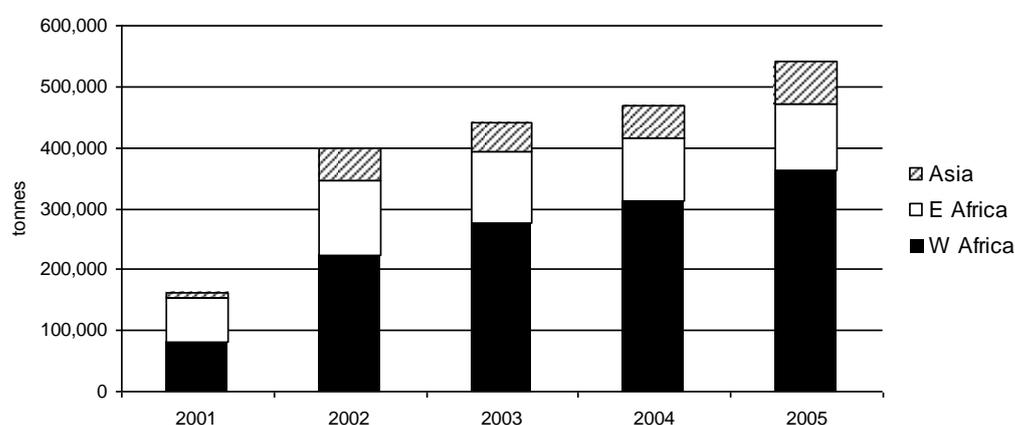
Table 1 Cashew Processing Capacity and Import Requirement 2006

<i>Country</i>	<i>Estimated Production Tonnes RCN/year</i>	<i>Estimated Processing Capacity (functional¹) Tonnes RCN /year</i>	<i>Import Requirement Tonnes/year</i>
India	550 000	1 000 000	540 000
Brazil	160 000	220 000 (180 000)	Occasional
Vietnam	340 000	400 000	50 000
Indonesia	135 000	20 000	None
Others	550 000	(40 000) ²	None
TOTAL	1 740 000	About 1 640 000	

Source: Trade sources and authors estimates

- India imports raw cashew nuts from about 25 countries. Fig 2 below shows the increasing requirement for imported in-shell cashew. This is despite the frequent claims and projections that India will become self-sufficient in cashew production. While plantings have increased in India, the demand for imported in-shell cashew indicates the very strong growth in consumption.

Figure 2 Indian Imports of In-shell Cashew



Source: Indian DGCI & S

- The procurement of in-shell cashew carries high risk for the buyer who must make a judgement on the likely kernel yield of a consignment. The estimate is made through a sampling protocol and cut test that provides an estimate of the yield of kernels per unit weight of in-shell as well as the likely size of the kernels.

¹ The processing capacity which is actually employed rather than the total processing capacity which includes units that are not currently operating (for example because of bankruptcy) .

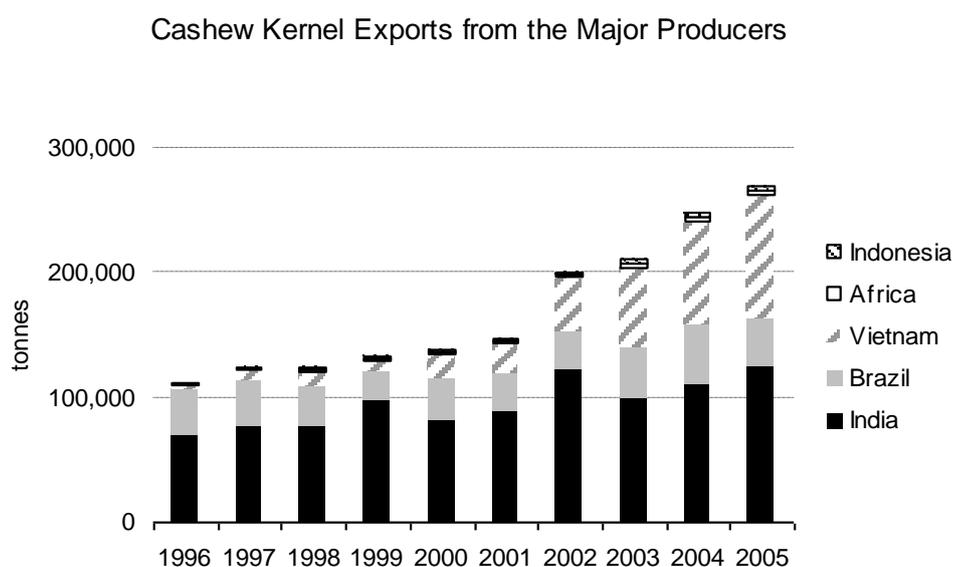
² Installed capacity is many times greater. Units can be re-activated or left idle. The figure is vague.

- In an odd mixture of imperial and metric units the intrinsic characteristics of a parcel of in-shell cashew are described in terms of pounds weight of kernels per 80kg bag of in-shell cashew. West African in-shell may be traded as 52/54 (being the expected 52 to 54 lbs of kernels/80kg bag). A higher yield achieves a higher price as the return to the processor is greater.
- The nut size is also important and is discussed in nut count per kg. Thus a 190-200 (nuts/kg) sample represents a bigger nut than a 220-230 sample.
- International buyers follow the seasonal harvest of cashew around Africa, purchasing in East Africa from the end of September through to West Africa from March into August. The nuts are shipped to South India and are used relatively quickly, having been bought to keep the factories operating outside of the Indian season.
- The international trade in in-shell cashew is handled by a number of different players. Until quite recently, Europeans trade houses were active in the market, but gradually Singaporean dealers superseded them. There has been further contraction in the number of players and increasingly the largest Indian processing groups have been obliged to manage procurement operations overseas.

Cashew Kernel Supply

- For in-shell cashews the average yield of kernels, depending on the quality, is of the order of 20 and 25%. The major value lies in the whole kernels and operations aim to achieve 80% wholes in the outturn of kernels.
- Cashew kernels are sold by grade with specifications developed by the Indian and Brazilian trades (See Annex II). The superior grades are the whole kernels and these are classified firstly by whether or not they have been scorched in the shelling process and secondly by size.
- The reference point grade for quoting kernel prices is the W320, which refers to a whole white kernel of a size to give about 320 nuts to the pound weight (0.454g). Broken kernels are also classified by colour and size and the output of a processing factory is therefore a spectrum of grades (33 are recognised in India) of differing value.
- Figure 3 below shows the strong growth in trade over the last ten years. The export situation in Vietnam is not quite clear, since their customs statistics are not up to date and do not appear to fully record trade with China. The data for the chart below are therefore estimated from other government sources.
- Total world exports of cashew kernels are estimated to be about 270,000 tonnes per year.

Figure 3 Cashew Kernel Exports



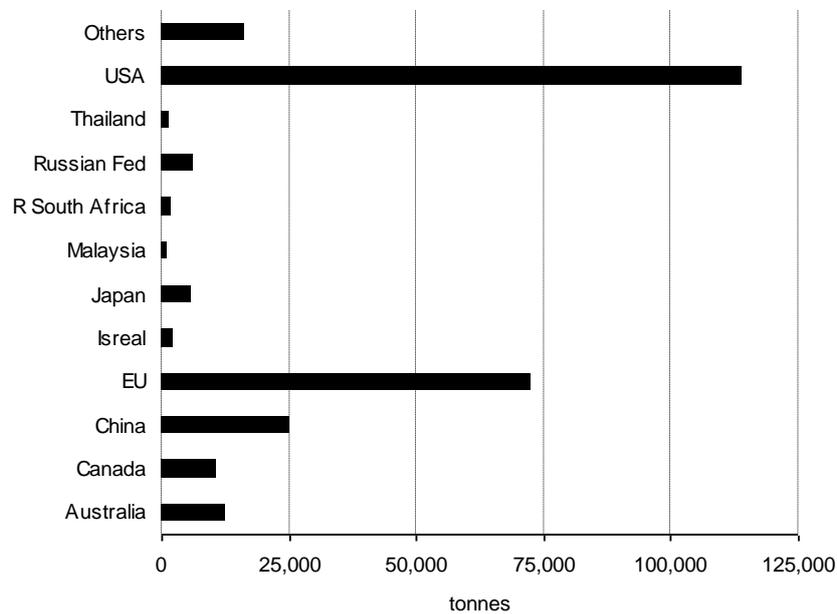
Source: Import Statistics, COMTRADE and National Exports Statistics.

- Cashew processing is increasing in India, Vietnam and Indonesia. There is an expanding demand for cashew in the growing economies of India and China and this is exerting a long-term pull on the processing capacity in Asia.
- The trend in Brazil is less clear, even though the current signs are quite positive. The industry is protected by a ban on the export of in-shell cashew.
- Processing in Africa has always been troublesome with the inefficiencies of parastatal management, excessive fixed capital investment, inappropriate technology, expensive power and civil conflict, to name only the most common causes of collapse.
- As noted above, Indian processors enjoy a major advantage in being supplied throughout the year with in-shell cashew, whereas a plant in West Africa must buy a year's supply of stock within the six week harvest period and so endure the consequent implications on financing.
- There are some processing factories operating across Africa, notably those of Olam, but the most positive signs are coming from Mozambique where small-scale, labour-based operations run on a nucleus system of delivery to larger finishing and packaging plants. The centralized finishing of the process allows bulking as well as high level control of hygiene, final grading and shipping. In this way the small-scale producer gains access to the international market.

Global Cashew Kernel Imports

- The principal importers of cashew kernel are shown in Figure 4. Data for China are estimated

Figure 4: Importers of Cashew Kernels



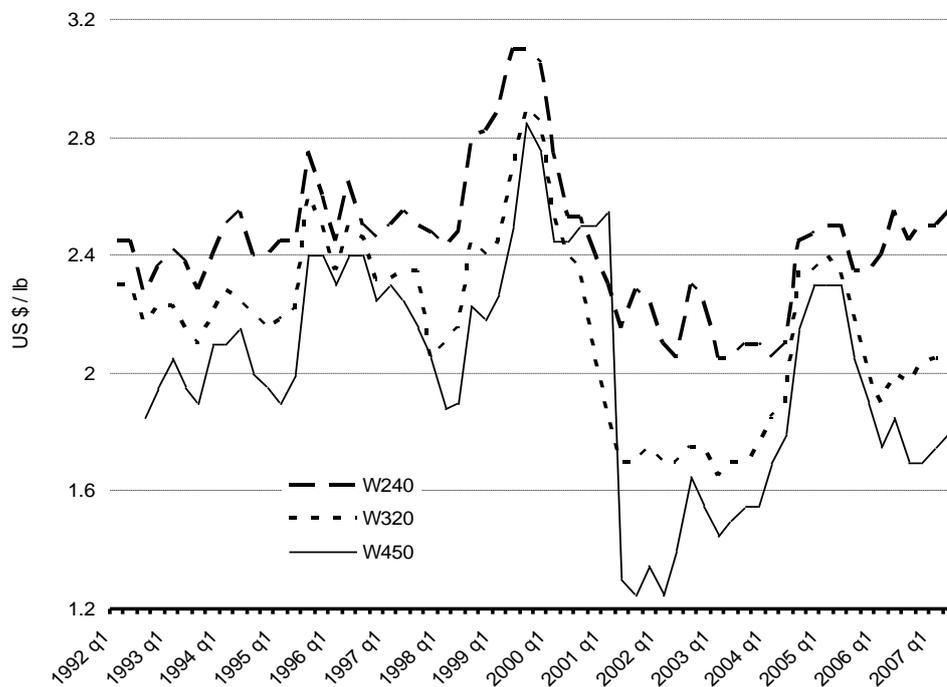
Source: COMTRADE

- The USA is by far the largest import market for cashews with a consumption level of over 750g per person per year. No other market approaches this level of consumption, which might be interpreted as an indication of the potential demand for cashews in other developed economies.
- India is the second largest consumer of cashew kernels in the World and demand is growing rapidly. Imports of kernels attract a duty of 32% and therefore there is no export opportunity to this market.

Kernel Prices

- Figure 5 below shows the history of kernel prices over the past 15 years, plotting the fob value of the W320 cashews against other grades of whole kernel.
- The chart shows prices climbing back up from the record lows of 2002. The very high prices of 1999 and 2000 had stimulated output, discouraged consumption and sent the market into surplus. The subsequent increase in consumption, particularly in North America, sent prices higher before falling back to current levels.

Figure 5 Price History of Indian Whole Cashew kernels 1992-2007 (US \$/lb fob India)



Source: Samsons Trading, Man Producten, Industry sources

- Figure 5 clearly shows that the larger nuts maintain their value as supply competition increases. Prices in US dollar terms are edging up in the last 12 months, and in part this is a response to the weakening of the US dollar. However, not all grades are moving up equally and some grades, notably the scorched wholes, have reduced the discount from the benchmark W320 as demand moves ahead.

3. CASHEW KERNEL MARKET DRIVERS & TRENDS

- There are a number of drivers and trends shaping the global food market that impact in some manner on the cashew trade. The review here will give an outline of the larger scale trends while the following chapter will give detail of developments in some of the individual major import markets.

Demographic & Economic Growth

- Cashews are a luxury non-essential food product and as such susceptible to changes in consumer wealth. Although there are indications that in some markets, such as Western Europe, population growth is slowing, the rising wealth

and the increasing number of younger people joining the working population should provide an increasing market for non-essential foods.

- Cashew consumption per head in Western Europe is less than one third the level in the USA. This suggests that there is a substantial opportunity for growth in consumption.
- While there are price based fluctuations in demand in the European and North American markets there is an underlying growth.
- In India, which as explained above is not a kernel importer and therefore not dealt with in detail in the present report, cashew consumption is growing rapidly. The Indian economy recorded 9.4% growth in 2006/07, and, according to some observers, the middle class in India is set to double in three years increase four-fold in a decade. On this trend, McKinsey predict that incomes will almost triple over the next 20 years, and the country will become the World's fifth largest consumer market by 2025. While the import restrictions on kernel may yet persist such growth will have inevitable effects on the global supply and demand balance.
- The picture of demand in China is less clear, but there is clearly an increasing requirement for cashews from Vietnam.
- In conclusion, the global cashew market is likely to experience continued growth in demand over the next 10 to 15 years at least. Any promotional efforts would add to this.

Prices & Substitution

- In relation to other nuts, cashews are now relatively low priced as shown in Table 2 overleaf. The ranking of nuts however alters from year to year as the prices move independently.
- The opportunities for substitution between nuts are quite limited. Cashews are included in trail mixes, for example, in the North American snack market and the relative proportion of nut types can be varied to some extent. However, the dominant use of cashews is as a snack or cocktail nut to be eaten out of hand and the flavour and physical characteristics of the cashew are not appropriate for the products that use other nuts such as hazelnuts in chocolate or breakfast cereals.

Table 2 Prices for Selected Nuts July 2007

Nut	Grade	Basis	\$ / tonne
<i>Pecans</i>	US Halves	Ex store UK	10 600
<i>Hazelnuts</i>	Turkish Levants Standard 1	ex store UK	8 000
<i>Walnuts</i>	India, light halves	ex store UK	8 150
<i>Pistachios</i>	Iran 20/22 raw in shell RPPC	fof Hamburg	6 500
<i>Almonds</i>	Californian Non Pareil SSR, 23/25	cif Europe	5 850
<i>Brazils</i>	Medium	ex store UK	5 070
<i>Cashews</i>	W320	spot UK	4 960
<i>Peanuts</i>	Argentina Runners2006/07 Crop	C&f Europe	1 150

- Historically, in-shell cashew and cashew kernels are priced in the international markets in US dollars. The present weakness of the dollar will not be felt by the European importers, for example, for whom prices remain relatively low.

National Regulatory Issues

- Food and import authorities in the major markets of Europe and North America are paying increasing attention to food safety and standards of hygiene.
- Tests for adulterants, contaminants such as pesticide residues and mycotoxins, are increasingly sophisticated and precise. Where this is disrupting the patterns of supply in some nuts³ and other food imports, cashews are generally free from complaint. Pesticide use is comparatively rare; aflatoxins are not a problem; the nut is shelled before export and the further roasting in the consuming markets deals with any microbial problems.
- Traceability has been introduced in the EU regulations⁴: the requirement for traceability of imported foods is limited to ensuring that businesses are at least able to identify the immediate supplier of the product in question and the immediate subsequent recipient, with the exemption of retailers to final consumers. This principle is referred to as one step back-one step forward. Thus the European roaster would only be required to identify the packer who had supplied a consignment of nuts not the producer or indeed even the sheller.
- In summary, developments in national regulations in the import markets are not currently influencing the cashew trade

Private Standards and Ethical Shopping

- Where national regulations provide the minimum standards for imported foods, food industries and retailers have increasingly stringent requirements. These not only concern standards of hygiene but also complex questions of social and environmental responsibility. European food businesses in general, and UK-based companies in particular, have developed ever more severe requirements for their suppliers. This is not the case in the North American markets.
- Cashew shelling, which for the most part demands repetitive manual labour with the added complication of caustic cashew nut shell liquid (CNSL), has had a poor reputation for hygiene and social responsibility. An increasing number of processors are gaining accreditation to standards such as HACCP and ISO and it is likely that these will become mandatory. Certainly, any new venture would need to be established with these standards in place in order to gain market acceptance.
- Product traceability is an important theme in the global food market. It is required by major retailers. There are however pragmatic concerns in cashew

³ Pistachios for example are prone to aflatoxin contamination

⁴ (EC/178/2002)

and it is simply not practicable to trace the individual product all the way from field to retail.

- The long term trend is in the direction of requiring certification to levels of performance and responsibility and in time these will be applied to cashew too.
- Among consumers there is increasing awareness of social and environmental issues too and the demand for foods certified to have been grown to “organic” standards has grown rapidly over the last 10 years. The growth has not been even across food products and while some such as baby foods have a substantial organic sub-sector, others show limited interest.
- It is important here to note that while consumer concerns may develop gradually, the large scale retailers use the ethical concerns of the consumers to differentiate themselves and achieve a premium margin, and the move to organic by a chain of stores can have a more immediate effect.
- Most cashew production is organic by default and merely requires certification to prove it. Thus any premiums that might be available tend to be short-lived and there is limited advantage in the niche.
- Finally, there is increasing consumer concern in Europe that producers should be adequately rewarded in the value chain. To this end, various movements under the “Fair Trade” umbrella have developed, whereby the consumer pays a premium over regular prices at the retail level and the premium is returned to ensure a minimum price to the producer as well as contribute to community projects such as schools and clinics.
- While the “Fair Trade” movement has made progress into the mainstream, and “Fair Trade” products can be found in the major European retailers, there is still confusion among consumers about the extent of the support provided. There is as yet only a relatively limited range of products available in this sector. The protocol for certification is considered strict and not easy to achieve in practice.

Healthy Eating

- The move towards a healthier lifestyle is one of the major forces shaping the food markets in developed economies. There is increasing consumer concern over for healthy eating and diets and weight loss programs are a multi-billion dollar industry.
- Nuts fit well into this lifestyle with their high protein content and a part of the major rise in US cashew consumption is ascribed by some commentators to the “Atkins Diet” that was fashionable at the time. This particular diet cut out carbohydrates and emphasize the intake of protein and fats which described nuts, particularly cashews, well.
- In addition, today’s affluent consumer is held to be “cash rich and time poor” and looks for convenience in eating. Nuts provide a handy snack that the consumer can also feel good about, in contrast, for example, to chocolate.

- Cashews kernels however are mostly eaten after roasting in oil and salting. Since oil and the salt are known contributors to human vascular problems there is an increasing demand for unroasted, 'raw' kernels⁵.

Innovation

- The food industries of the developed markets are highly competitive and continuous innovation and creation are key to maintaining the consumer's interest and a share of the market.
- Innovation in the nut market has been uneven with hazelnuts and their derivatives, for example, appearing as ingredients in a range of food products, while cashews have seen little advance. There have been attempts at different flavouring (chilli for example) and different roasting methods (honey) but these have limited appeal.
- One of the problems in using cashew kernels in other preparations is the mild flavour which is easily lost by the uptake of other flavours in the high oil content. As such the consumer is left with an unidentifiable crunchy ingredient with limited appeal.
- Innovation in cashews has been focussed on packaging, grades and sales promotion.

⁵ NB: it is important to avoid confusion of the raw cashew nut (RCN) referring to the in-shell nut, with the raw kernel that has not been roasted.

4. CASHEW IMPORT MARKET TRENDS

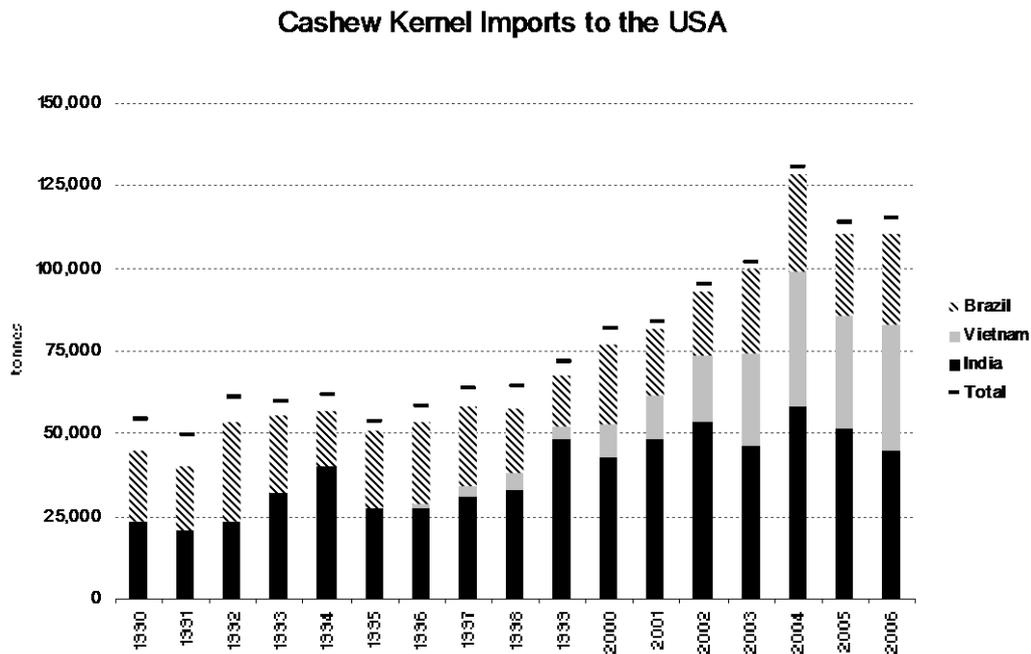
- The following notes summarise a number of interviews with key players in the major import markets for cashew kernels.

USA

BACKGROUND

- Figure 6 below shows the progress of imports into the USA since 1990. An upward trend began in the mid 1990s and annual imports are now more than double the level at the start of the move.
- The increasing import requirement has been met by the output from Vietnam and expansion in exports from India. Average imports from Brazil are only 10% higher than in the mid 1990s.

Figure 6



Source: US Bureau of Census

KERNEL GRADES

- The US import demand for cashew is quite different from other markets: not only is it by a long way the largest import market but it has the greatest demand for variety of grades. The US is said to buy cashew kernels on price, and, as the Brazilian industry developed with mechanized shelling, which gave a higher proportion of broken and scorched grades as well as the larger whole grades, so

the nut industry in the USA adapted to using the more plentiful material from Brazil at a lower price than the traditional Indian supplies.

- The single most popular grade remains the W320 but the proportion used in the USA is lower than elsewhere as there is a wider acceptance of the inferior grades. Industry commentators do not talk of trends towards particular grade, but more of adaptability towards the grades that represent the best value. The major use of cashews however is as roasted salted snacks eaten out of hand.
- Demand for the W240s continues in the warehouse price clubs.
- The consequence of the ability to use a range of pieces in, for example, breakfast bars or bakery products is a need for accurate grading, and it is this capability together with competitive pricing that has given the Vietnamese suppliers the opportunity to penetrate the US market.

CERTIFICATION

- Overall, certification and rigid compliance to specifications are not as important in the USA as they are in the EU. Provided that the price is acceptable and that the product matches expectations there is significantly less emphasis on standards in this market.
- That said, the issues of food safety and security are becoming more important. Imported items are perceived as a risk by the authorities and imports are more regulated than they were 10 years ago.
- Labelling of consumer packs can be a barrier to market penetration for new suppliers since the country of origin must be specified. Unless the processor/packer is prepared to change labels there is reluctance to dealing with smaller origins.
- Foods from certified organic sources are gaining in popularity but the rapid growth from a low starting point has not yet amounted to substantial volumes. Within cashews, brokers report difficulty in matching supply and demand since any new demand can easily provoke oversupply and premia are not predictable.
- Organic food has a passionate and loyal following but has yet to cross-over into the mainstream. The major retailer Wal-Mart indicated an intention to develop organic food lines but has since modified its views most likely because of the difficulty of finding sufficient supplies. Meanwhile the appearance in the USA of the UK retailer Tesco, which has a significant organic offering in Europe, may signal an opportunity for organic food to become more mainstream.
- The healthy lifestyle is an important trend in the US food market for certain consumer sectors, and it seems likely that this "more mindful eating" will result in a greater demand for organic products.
- The "Fair Trade" concept has not yet had a significant impact in US retailing.

VALUE ADDED AND INNOVATION

- Trade sources reported no interest in the import of retail packs of cashews. There is probably a limited amount but almost all the value addition takes place within the USA.

- The innovative uses of cashews tend to use the cashews as ingredients in bakery products, cakes, cookies, cereal bars and the like. Covering with chocolate and roasting with honey have been tried with only limited success.

CONCLUSION

- Penetration of the US market will require competitive pricing and excellent grading. Acceptance by the market will have the advantage that a range of grades can be taken.
- There is still a huge potential for cashew consumption in the USA but this will require promotion. There is reluctance from the US industry to promote cashews too vigorously in case demand outstrips supply. There is a very high awareness of cashews among consumers and the nut is well liked. Promotion may have a disproportionate effect on uptake and it is perhaps unsurprising that the industry is unwilling to do the job for the producers.
- While the current market is not overly particular in requiring certified standards of performance or in carrying out audits, it would be prudent to be prepared for a change here. An unexpected food scare could alter the demands of the industry quite rapidly: if, for example, an outbreak of food poisoning were traced to raw cashew kernels, the consumption of cashews in all forms would most likely suffer.

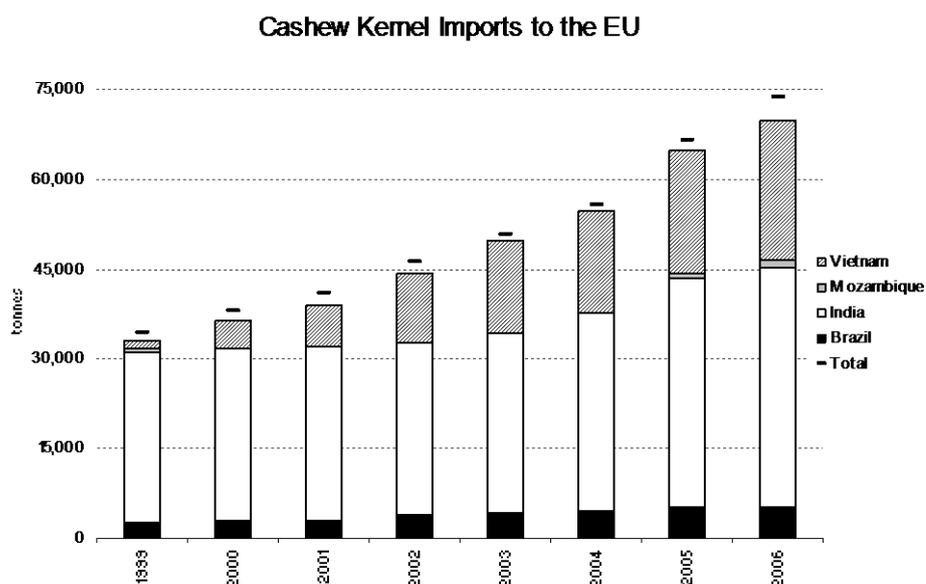
Europe

BACKGROUND

- Cashew kernel imports have risen strongly over the past seven years. Figure 7 below shows the annual increase exceeding 10%. The dominance of India as a supplier is clear with Vietnam growing rapidly. The Brazilian cashew is not popular, in part because of flavour⁶.
- While we talk of a single market in terms of the free flow of goods around the EU member states, the patterns of food consumption vary markedly from country to country. Thus the EU regional increase is not reflected equally in all the member states and the comments that follow are not necessarily relevant throughout.

⁶ The Brazilian kernel is considered to be sour, while the Indian is held to be sweet and the Vietnamese dry. The differences are believed to result from the leakage of tannins from the testa into the kernel and reflect the different treatments in the shelling process: Brazilian in-shell nuts, for example, are soaked in water to protect the kernel when the nut is held in the hot oil bath before shelling, whereas Indian nuts are heated in hot air while descending through a rotating inclined drum. Lengthy storage of damp in-shell nuts has the same effect.

Figure 7



Source: EUROSTAT

KERNEL GRADES

- W320s dominate the demand for cashews in Europe. Some estimates put the market share as high as 80%. There are some reports of an increasing demand for W240s but the price differential may be discouraging the switch.
- There is some requirement for the superior broken kernels and some evidence of a declining demand here. The European market has never had a substantial use for the inferior grades.

CERTIFICATION

- Certification is increasing in importance in the UK. HACCP, BRC and ISO are all useful and may be demanded. Any factory hoping to sell to the UK will need to have certification of standards in order to gain and maintain a position in the market.
- In continental Europe certification is not as important but the requirement is growing in some areas. Some of the larger buyers will at the least carry out their own audit of a factory.
- Traceability is an issue, but from a regulatory angle the law only requires the import to be able to specify the immediate supplier. While food manufacturers and retailers would like to see greater traceability in nuts, it is also understood that under the present supply conditions the Indian factories will not be able to provide details of their supplies.
- The traceability issue is unlikely to disappear though cashews have a very low level of customer complaint. A serious scare, however, possibly in the raw nuts, may provoke retailers into demanding significantly improved traceability, and any

factory capable of identifying origin details for each consignment will be at an advantage.

- Environmental issues have gained importance as a trend in European food consumption, notably in the northern markets of Scandinavia, Germany, Holland and the UK. There is increased consumer awareness of a range of environmental issues from carbon footprints (now appearing on some food labelling) to organic farming.
- Organic demand is not yet significant in cashews. While most of the world's production of cashew is organic by default as the smallholders are unable to afford chemical inputs, little has been certified as such. Brazilian producers have made more progress here than most, but the Brazilian cashew kernel is not popular in Europe.
- The demand for organic cashews is growing: one importer reports 100% annual growth but this is from a very small base. There will be opportunities in this niche from time to time, in selected markets, but the premium is readily vulnerable to new supply.
- Fair trade, in terms of fully certified product, is discussed but trade sources report little action in this area. There is acknowledgement that conditions in shelling factories, particularly in India, have been far from ideal but that there has been progress in better pay and establishing minimum age standards.
- Fully certified Fair Trade is not available, partly because of the difficulties of certifying the product back to the farmer. While the market is supplied by Indian factories buying from a number of different producing countries, this cannot be achieved, but where processing takes place at origin it might be offered, and one importer believed there to be good opportunity for product with a combined organic and Fair Trade certificate.

VALUE ADDED AND INNOVATION

- The concept of adding value to the kernels prior to import has little interest in the near term. The distributors and retailers appreciate the quality control that is provided by the roasters in Europe, and the roasting in hot oil adds a measure of security against microbiological issues.
- There is continual innovation in the highly competitive food markets of Europe. In cashews a number of innovative flavours have been tried with varying degrees of success. Coating in chocolate or use in breakfast cereals does not work.
- In Germany and the UK the main development in cashew retailing has been the sale of raw, un-roasted, kernels and these are now sold with other raw nuts alongside fresh produce as a healthy snacking alternative. This development fits well with the increasing emphasis on healthy eating, but demands the highest level of hygiene from the sheller onwards.

CONCLUSION

- The European market offers an expanding demand for cashew kernels. New suppliers should focus on the major grades and be capable of achieving certification in production standards. Although it is only the UK where this has

become mandatory, the ability to achieve these levels will command a preference among the wider European trade.

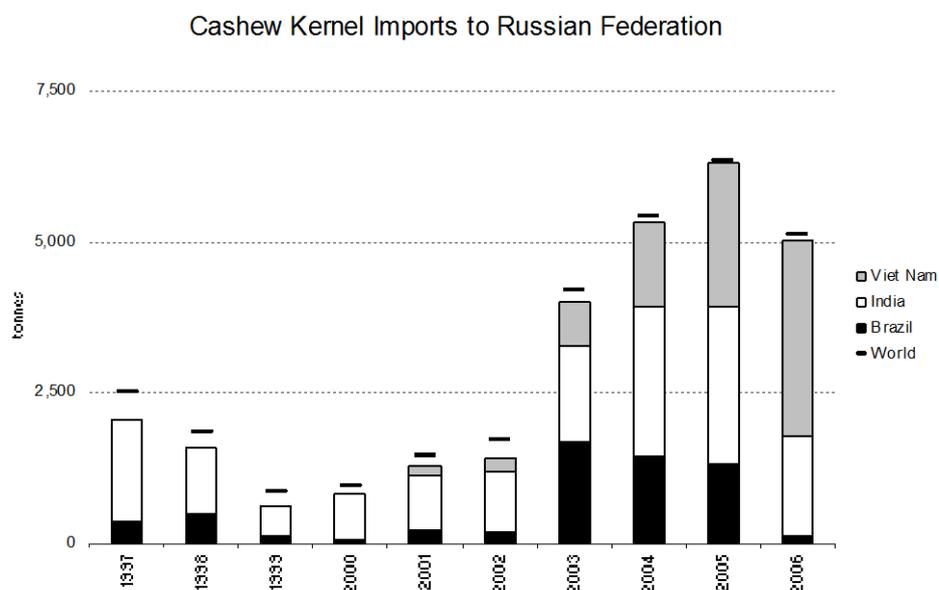
- Organic and Fair Trade may be useful as a marketing tool but are unlikely to provide a substantial demand in the near term.
- If prices and standards can be matched the European market provides an opportunity for the standard grades of cashew. The processors difficulty will lie in selling the inferior grades to ensure profitability.

Eastern Europe

BACKGROUND:

- The recent rise in imports of cashew nuts to the Russian Federation is shown in Figure 8 overleaf. According to trade sources this is a significant underestimate and more accurate figure is around 15,000 tonnes. Other Former Soviet Union or Eastern bloc countries are showing rapid increase in imports too, though from a small base and total imports to Eastern Europe add a further 3,000 tonnes.
- The branded imports from Western Europe (notably Felix from The Nut Company) tend to dominate in markets such as Poland, whereas the Ukraine appears to deal more with origin.
- Traditionally these are almond and hazelnut markets, but the high prices in recent years have opened an opportunity for cashew kernels.

Figure 8



Source: UN COMTRADE

KERNEL GRADES:

- Eastern Europe has shown a preference for the smaller whole grades, but with increasing affluence there appears to be a gradual move to W320s. In Poland, the SW450 is in demand from the bakery sector.
- The flavour of the Indian nuts was preferred, but Vietnam is increasingly important as a supplier. The quality and reliability of the supply from Vietnam supports this change.

CERTIFICATION:

- At present, no certification is required by these markets and price and trust are the key determinants in trade.
- Moves towards certification can be foreseen, in particular as retailing becomes westernized, but this may take time.
- The organic sector is not yet significant in cashew kernels, but small specialist shops are appearing in the more developed markets of Poland and Hungary. This may signify a future requirement for organic nuts.

VALUE ADDED AND INNOVATION

- No opportunities for value added cashews have been identified.
- The range of innovation in cashews is very limited. There is a developing trend for healthy products in the more developed Eastern European markets (possibly linking in with the appearance of organic specialists noted above) and this is seen in an increasing demand for dried fruits for example. Raw cashew kernels may fit into this trend.

CONCLUSION

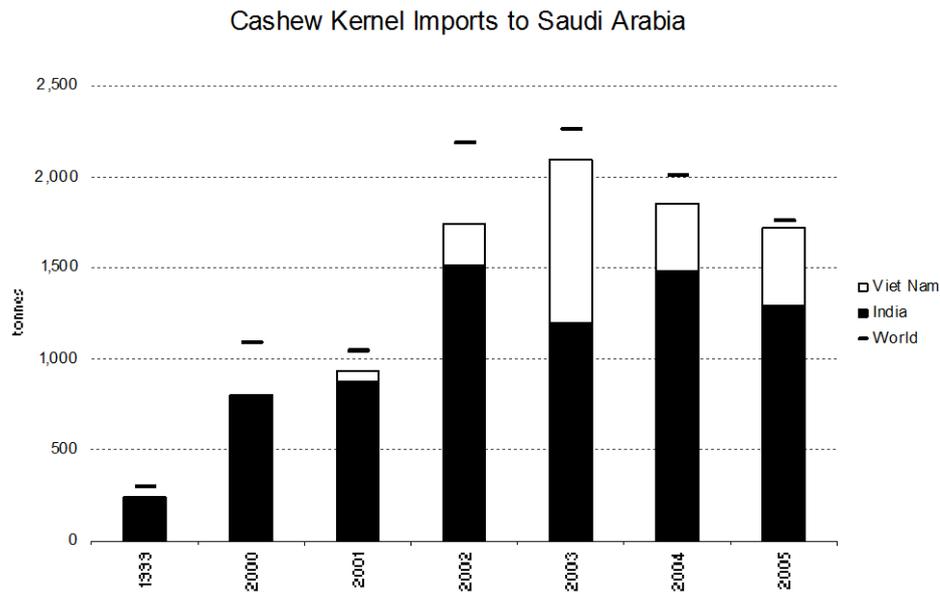
- There are some fast growing markets for cashew in this region, but there is strong competition either from branded products from Western Europe or from established suppliers in Vietnam. The opportunities for differentiating suppliers are limited, but price and reliability will be key issues in selling cashews here.

Middle East

BACKGROUND:

- The Middle East market for cashew kernels has grown rapidly in recent years. Trade sources estimate an annual requirement of at least 16,000 tonnes per year. Dubai, however, operates also as an entrepôt for food products, with a role as distributor across the region, and actual consumption in the Middle East maybe somewhat lower.
- Cashew kernel import statistics for Saudi Arabia are shown in Figure 9.

Figure 9



Source: UN COMTRADE

KERNEL GRADES:

- Cashew consumption seems to carry more prestige in the Middle East than in other markets and large whole nuts are required. The bulk of the demand is therefore in the 240 and 320 grades of both white and scorched types.

CERTIFICATION:

- In common with the Eastern European markets, there has been little demand for certification of cashew kernels in the Middle East and buying tends to be based on price and trust.
- The increasing role of supermarkets in food retailing may have some impact but this is not such an important channel for cashew marketing.
- Organic and Fair Trade issues are not important in this market.

VALUE ADDED AND INNOVATION

- There is little opportunity for adding value in this market or indeed for innovation. There is some use of confectionery use of cashews in the region, analogous to the preparation of sweetmeats in India.

CONCLUSION

- The Middle East is an interesting market as it is a reasonable size and sales to Dubai give access to a number of smaller markets through its excellent transport and trading links.

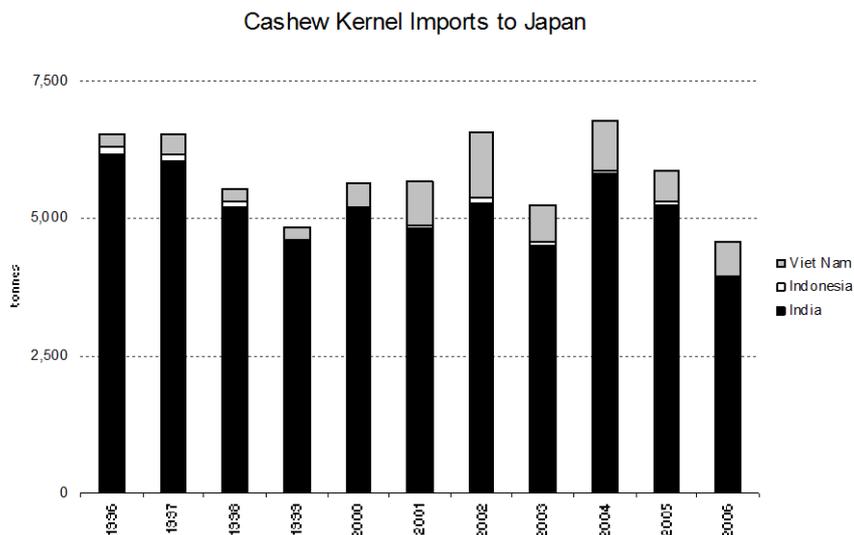
- With no special requirements for traceability or certification, the Middle East is a more straightforward market for the new entrant than, for example, the European market.

Japan

BACKGROUND:

- Japanese imports of cashew kernels hover around the 5,000 to 6,000 tonne range as shown in Figure 10. Cashew kernels are one of the most important of the luxury tree nuts in the Japanese market.

Figure 10



Source: UN COMTRADE

- India supplies the greatest part of the imports.

KERNEL GRADES:

- The W320 grade occupies some 70% of the cashew kernel market with the balance made up of W450 and Large White Pieces. There is little demand for scorched grades or inferior pieces.
- Brokers report some increase in demand for the larger 240 grade but this has stalled while the premium remains at \$0.50 /lb or higher.
- The consumer demand for cashew is sensitive to price and the multiple retailers and chain stores tend to hold the prices steady.

CERTIFICATION:

- There is extensive testing by government officers of imported plant material including nuts.
- Supermarkets insist on standards and certification in fruit and vegetables and will give preference to cashew from factories with some independent certification. There are no private standards in this area.
- Traceability is not an issue as most material is resorted and repacked after arrival.
- Organic certification is not important in cashews. It has been tried but interest is limited.
- Fair Trade certification is not an important issue in Japan.

VALUE ADDED AND INNOVATION

- The cashew market is held to be quite conservative and attempts at innovative flavours and presentation have not met with success. Costco however import honey roasted cashews from the USA

CONCLUSION

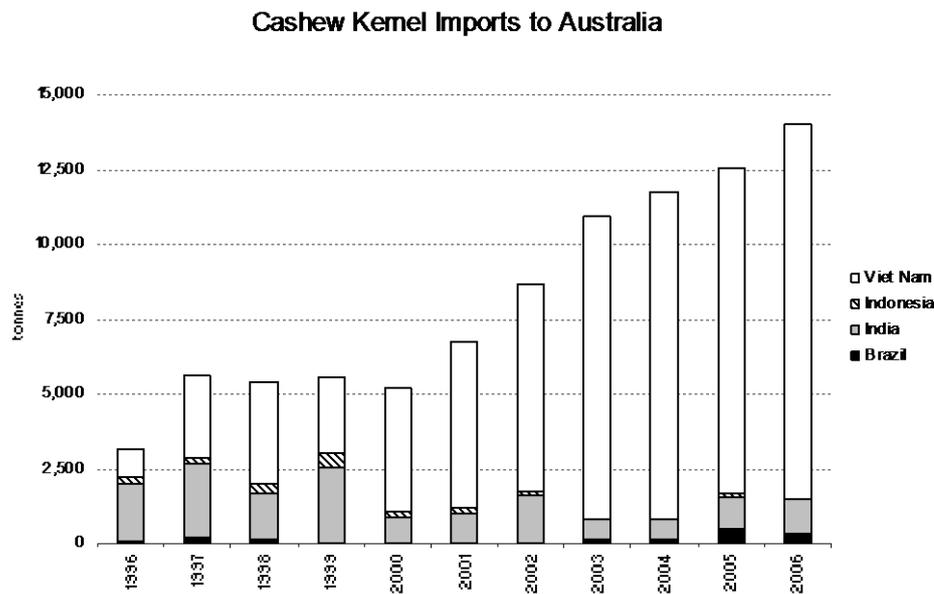
- A straight forward market but showing almost no growth. Japanese trading tends to be conservative with a strong preference for long term relationships. Penetration of this market might therefore require more investment in developing relationships than other more price sensitive markets.
- However, the Japanese involvement in other areas of agri-business and forestry in Indonesia may provide ready made channels to Japan.

Australia

BACKGROUND:

- The Australian market for cashew kernels has changed radically over the past six years. Until the late 1990s the import demand was relatively low at about 3,000 tonnes per year. Figure 11 shows that imports have grown almost threefold over the past 10 years with a dominance of Vietnamese supply.

Figure 11



Source: UN COMTRADE

KERNEL GRADES:

- The W320 is the most popular grade with an estimated 60% of the market. W450s are estimated to add another 15% while W240s currently contribute only 5% of the demand. The balance of 20% is made up of scorched wholes of 320 and 240 grades.
- Overall these are the typical grades in the market: there is some switching of grades as price differentials rise and fall but the basic requirement remains the same.

CERTIFICATION:

- Certification has become very important in Australia. The ability of the Vietnamese factories to achieve standards of HACCP and BRC and to provide elements of traceability has given them a competitive advantage over the Indian suppliers.
- The absence of standards among the Indonesian suppliers leads to a substantial discount against the majority of imports.
- Organic certification is not possible while Australian import laws require fumigation.
- There is a high awareness of ethical issues in trade among the Australian consumers and Fair Trade certification in some form is likely to be of interest in cashew kernels.

- Value Added and Innovation
- Food manufacturers are looking for innovation in cashew kernels to offer to consumers.
- There has been some work on the development of butters and pastes, and there are chocolate bars incorporating small cashew pieces. Dry roasted nuts have also been introduced.
- As yet, opportunities for adding value at origin have not been demonstrated, and manufacturers continue to import the raw kernel for the typical roasting and salting. That said, there is more interest here in innovation than is found in other developed markets.

CONCLUSION

- The Australian market for cashew kernels is significant and still growing, and in view of the geographical proximity this should be an interesting target market for Indonesian suppliers.
- There is a strong move from the Australian manufacturers and retailers towards food grade standards in their nut supplies. In order to penetrate this market, factories must invest in the highest standards of production. They should be prepared to conform to individual supermarket requirements and to develop standards similar to the AFI⁷. Competition with Vietnam for market share will not be possible without a high standard of performance.
- There is interest in the market for an alternative source of cashew kernels.

⁷ The Association of Food Industries, Inc. (AFI) is a US based trade association serving the food import trade. As part of its remit the AFI administers standards for a number of imported tree nuts.

5. BY-PRODUCTS

- There are several alternative uses for the cashew tree, some of which have important commercial applications.

Fruits and Fruit Products

- The cashew apple is used in many producing regions. In a recent survey of Guinea Bissau we found that the farmer often realised a greater income from fruit sales than from the in-shell cashew nut. The fruit is a false fruit formed by the swollen fruit stalk. The pulp is juicy but usually rather tannic and can be eaten raw, pressed for juice or cooked to jams and chutney.
- The juice is an important industry in Brazil. The juice does not store well and there is no international trade in the juice.
- In West Africa the juice is collected and either consumed almost immediately or allowed to ferment to an alcoholic fruit drink. This is sometimes distilled and the practice is also common in parts of India, notably Goa, to give the spirit feni.
- Some exports to Europe and North America of the cashew fruit spirit are made from India and West Africa, but the market for this is very small and competition from the more usual spirits is intense.

Cashew shell

- The cashew shell may be used locally as a fuel for power plants based on biomass. Cashew shelling plants generate high volumes of shell, and this residue can be put to use in generating power for the plant or as fuel for the steam boiler or roasters.

Cashew Nut Shell Liquid

- The shell of the cashew nut is 3-4mm thick with a tough outer and inner surface that sandwiches a honeycomb lattice. Within the lattice is a phenolic resin, the cashew nut shell liquid (CNSL), that comprises about 30-35% of the weight the shell.
- The resin is quite caustic, irritating to the skin and toxic. It must not contaminate the kernel. The CNSL can be extracted from the shell by heating and the primary step in processing cashews is a roasting or steam bath that extracts the CNSL and alters its chemical composition⁸.
- The CNSL can be fractionated and treated and to give a resin that is useful in the manufacture of friction resistant components, such as clutch and brake linings for the automotive industry, or in the production of surface coatings, varnishes, adhesives and paints.

⁸ Natural CNSL (cold, solvent extracted) is 70% anacardic acid, 18% cardol, 5% cardanol with other phenols and compounds forming the remainder. In technical (heat extracted) CNSL, the anacardic acid is converted to cardanol. Typical composition of heat extracted CNSL is 52% cardanol, 10% cardol and the rest polymeric substances and other minor ingredients.

- There is a significant market for technical CNSL. The demand is largely focussed on the US company, Cardolite and one or two Japanese enterprises such as Sumitomo.
- Supply of CNSL is dominated by India and Brazil. Here the hot oil bath method of roasting the nuts before shelling is used and this allows the collection of the CNSL. By contract, in West Africa a steam bath is used, and the CNSL is not collected.
- India and Brazil do not collect all the CNSL that they produce in shelling and some that is collected is used as fuel in power production. There is in effect surplus capacity for production. The CNSL is therefore not a high priced product: firstly it is a by-product and secondly more can be produced as needed.
- The characteristics of the Brazilian and Indian product are quite different and suited to different uses. For the less demanding uses, a guide price in the range of \$150- \$300 / tonne should be considered.

6. CONCLUSIONS

- The global market for cashew kernels is substantial and expanding. There are opportunities for new suppliers in different regional markets.
- The major producers of cashew kernels are India, Vietnam and Brazil. There are a number of other processors shelling cashew nuts but they are of a dramatically different scale.
- While cashews tend to be consumed in the markets of the more developed economies, India remains the second largest consumer of cashew kernels. India imports in-shell cashew but not kernels: the processing industry is protected by an import duty.
- Continued growth is expected in the EU and North American markets at least in line with demographic and economic expansion. It is important to note that growth in consumption of 3% will require an extra 6,000 tonnes per year of kernels from 30,000-35,000 tonnes of in-shell cashews.
- Consumption in India and China is growing rapidly and this will have an impact on global trade even though India does not import kernels. It is estimated that India consumes around 75,000 tonnes of kernels per year and growth rates of at least 6% in this market are predicated.
- There are a number of trends in the global food trade which can be recognised to a greater or lesser extent among the cashew import markets. The increasing importance that consumers give to convenience, health and indulgence act positively on a luxury snack nut such as the cashew. On top of these consumer trends are institutional issues of food safety and certification.
- The strength of all these trends and their impact varies from market to market. Growth in consumption is not even and the requirements for market penetration vary considerably between regions. The requirement for the cashew itself also varies across regions and there is no clear global trend in kernel quality: the W320 remains the dominant grade but different markets have different demands for grades.

- There is a premium for the larger kernels and usually that price differential widens as the prices move down. This pattern is likely to persist. In this respect, planting material that yields a large kernel is to be preferred but not at the expense of the overall outturn of whole kernels. The value of the in-shell cashew lies primarily in the expected yield of whole kernels, and the financial success of the processor can be determined in the proportion and value of the inferior grades:
- Attempts at innovative flavouring and preparation of the kernels has been tried a number of times without substantial success.
- Regulatory issues are becoming more important in the major import markets and any new processing plant should be established with these requirements considered in the planning and design. Some import markets are more demanding than others in this respect and the needs of the target market must be recognised.
- Any shelling-factory with plans for developing trade with the USA, Europe or Australia must now incorporate food grade standards into the design and the processes of the installation as well as the cashew industry standards such as the AFI. Generally, the end users, for example the roasters or other food manufacturers, will willingly discuss their requirements for certification, which may go beyond HACCP and ISO.
- All markets require excellence in grading standards.
- The opportunities for adding value to the kernels before export (for example roasting and salting) are quite limited as yet. The market may develop gradually in this direction but as yet the major markets prefer to roast and salt at the destination. Note that the customer support requirements are much higher for finished items, and market agencies or offices would be needed.
- Certification of product as Fair Trade or organic is unlikely to be worthwhile unless the customer specifically requires it. These issues have yet to make much progress in cashew kernels.

Annexes

Annex I Contacts

Market	Name	Company	Activity	Telephone	Email
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Annex II Indian/African/Brazilian Cashew Kernel Grade Equivalents

European importers usually require Indian standards of grading, while the US trade works on the basis of the AFI specifications.

Compiled by Amberwood Trading Ltd (www.amberwoodtrading.com) from AFI Specifications of October 1997.

India/Africa	Brazil	Common Trade Name	Count/sieve size
W180	SLW1	-	160/180
-	SLW2	-	160/180
-	LW1	-	180/210
-	LW2	-	180/210
W210	-	-	200/210
SW210	-	-	200/210
W240	W1 240	-	220/240
SW240	W2 240	-	220/240
W320	W1 320	-	300/320
SW320	W2 320	-	300/320
W450	W1450	-	400/450
SW450	W2 450	-	400/450
-	W1	-	mixed sizes (210/400)
SW	W2	Scorched wholes	mixed sixes (210/400)
SSW	W3	Second scorched wholes	-
DW	-	Dessert wholes	-
-	W4	Fourth quality wholes	-
FB	B1	Fancy butts	-
SB	B2	Scorched butts	-
-	B3	-	-
DB	-	Dessert butts	-
FS	S1	Fancy splits	-
SS	S2	Scorched splits	-
-	S3	-	-
DS	-	Dessert splits	-
LWP	P1	Large white pieces	US no 4/4.75mm (7/8ths)
SP	P2	Scorched pieces	US no 4/4.75mm (7/8ths)
SPS	P3	Special scorched pieces	US no 4/4.75mm (7/8ths)
DP	-	Dessert pieces	-
DSP	-	Small dessert pieces	-
SWP	SP1	Small white pieces	US no 7/2.80mm (5/8ths)
SSP	SP2	scorched small pieces	US no 7/2.80mm (5/8ths)
-	SP3	-	US no 7/2.80mm (5/8ths)
-	SSP1	Small Brazilian pieces	US no 8/2.36mm (5/8ths)
-	SSP2	Small Brazilian scorched pieces	US no 8/2.36mm (5/8ths)
-	SSP3	-	US no 8/2.36mm (5/8ths)

India/Africa	Brazil	Common Trade Name	Count/sieve size
BB	BB	Baby bits	plemules
-	G1	Brazilian granules	US no 12/1.70mm (fragments)
-	G2	Scorched Brazilian granules	US no 12/1.70mm (fragments)
-	G3	-	US no 12/1.70mm (fragments)
-	X1	-	US no 14/1.19mm (fragments)
-	X2	-	US no 14/1.19mm (fragments)
-	X3	-	US no 14/1.19mm (fragments)
-	F1	Meal/flour/farina	falls through US no 14/1.19mm
-	F2	-	falls through US no 14/1.19mm

Note, among the many definitions the following terms are widely used:

- Whole ("W") A cashew kernel is classified as whole if it has the characteristic shape of a cashew kernel and not more than 1/8th of the kernel has been broken off.
- Butts ("B") Kernels which have been broken crosswise, are less than 7/8 but not less than 3/8 of a whole kernel, and the cotyledons are still naturally attached
- Splits ("S") One half of a cashew kernel that has been split lengthways, provided not more than 1/8th of this cotyledon has been broken off.