

IFC Advisory Services in East Asia and the Pacific

Prospects for Cambodia's Cashew Sub-sector

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IFC

**International
Finance Corporation**
World Bank Group

Prospects for Cambodia's Cashew Sub-sector

International Finance Corporation
European Union

Prospects for Cambodia's Cashew Sub-sector

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This report was commissioned by IFC and the European Union in Cambodia. In partnership with the European Union, other donors, and the Ministry of Industry, Mines and Energy, IFC is implementing a five-year, supply chain improvement project to help Cambodia's agri-sector expand, create jobs and contribute to reducing high levels of rural poverty. This is part of a larger program that also supports the development of agro-industry small and medium enterprises through business environment reform and improving access to finance. The Cambodia Agribusiness Series of publications shares project-generated knowledge and experiences with a larger audience.

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Cashew conversions

Outturn kernels from in-shell	Usually described as weight of kernels in pounds per 80kg bag of in-shell nuts.	To convert outturn to yield, divide lbs figure by 0.176 51lbs/0.176=290grms 29%
Yield	1. Mass of kernels in grams per kilo of in-shell nuts 2. Kernels shelled by grade	1. typically 285 g 2. %
RCN/Container	212 bags @ 80kg	17mt gross /20ft container
Cartons	Kernel packing unit	50lb = 22.68kg
Cartons/20ft container	700 cartons = 35,000lb/2,204	15.88t
Tonnes in-shell to cartons kernels	India: multiply tonnes by 10	Brazil: multiply tonnes by 9
W240, W320, W450 etc. FS, FB, LWP	Cashew kernel grades	

Metric conversions

1 acre = 0.4047 hectares
 1pound = .04563kg
 1kilogram = 2.2046lb
 1 hectare = 2.471 acres

Abbreviations

AFI	Association of Food Industries, US
APC	American Peanut Council
BRC	British Retail Consortium. A food quality standard
CENTA	Combined Edible Nut Trade Association (UK)
CEPCI	Cashew Export Promotion Council of India
Cfr	Cost & freight
CIF	Cost, insurance & freight
CNSL	Cashew nut shell liquid – a cashew by-product
Conventional	Food produced without organic or fair-trade certification
CY	Container yard
Dollar \$	United States dollar
EFTA	European Fairtrade Association
EU	European Union
EURO €	European currency
Fair-trade	The fair-trade system ensures trading as directly as possible with producer organizations and ensuring that all participants comply with fair-trade standards. These standards guarantee fair and sustainable terms of trade for producers in developing countries (Fairtrade Trade Foundation)
FAO	Food & Agriculture Organization (UN)
FCL	Full container load
FDA	Food & Drug Administration (US Government)
FiBL	Research Institute of Organic Agriculture
FLO	Fair-trade labeling organization
FOB	Free on Board
g	Grams
ha	Hectares
HACCP	Food safety system ‘Hazard Analysis and Critical Control Points’ which is based on analysis and prevention
IDR	Indonesian Rupiah
IFC	International Finance Corporation (World Bank)
IFOAM	International Federation of Organic Agriculture Movements

INC	International Nut Council (Trade association tree nuts)
INR	Indian Rupee
In-shell	Harvested nuts, prior to processing
ISO	International Standards Organization
ITC	International Trade Centre
Kernels	Edible cashew nut, produced by shelling
kg	Kilogram
lb	Pound (unit of mass)
LCL	Less than a container load
mt	Metric tonnes
NGO	Non-governmental organization
NVZ	Dutch dried fruit association
OECD	Organization for Economic Cooperation & Development
Organic	Production system which excludes the use of agro chemicals and pesticides
OTA	Organic Trade Association
Outturn	Weight of cashew kernels produced from a unit of in-shell nuts (grams per kg, lbs per 80kg bag)
RCN	Raw cashew nuts (unshelled cashew nuts)
Roaster	Processor and packer of cashew kernels for retail or wholesale trade
SADI	Smallholder Agriculture Development Initiative
Shelling/Processing	Removal of outer shell, peeling and grading of in-shell nuts
SINDICAJU	Brazilian cashew nut manufacturers' association
TBA	To be advised
UAE	United Arab Emirates
UK	United Kingdom of Great Britain & Northern Ireland
UNECE	United Nations Economic Commission for Europe
US	United States
USDA	United States Dept. of Agriculture
Vinacas	Vietnam cashew exporters' association
Waren Verein	Hamburg Waren Verein – German trade association for nuts and dried fruits
Yield	Used to describe the grades of kernels produced by shelling cashews

Preface

In partnership with the European Union, other donors, and the Ministry of Industry, Mines and Energy (MIME), IFC is implementing a 5-year supply chain improvement project to help Cambodia's agri-sector to expand, create jobs and contribute to reducing high levels of rural poverty. This is part of a larger program that also supports the development of agro-industry small and medium enterprises by improving the business environment and increasing access to finance.

This report on the prospects for Cambodia becoming a supplier and processor of cashews for the world market, and of organic cashews, in particular, is the first in the EU/IFC/MIME Cambodia Agribusiness Series. Through this and other publications in the series, we hope to share project-generated knowledge and experience on promising crops and innovations that could improve the sustainability and profitability of Cambodian agro-enterprises.

As this study illustrates, Cambodia has the potential to become a supplier of processed cashews in its own right, and not just a seller of unshelled nuts to Vietnam and India for processing. Cambodia grows enough cashews to establish its own successful processing industry, which could earn \$30-40 million more each year for the cashew industry. Since Cambodian cashews are largely grown without agro-chemicals, reliable testing and certification could establish Cambodia in the organic cashew market and help it earn substantially more income.

By demonstrating the potential as well as the barriers to establishing Cambodia as an exporter and processor of conventional, organic and fair-trade cashews, we hope to encourage the government, development partners and other agencies to join us in supporting the development of this high potential product.



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Bas Rozemuller, Project Manager for the EU/IFC Supply Chain Linkages Project in Cambodia supervised the project, and IFC Program Manager, Charles Schneider, and Julia Brickell, IFC's Resident Representative in Cambodia, provided valuable feedback and encouragement throughout the project.

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Overview: Cashew Industry Worldwide and Prospects for Cambodia's Cashews

Cambodia's cashew sub-sector has strong potential to grow, create jobs and improve incomes for tens of thousands of poorer, rural Cambodians. As data in this study show, cashew nut kernels earn high prices in markets around the world and consumption has been growing steadily in both long-standing and new markets, and is likely to continue. Even in the recession of 2008-09, consumers continued to buy cashews. Studies and experience also show that with modest technical support, cashew yields and earnings can be significantly improved and with modest financing, a local processing industry could be launched.

Scope and methodology for this study

Because previous studies have shown growth potential for Cambodia's cashew sub-sector, and poorer, rural people could benefit significantly, IFC and the EU commissioned this study to identify the best markets and, if possible, specific companies with an interest in purchasing Cambodian cashews. The study focused especially on the fair-trade and organic markets, as specific high-priced niche markets would differentiate Cambodian cashew kernels. This study also assessed the prospects for launching a processing industry in Cambodia and provides a strategy for how best to market Cambodia's cashews now, and in the longer term.

Data for this study were gathered over a period of eighteen months. It commenced in late 2008 just as the global financial crisis was turning into a recession in many cashew-buying countries and ended in 2010 as the world economy was starting to recover from the worst financial crisis since the Depression of the 1930s. Research concentrated on the largest and most promising markets for Cambodia's cashews – the United States and Europe – but data were also gathered for smaller high growth markets such as Eastern Europe, Russia, the Middle East, and China. In conducting this study, more than 80 industry stakeholders (traders, processors, fair-trade and organic importers, and wholesalers) in eight countries were interviewed by phone or e-mail, about trends in the cashew subsector and Cambodia's prospects for supplying cashews directly to the world market. In addition, a further 35 industry stakeholders provided inputs to this study through websites and technical and media reports.

It is important to note that the figures available through official bodies on cashew nut farming, and trade in both unshelled and shelled cashews are often incomplete or inaccurate. Production is difficult to estimate, particularly in countries where cashews are consumed locally, producers and merchants do not report on volume, or where cashews are smuggled to other countries for processing. As a result, there are sometimes differences between reports on cashews grown and those exported before shelling. In order to provide more accurate data on the cashew trade, this study utilized the 20-year database of the Irish consultancy company, Ingredient Sourcing Solutions. These data were cross-checked against trade reports and official sources, such as those of the United Nations Statistics Division, customs offices in different countries, the Cashew Promotion Council of India, the Food and Drug Organization of the United States, and EuroStat. In general, figures from importing countries have been used as they are known to be more accurate than export figures. Import figures were compared to production in the countries where cashews are grown (called ‘origins’ in the trade) and processed, in order to identify differences. These differences were then further compared with Ingredient Sourcing Solutions’ database which has data similar to those of the International Nut & Dried Fruit Council and other major trade players.

Summary of the content presented in this report

This study presents a comprehensive picture of cashew sub-sector trends around the world. Chapters 1 through 8 cover: 1) cashew growing and cashew products; 2) cashew processing, including mechanization of what has been an almost entirely manual industry; 3) cashew consumption in long-standing as well as new markets; 4) structure of the cashew trade and what buyers want; 5) the fair-trade market; 6) the organic market; 7) case studies on small-scale processing in several developing countries and implications for Cambodia; and 8) recommendations for marketing Cambodian cashews in the short and longer terms. Annexes provide information on: cashew price history from November 1996 to December 2009; the nutrient profile for cashew nuts; specifications for cashew grades; requirements for exporting cashews; a list of cashew grades; typical cashew kernel products and prices; processing and marketing cashew nut shell liquid; other possible cashew by-products; a calendar showing when cashews are grown, harvested and consumed in different countries around the world; a list of individuals and companies contacted for this study; and a list of literature reviewed for the study.

For readers who are not familiar with the cashew industry, what follows is an introduction which summarizes key trends presented in this report and a summary of Cambodia’s prospects as an exporter and processor of cashews to the world market instead of exporting cashews unshelled to Vietnam and India.

Cashew consumption and products

With a few exceptions, most cashews nuts are consumed by middle class people as roasted or deep fried kernels which have been salted, spiced or coated with something sweet. This is true for the more-valuable whole kernels as well as the less-valuable broken kernels. Cashew kernels are eaten on their own or in combination with other nuts and/or dried fruits as a party or ‘between-meal’ snack. Unlike other popular nuts – almonds, Amazonia, hazel, and pistachio nuts – cashews have been little used in confectionary or bakery products. In North America and Europe, where the largest percentage of the world’s cashews are consumed, cashews have only recently been added to ‘health’ bars, chocolate bars, and breakfast cereals.

Typical cashew kernel products: Whole Cashews, Roasted and Salted – Conventional, Organic, Fair-trade * Cashew Halves and Pieces Roasted and Salted * Cashew Wholes Raw * Cashew Pieces Raw * Honey Roasted Cashews * Mixed Nuts Roasted and Salted * Cashews and Raisins Raw * Chili Flavor Roasted Cashews * Pepper Flavor Roasted Cashews
New cashew products: Cashew Butter * Cashew and Cocoa Biscuits * Organic Cashew Brittle * Yoghurt-coated Cashews * Chocolate-coated Cashews.

Cashews in cooking, confectionary, and baking: India makes the widest use of cashews. In addition to consuming cashew kernels as party and ‘between meal’ snacks, Indians cook with cashews and use them in confectionary and bakery products.

Cashew apple: In addition to harvesting the kernels, some processors in Brazil crush the cashew apples to extract the highly nutritious juice, sometimes mixing it with better-flavored juices for local sale. According to this study, around the world only 6-10% of cashew apples are used commercially, and in most cashew-processing countries, vast quantities of cashew apple go entirely to waste or are used only as compost.

Cashew nut shell liquid (CNSL): Toxic cashew nut shell liquid is found in the hard, honey-comb shell that surrounds the cashew kernel. Workers shelling cashews try to avoid contact with CNSL because it can ruin the cashews and irritate workers’ skin. CNSL is extracted from cashew shells by cooking the broken shells at high temperature. Due to its high resistance to heat, CNSL is used in the manufacture of brake linings and epoxy coatings. It is also used in paints, varnishes and specialty inks.

Cashew shell cake: Crushed cashew shells are compacted to make fuel cake. This burns at very high temperatures and is used in the cashew industry as well as industries with high energy requirements such as tile and brick making.

Cashew testa: The discarded cashew testa (the seed coat which, like a peanut skin, tightly covers the cashew kernel and has to be removed in shelling) has commercial uses too. It is used in poultry and ruminant feed and also in tanning leather a reddish color.

Trends in cashew farming around the world

The cashew tree is native to Brazil but is now grown in a number of other tropical countries because the trees grow well in soil that is too poor for other crops, and in addition to producing a nutritious crop with little or no effort, cashew trees help to prevent soil erosion. Cashews are called the ‘poor farmers’ crop’ because they are largely grown by subsistence farmers who plant a few trees to earn cash for household necessities such as health care and fuel.

Cashews require three to four years to produce their first crop, reach full production at seven years, and should be replaced after 25 years. They are usually good candidates for organic certification because subsistence farmers cannot afford agro-chemical inputs such as fertilizer and pesticide. However, because most farmers let cashew trees grow with low inputs, pruning or other effort, cashew yields are low and so are farmers’ earnings. Cashew yields and their selling price can be improved significantly if farmers apply organic fertilizer, manage trees correctly (pruning and organic pest control), and improve harvest and post-harvest practices.

Cashews were first commercialized in India in the 1920s after processors figured out how to shell cashews without breaking too high a percentage or contaminating the kernels with leaks of toxic shell liquid. From the 1920s to the mid-1970s, cashew cultivation grew steadily in East Africa and India. Starting in 1975, wars and disease largely destroyed the cashew shelling industry in East Africa. Cashew farming continued to expand in India and Brazil, and starting in the 1990s, increased dramatically in Vietnam.

India grows more cashews than any single country (23% of world total in 2009). Vietnam (which includes cashews grown in Cambodia in its data) is a joint fourth, at 15%. After years of decline, cashew growing is expanding again in Africa with the encouragement of the Africa Cashew Initiative, a consortium of development agencies, including the Gates Foundation. In 2009, West Africa grew 37% of the world's cashews (up from 12% in 1996), East Africa grows 8% and Brazil 13%.

Cashew quality

The quality, and therefore the selling price, of an in-shell cashew is judged primarily by the shelling outturn (yield of kernels per kg of in-shell), by the size of the nut, and by evidence of insect or fungal damage. Outturn and size are a function of a wide range of factors, including the variety of cashew tree, growing conditions, husbandry, harvesting practices, post-harvest drying and storage, and shelling and peeling. In general, larger nuts are more valuable.

Grading of cashews is determined by international quality standards such as those of the Association of Food Industries (AFI) in the US, and the Cashew Export Promotion Council of India (CEPC). The benchmark grade of over 30 different grades is WW320 as it is the most suitable for snack foods. On the international market, prices are quoted in dollars per pound.

Trends in cashew processing

The cashew is sometimes called the 'Devil's nut' because it is challenging to remove the awkwardly-shaped kernels from their shells without damaging the kernels or shellers' hands with the corrosive cashew nut shell liquid. First, the hard shell around the cashew kernel has to be sliced through or cracked without breaking the kernel or contaminating it with the cashew nut shell liquid. Then the kernels must be heated to make the seed coat or testa, which clings tightly to the kernel, brittle, so that it is easy to remove. As final steps, factory workers grade the cashew kernels according to size and color and then pack them for shipment to exporters.

The profitability of cashew processing depends largely on the proportion of whole, unblemished kernels after shelling. For many years, mechanized or semi-mechanized shelling was a failure because it damaged up to 60% of the kernels, while hand shelling damaged only 15-20%. Because the highest prices are paid for whole, unblemished cashews, cashew shelling and grading have remained largely manual.

Cashew processing around the world varies from the small-scale, village based shelling of Indonesia to the large-scale, low investment manual shelling of India, to the sophisticated, mechanized, high capital investment plants of Brazil.

A unique aspect of cashew processing is the fact that almost 40% of the world's cashews are shipped to other countries (India and Vietnam) for shelling. Worldwide, this loss of value added totals about \$200 million. Exporting in-shell cashews for processing began in the 1970s and 1980s, when Africa's shelling industry collapsed. Initially African cashews were shelled in India, which is still the world's largest processor (58% of world processing), but in the 1990s, Vietnam also began to process cashews from Africa and other countries, including Cambodia. Today Vietnam is responsible for 24% of the world's processing. Shelling plants are now opening again in Africa, but over 90% of Africa's cashews continue to be shipped to India or Vietnam for shelling. Brazil's factories are not an option for shelling cashews from Africa and other countries because the Brazilian government limits factories from importing unshelled cashews.

Trends in mechanizing cashew processing

For years, efforts have been underway to develop cashew shelling machines which owners of small shelling factories can afford; however, until recently, lower-cost shelling machines were a failure because they damaged too many kernels. In the last few years, however, rising labor costs and labor shortages in rural India and Vietnam have spurred work on small-factory mechanization.

In 2009, Vietnamese manufacturers brought new processing equipment to the world market. This promises acceptable rates of kernel damage, and prices which owners of smaller factories can afford. The peeling machines are reputed to peel as many cashews per day as 30 workers. If these machines, which are now operating in about half of Vietnam's 225 shelling factories, prove to be as good as claimed, this study predicts they will gain customers in other countries, and within a few years, mechanization will be widespread in cashew-processing countries. Improvements in large-scale mechanization have also been taking place in Brazil. Closely guarded new technology is reputed to reduce damaged kernels to below 20%, which is as good as hand shelling.

Although equipment is available that will grade cashews according to color and size, these machines are high priced and operators must be highly skilled. Even in highly mechanized Brazilian factories, due to the high cost of grading machines, final grading by hand continues, and is expected to continue worldwide for years to come.

The leading markets for cashews

Over the last decade, cashew consumption has been growing worldwide at approximately 7% per year. Growth has been especially fast in the organic sector.

The US imports more cashews than any other country, and the market is dominated by large supermarket and department store chains which offer cashews at deep discounts that appeal to consumers. With regard to premium priced fair-trade and organic cashews, data in this study show that US consumers are more interested in organic than fair-trade produce. This study estimates that the US market for organic cashews is 2,000 mt per year, which gives organic cashews about 2% of the entire US cashew market. Other factors expected to stimulate even greater US demand for cashews of all types are the recent endorsement of various nuts by US health authorities, and the promotion of nuts in popular high-protein weight-loss diets.

Europe is the world's second largest importer of cashews, with Germany, the Netherlands, France and United Kingdom accounting for 75% of European consumption. Fair-trade produce has been more successful in Europe than in the US, with the UK leading, thanks to strong promotion by supermarket chains. However, as discussed above, due to the same price being paid for all grades of fair-trade cashews, regardless of quality, and limited and unreliable supplies of fair-trade cashews, some European retailers are reluctant to stock fair-trade cashews.

This study estimates total organic imports in Europe at 2,000-2,500 mt per year – which is about 3.25% of all cashews imported. Although, as in the US, prices for organic cashews sold in Europe are usually 20-25% above the price for conventional cashews, when prices for all cashews rise dramatically, the organic premium declines from 25% to 10-15%.

India is the world's leading consumer of cashews. In addition to consuming all the cashews grown in India, Indians also consume cashews that have been grown in other countries, but processed in India. As previously mentioned, uses for cashews are wider in India because in addition to eating flavored kernels, cashews are used in cooking, confectionary and bakery products. Cashew consumption has been growing rapidly in India and this trend is predicted to continue as greater economic development moves more Indians into the cashew-consuming middle class.

Smaller, but promising markets for cashews

Cashew consumption is predicted to grow in smaller markets which have traditionally had a taste for cashews, as well as in new markets. In both cases, greater consumption is expected due to expansion of the middle class who have enough money to buy party and between-meal snacks. Russia and countries in Eastern Europe have eaten cashews for decades thanks to Soviet-era ties with India, and in the Middle East cashews are also popular. China is a new, but very promising market, due to the sheer size of its expanding middle class population.

Organic cashews: Sales of organic food began in the 1960s when demand first emerged for agricultural products grown without agro chemicals. Promoters of organic products were concerned about the impact of agro-chemicals on the environment, as well as on human health. Organic produce moved into the mainstream in the 1990s and today trade is an estimated 3% of all worldwide food sales, and worth close to \$30 billion. Over the past decade, the land under organic production has risen from 5 to 31 million ha, in 120 countries.

In the US, almost 40% of organic sales are now through supermarket chains. Fresh fruits and vegetables are especially popular organic products, but organic dairy, meat and dried foods are also widely available. The main markets for organic foods are the US, Europe, and Japan, with demand driven by rising desire to eat healthy food and protect the environment.

While there are no definitive figures for organic cashew imports because customs' data do not distinguish organic from conventional food imports, trade estimates suggest that organic cashews are 3-3.5% of total organic imports. The wholesale price paid for organic cashews is 20-25% higher than the price for conventional cashews.

Fair-trade cashews: Fair-trade is the term applied to products which meet standards such as those of Fair-trade Labelling Organizations International, which guarantee sustainable, fair terms of trade for producers in developing countries. Fair-trading was pioneered by non-governmental organizations such as Oxfam, but in the last decade fair-trade products have been taken up by supermarket chains in the US, Europe, and especially in the United Kingdom. Fair-trade produce appeals to consumers with a social conscience and enough income to pay an extra 20-25%. Fair-trade produce has experienced dramatic growth in recent years, and today worldwide sales total \$2.28 billion. But geographic spread is limited, with 91% of sales in Western Europe and North America.

In the food sector, coffee, tea and bananas have been the fair-trade success stories, with cocoa, rice and vanilla following. Fair-trade coffee, for example, grew in market share from 0.2% of the US market in 2000, to 3.8% in 2007, with retail sales worth about \$837 million.

Unfortunately fair-trade standards currently limit the success of fair-trade cashews because they do not recognize the different grades which inevitably result from damage in the cashew nut shelling process. Thus, the price for whole, large kernels is the same as the price for small pieces.

The argument for setting one price is that it costs as much for farmers to produce a kilo of low grade cashews as it does for them to produce a kilo of the highest grade. However, this does not reward shellers who maximize the production of whole grades. Nor does it recognize any higher value for cashews that are easier to shell, or for better farm practices which avoid damage and thus result in better outturn of whole nuts. By not pricing fair-trade cashews according to grade, the current fair-trade system inhibits growth of the sector, which could be very successful.

Impact of recessions on cashew sales

In addition to having strong growth potential in long-standing and new markets around the world, cashews also appear to be relatively recession proof. As data gathered for this study between 2008 and 2009 show, cashew sales were not drastically affected by the global financial crisis of 2008 and 2009. Although data show that consumers spent substantially less on restaurant meals and entertainment, they did not drastically cut their spending on snacks. In fact, some people interviewed for this study suggest that snack sales continued to remain strong because consumers were spending more time at home and enjoying snacks as a substitute for the restaurant meals and outside entertainment they had given up.

Data also show that cashew nuts have fared well in past recessions. According to the OECD-FAO publication, *Agricultural Outlook 2008-2017*, “economies of demand indicate that consumers tend to care less about prices of goods that represent a small share of their budget,” and that products require a “higher price signal to disrupt demand.” Data also show that throughout recessions in the early 1990s, and in the early part of the current decade, demand had risen substantially, regardless of conditions in the general economy.

Trends in cashew prices

Cashew kernel prices are volatile. They can go through periods of little or no movement and then suddenly explode upwards or collapse downwards. Prices can be driven up by demand spurts and by crop failures in more than one country. This study predicts that over the next five years cashew demand will outstrip supply, based on current production worldwide, continuing growth in demand, and lack of new planting to replace aging cashew trees.

Cashew farming in Cambodia

Cambodia produces an estimated 60,000 mt of in-shell cashew nuts. This makes it the tenth largest producer in the world, with just over 2% of world production. It is difficult, however, to ascertain exact production in Cambodia, with estimates ranging from 30,000 mt, up to 100,000 mt. However, even if the crop is only 30,000 mt, Cambodia's production is considered large enough to support a shelling industry. Cambodia's crop is much larger than that of the Philippines (5,000 mt) and Sri Lanka (5,500 mt), which both have shelling industries.

Production in Cambodia is very similar to small cashew-producing countries elsewhere, with small farms mixed with larger farms and small plantations. Initially, until the cashew tree canopy closes, other crops are grown between the cashew trees. As in Vietnam, cashew production has to compete with crops such as cassava and rubber.

Estimates of yield per hectare average 700 kg, but can rise as high as 2,000 kg per hectare as a result of favorable weather and grower education to improve cultivation practices. Cambodia's yields per hectare are similar to those in Indonesia and parts of East Africa.

The prospects for Cambodian cashews

As the marketing strategy discussed in detail in Chapter 8 shows, Cambodia has good prospects for becoming a recognized cashew kernel exporting country. Until now there have been almost no recognizably Cambodian cashew kernels for sale on the world market because Cambodia's cashews are shipped to Vietnam or India for processing, where they are mixed with cashews from other countries. As this study shows, Cambodian cashews have a number of attributes which should appeal to international buyers. These include:

- good quality (kernel outturn of 24% to 28% is similar to Vietnam's outturn and places Cambodian cashews in the mid-quality range. Cambodian nuts are also larger and thus more valuable than Vietnamese nuts, with large nuts accounting for approximately 15% of Cambodia's cashew outturn).
- comparative ease of shelling, which means that kernels are less likely to become damaged during processing and lose value.
- an abundant workforce in rural areas who would welcome jobs in cashew factories if working conditions were decent and wages were fair.
- a large enough crop of cashews to justify establishing a processing industry.

- good prospects in the premium-priced organic cashew market because Cambodia's cashews are largely grown chemical free and could be certified as organic if reliable testing and certification were established in Cambodia.
- being able to trace Cambodian cashews back down the supply chain to the specific farmers who grew them (this is an advantage over cashews from shellers in India and Vietnam who mix cashews from several countries during processing, making it impossible to trace the cashews).

Interviews with buyers in North America and Europe show that a number of them would welcome Cambodia as a new exporter of cashew kernels, especially if product quality was high and suppliers were never late or defaulted on their contracts, as is common with some Indian and Vietnamese suppliers. In 2008 and 2010, when cashew prices on the world market rose dramatically, some cashew exporters defaulted on their contracts and resold at higher prices to new buyers. This earned them a bad reputation with buyers in Europe and North America.

Cambodia could also become a favored supplier because in establishing a new processing industry, it could take advantage of state-of-the-art technology and methods that would ensure good hygiene, environmental, and workers' health and safety standards. New technology could also mechanize the less pleasant aspects of cashew processing.

Recommendations for a Cambodian marketing strategy

Cambodia is currently exporting good quality (and potentially organic certified) in-shell cashews to Vietnam, thus losing a major opportunity to add value. The development of a shelling plant in Cambodia would add value and create employment, as well as create competition and enhance the value of in-shell exports. Establishing at least one quality processing unit is essential to build a positive brand image for Cambodian-grown cashews. Processing has the potential to add value of \$30-40 million per year, based on current levels of production.

With regard to establishing a processing industry, Cambodian processors are advised to take advantage of new processing technology and expertise available in neighboring Vietnam. The marketing strategy recommends establishing at least one high-quality factory that will help to build a positive image for Cambodian cashews.

The long-term marketing objective should be to export high quality, roasted, organic cashews in consumer packs for sale in supermarkets around the world. This would capture maximum value addition and set Cambodia apart from other origins. This is an ambitious goal and needs to be taken in steps. When a processing facility is established, the first step should be exporting raw kernels in standard bulk packs, as roasting and packaging in consumer packs presents many problems which would be difficult to manage in the initial stages of the business. For the time being, roasted cashews should be aimed only at the domestic or regional markets, where transit times are short and quality control and assurance procedures are less demanding. Although establishing a Cambodian processing industry is recommended immediately, continuing to sell in-shell cashews to processors in Vietnam and India is also recommended to ensure that the entire crop can be marketed.

Cambodia should target the US and European markets initially — especially the European market as it is the most accessible for new market entrants. This means developing close and sustainable trading relationships with organic importers that have access to the market for both whole and broken nuts and pieces. The strategy in this study also recommends exporting to an organic importer rather than a fair-trade importer because certification and standards have not been established yet for fair-trade cashews, the premiums paid for fair-trade products are only marginally higher than for organic cashews, and the organic market is much larger.

The study also recommends developing trading relationships with organic and/or conventional cashew importers in Asia (in Singapore, Malaysia, China, and Australia) in order to serve a convenient and growing market, with low or no trade barriers.

Although the strategy recommends targeting the organic cashew market, Cambodian suppliers should also target the conventional market for cashews as it is far larger than the organic and fair-trade markets combined. If sales to organic or fair-trade importers fail, cashews could still be sold to importers of conventional cashews.

The Cashew Plant





Chapter 1. Cashew Production

1.1 Origin production trends

Cashews nuts have been around a long time. They were spread from their native Brazil by the Portuguese who found the tree to be ideal in preventing soil erosion but also provided a consumable fruit.

Historically cashews have been known as a ‘poor man’s’ crop. Throughout the world, the nuts have been grown or gathered by small farmers with low inputs, low yields and low returns. Many people throughout Africa, India and elsewhere rely on cashews as their cash crop, and an essential source of income. Once shelled, this ‘poor man’s’ crop turns into a much sought after snack food, with opportunity for growth and value addition.

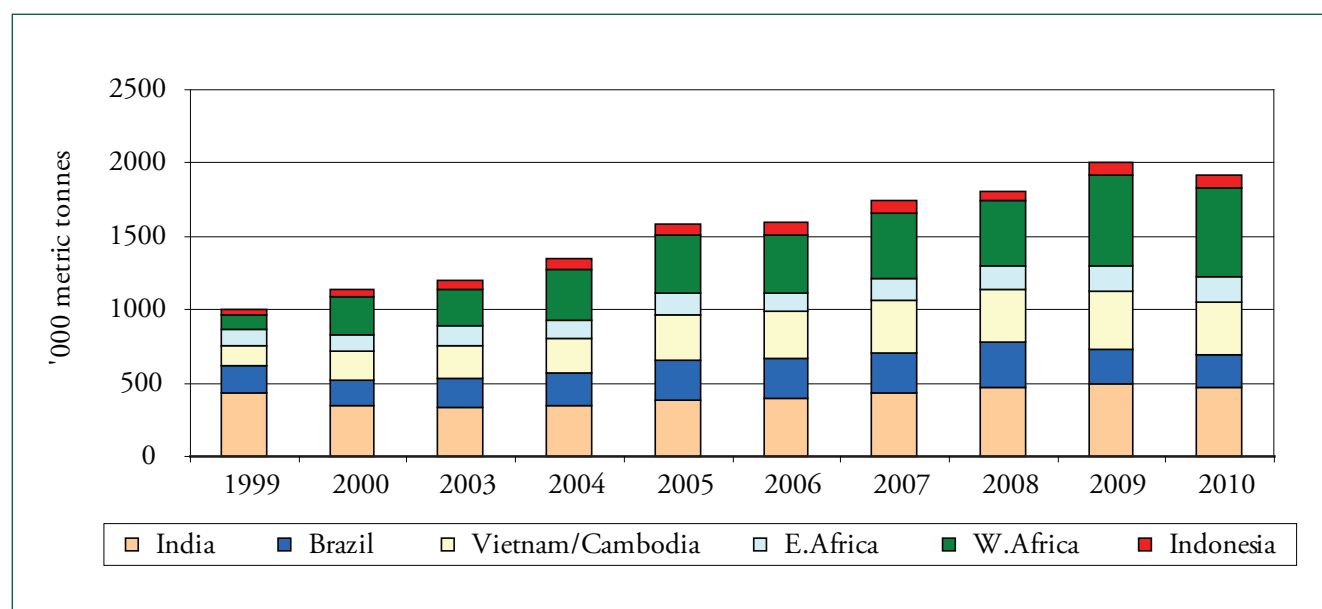
Commercialization of cashews did not take place until the 1920s when a method of shelling was developed which could avoid the hazards of the acidic shell liquid. Ethnic communities in the New York area took to importing the product and steady growth followed. The industry played a cameo role in the Second World War, supplying cashew nut shell liquid as an important component in the manufacture of brake linings. The 1980s saw the development of containerization and the growth of snack food consumption, which helped the cashew industry to grow rapidly.

Production of cashew nuts began in India and grew steadily from the 1920s to 500,000 mt in-shell by 1975. At that time, the countries of East Africa were major producers of kernels, but from 1975 onwards, production in Africa declined due to war and crop disease. As production in African countries declined, it grew in India. This occurred first with domestically grown cashews, and then with imported African in-shell cashews after the destruction of their shelling industry. Brazil planted significant plantations in the 1980s, growing to become the world’s second largest producer. Vietnam followed in the 1980s and 1990s, and is now the world’s largest exporter.

The recent increase in cashew production has been due to growth in Vietnam and West Africa, as trees planted in the 1990s have matured into full production. The annual supply of in-shell is now in excess of two million mt. New plantings continue in India and to a lesser extent in Vietnam. These are increasingly likely to be planted on marginal land, where cashews can thrive and other crops cannot.

Growth also led to volatile price movement, and problems managing difficult origins like India in rising markets became the most demanding task for those involved in the import of cashews. During the 1990s, import volume again grew as did manufacturers' direct contacts with origin shellers. In the 1980s, almost every kilo shipped was via a trader, merchant or importer. Today about 35% of imports are sold directly to manufacturers, usually through agents at destination.

Figure 1.1 World cashew production in-shell, 1999-2010

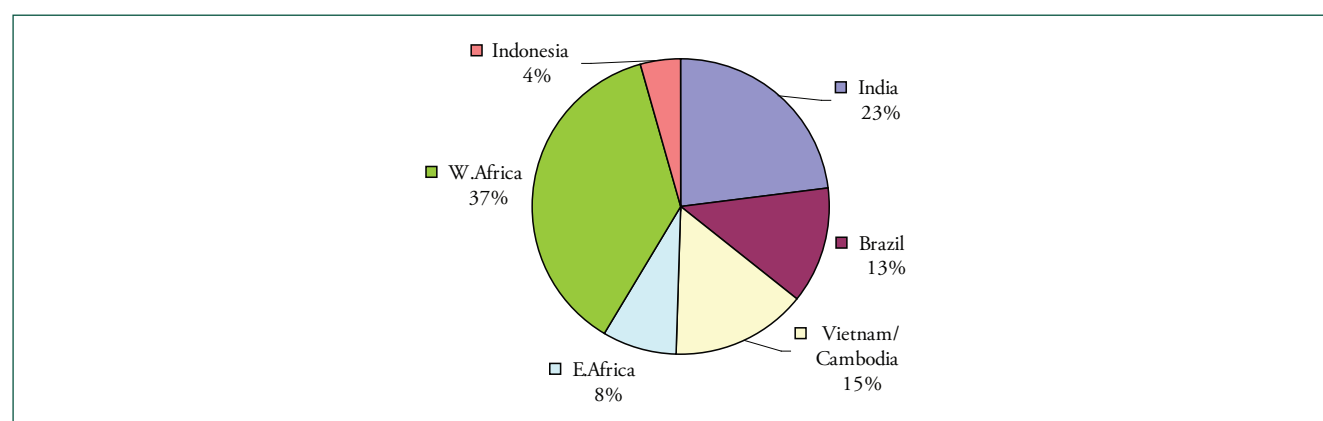


Sources: INC, Ingredient Sourcing Solutions, Trade Note: 2010 figures for Brazil and Indonesia are estimates

Despite the increase in production over a wide range of different countries, the shelling of cashews has not grown at anywhere near the same rate. In fact, as production has grown, the international in-shell trade has grown with it.

Looking at the global spread of cashew production, one can see that West African production, as a percentage of the total, has grown from 12% in 1996 to 23% in 2010. Vietnam's production has grown from 12% to 24% in 2009. East Africa's production has declined, as has Brazil's.

Figure 1.2 Production of cashews by region, 2009

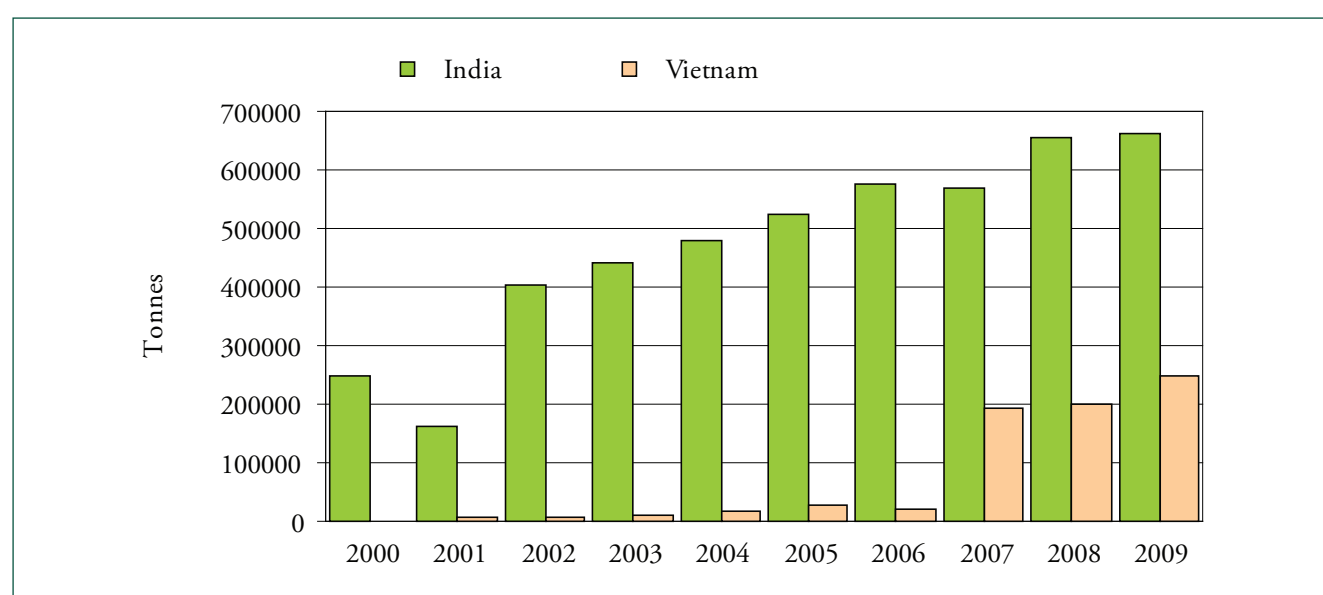


Source: INC, *Ingredient Sourcing Solutions, Trade*

However, if one looks at the market share by country of cashew shelling, one finds that India and Vietnam dominate, with 58% and 24%, respectively, even though they produce much less than these amounts.

The single most important factor in understanding the world cashew market is that more than a third of world production is shelled outside the country where it grows. Some 90% of African production is exported in-shell. Most of this product is moved many thousands of miles to India or Vietnam. Indian imports of in-shell cashews have grown by 66% since 2003. Vietnam's imports have risen from 6,500 mt in 2001, to over 200,000 mt in 2009, according to Vinacas, the industry association in Vietnam.

Figure 1.3 Cashew imports in-shell India and Vietnam, 2000-2009



Source : CEPC, UN Stat

Table 1.1 Cashew production in-shell, 2009/10

Origin	In-shell tonnes	Share %	Exports of In-shell
India	465,000	22.38%	0
Ivory Coast	335,000	16.13%	325,000
Brazil	300,000	14.44%	0
Vietnam	300,000	14.44%	0
Guinea Bissau	135,000	6.50%	125,000
Tanzania	90,000	4.33%	70,000
Indonesia	90,000	4.33%	75,000
Benin	85,000	4.09%	80,000
Nigeria	70,000	3.37%	45,000
Mozambique	65,000	3.13%	40,000
Cambodia	60,000	2.89%	60,000
Senegal	20,000	0.96%	20,000
Burkina Faso	16,000	0.77%	8,500
Ghana	15,000	0.72%	13,000
Kenya	10,000	0.48%	0
The Gambia	7,000	0.34%	7,000
Sri Lanka	5,500	0.26%	0
Philippines	5,000	0.24%	600
Thailand	4,000	0.19%	0
Totals	2,077,500	100%	869,100

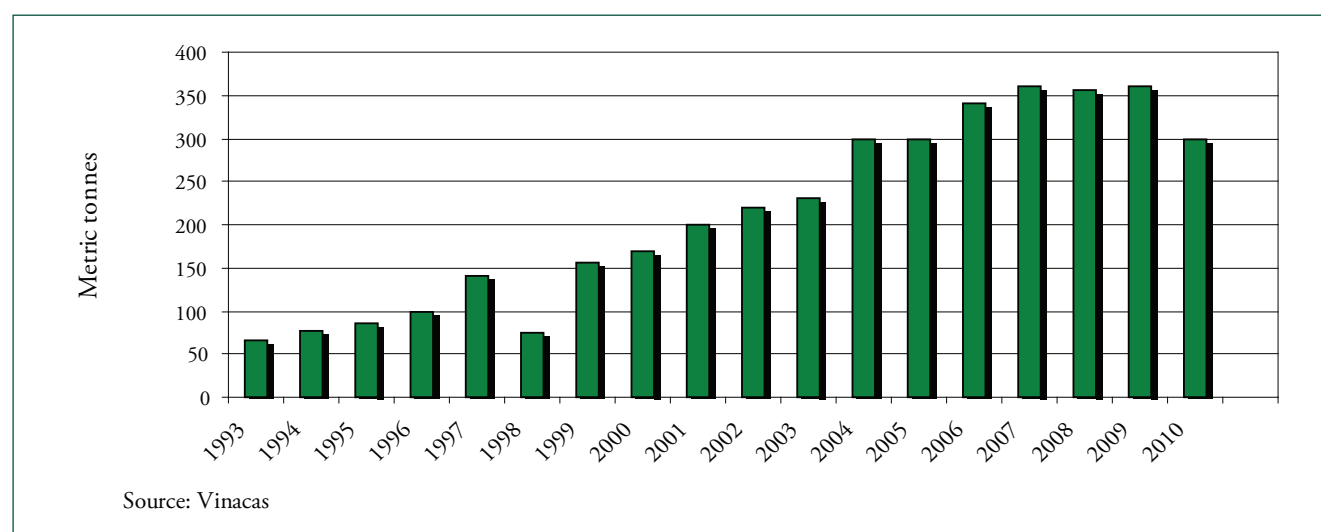
- In 2007, the domestic price for Indian grown, in-shell cashews was in the range of \$775-875 per tonne. The market for African cashews was in the range of \$550-\$650 per tonne (CIF India). The price difference is an expression of the risk or perceived risk for Indian shellers buying in Africa.
- The 'farm gate' price in Africa fell to as low as \$200 per tonne.
- There is no import duty on in-shell cashews in India. There is a 32% import duty on the import of shelled cashew kernels. The in-shell trade is here to stay.
- The lack of an indigenous shelling industry has cost African growers and their countries dearly over many years.

Sources: INC, Ingredient Sourcing Solutions, Trade

Note * Cambodian production is estimated here at 60,000+ tonnes in-shell. Estimates vary from 30,000 to 100,000 mt in-shell. The recent ADI Report, commissioned by IFC, estimates production at 42,000 mt. Vietnamese import figures report 62,000 mt for 2009.

In common with cashew producing countries throughout the world, there is little in the way of definitive research on crop size. Therefore, an estimate has been made based on hectares and a conservative figure for yield. This is by no means intended to be a statistically valid estimate of the crop, but is likely to be accurate enough to enable placing Cambodia within the context of the world market.

Figure 1.4 Vietnam cashew production in-shell, 1993-2010



Source: Vinacas

Table 1.2 Origin production trends

Origin	In-shell yield in tonnes per hectare	Production trends
India	800-1,200 kg per ha are reported officially, however, yields may be over estimated by official sources.	Production is increasing, although it appears that the state statistics exaggerate the trend. The industry is moving away from its traditional home in Kerala in the southwest, turning instead to the northeast and utilizing lower quality land for large-scale planting. Shelling, although diverse, is still primarily based in Kerala.
Vietnam	1,000 kg per ha, but there are reports of much higher yields in some areas. There are areas with up to 2,500 kg per ha.	Planting has been increasing and total acreage is now about 400,000 ha, although not all trees are producing yet. The target is to increase to 500,000 ha, although anecdotal evidence suggests farmers may be moving toward other crops like coffee and rubber. Growth in production may not be as steady as previously, as the Vietnamese industry has lost much of its reputation following failure to deliver on export contracts in a rising market in 2008 and 2009.
Mozambique & Tanzania	175-250 kg per hectare but varies widely.	Growth in the industry again after many years of neglect following the wars which tore the region apart in the 1970s and 1980s. Mozambique was a market leader during the Portuguese occupation, but the factories fell into disrepair and were nationalized and abandoned from 1975 onwards. Today 23 factories are established and production is recovering to meet both processing needs and the export in-shell market.
Brazil	500 kg, although there is much effort to introduce higher yielding varieties including the 'precocious dwarf' tree.	The area under cashews has been increasing steadily but a major growth spurt is not likely. Brazilian factories could probably process far more material if they were allowed to import in-shell, which is currently banned. Brazil harvests in Oct/Nov which gives it a distinct advantage.

Source: Ingredient Sourcing Solutions data gathered during study

1.2 Kernel outturn and quality

The quality of an in-shell nut is judged by the outturn (yield of kernels by weight), by the size of the nut, and by the damage to the nut. Outturn and size are a function of a wide range of factors including variety, growing conditions, husbandry, harvesting practices, and post-harvest techniques for drying and storage.

In general, the larger the nut, the higher its value. There are exceptions such as Guinea Bissau nuts which obtain the highest prices in Africa by virtue of good outturn, despite their smaller size.

In the international market, outturn is expressed as imperial pounds per 80 kilo bag – an unusual system which evolved due to the Africa/India nature of the trade. A high outturn would be expressed as 54 lb per bag – meaning 54 lb of kernels could be produced from an 80 kg bag of in-shell nuts – about 30%. In some areas, the simpler system of grams (kernels) per kg (in-shell) is used.

As a rule of thumb, the average outturn worldwide is about 24% (42 lb) except for Brazil, where the outturn is less at about 21%. The outturn is clearly a very important factor in considering the economic viability of a shelling operation. Other factors are the ease of shelling (often how difficult the testa is to remove), taste, moisture and insect damage. Each of these has an impact not only on how many kernels are out-turned from each kilo of in-shell, but also which grades are produced. For example, the difficulty of removing the testa may cause more nuts to be broken in the shelling process or a thin shell (as in Indonesia) may make it easier to cut the nuts open, leading to a higher yield of wholes.

1.3 Outturn comparison

It should be noted that there is a lot more to a successful shelling operation than just high out turning of nuts. In the chart above, the two countries with the highest outturn yield (Guinea Bissau and Indonesia) are among the least successful shellers, exporting 97% and 80% of their production, respectively, to be shelled in Vietnam and India. Conversely, Vietnam is the most successful shelling country, but has to work with the lowest out-turning cashew nuts.

Table 1.3 Outturn comparison

Origin	Yield	%	Count per kg
Guinea Bissau	54 or 306 g	31	230
Indonesia	51-54 or 290 g to 306 g	30	190-210
Tanzania	51 or 290 g	29	200
Benin	48 or 272 g	27	195
Cambodia	48 or 274 g	27	160-200
Mozambique	46 or 260 g	26	185
Ivory Coast	48 or 272 g	27	205
India	46+ or 260 g	26	190-210
Nigeria	45 or 255 g	25	200
Vietnam	42 or 240 g	24	180-200
Brazil	37 or 210 g	21	160-180

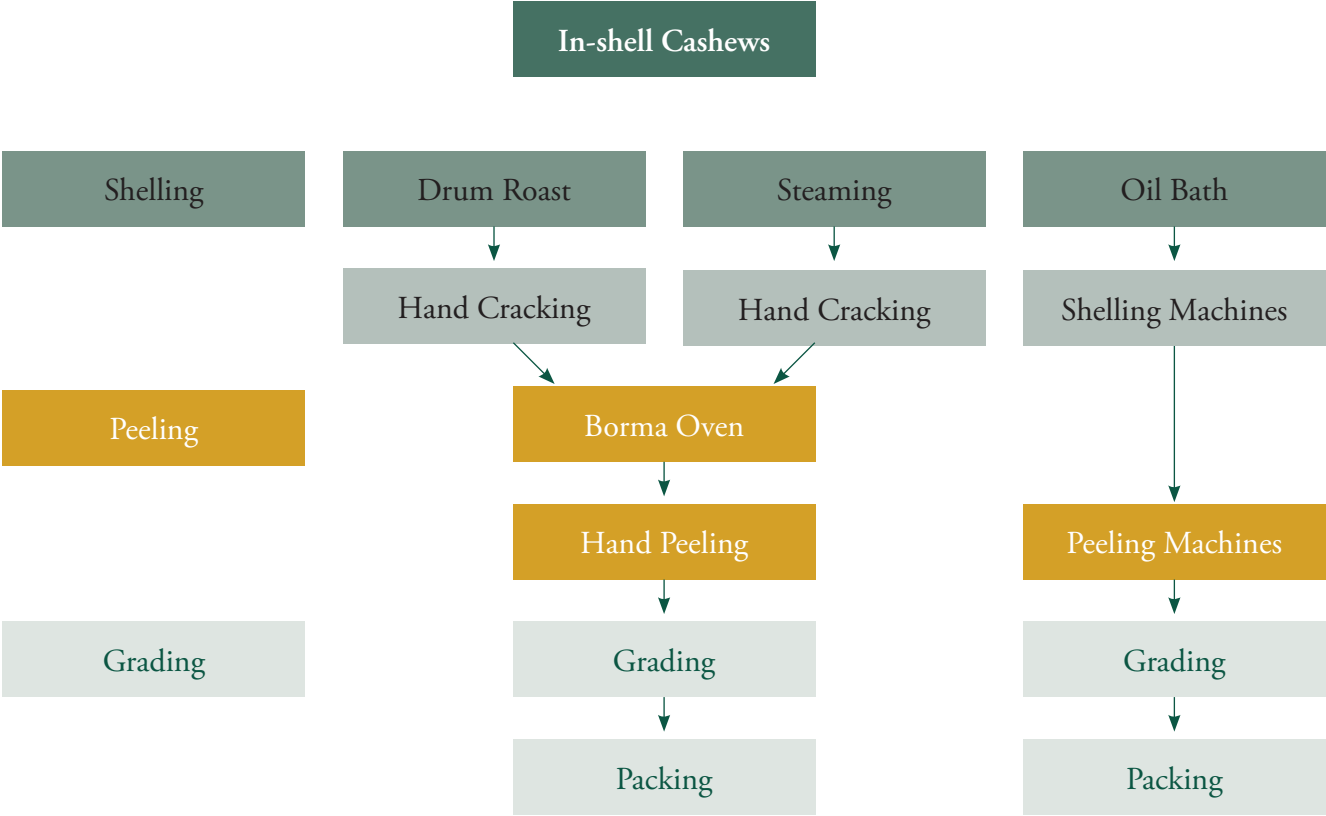
Sources: *Ingredient Sourcing Solutions, Trade*

‘Easy to grow, hard to shell’ could be the slogan for cashew nuts as the removal of the hard outer shell is a complicated process. However, shelling can be a rewarding activity as it involves significant value addition.

The processing countries are very different from each other. Generally, cashew processing operations have developed as low investment activities characterized by minimal use of technology and the availability of ‘cheap’ labor. This is partly due to the character of the industry in the main shelling countries, but is also due to the failure so far of low-cost automated shelling and grading processes. Cashew shelling remains highly dependent on its work force. As the cost of labor has escalated, and the quality of other jobs has improved in India and Vietnam, shellers have been forced to improve wages and working conditions. It is likely that this trend will continue. Shellers, particularly those in India, may be forced to reconsider the location of some of their low-quality factories.

The exception is Brazil where automated shelling is the rule and labor costs are much higher than elsewhere. However, in order to compete, Brazilian manufacturers need lower raw material costs. In 2008, efforts to import in-shell were frustrated by the state authorities, causing cashew factories to close and workers to be laid off.

Figure 1.5 Cashew shelling and production process



Sources: Shellers, Technoserve, Mozambique

Table 1.4 Processing comparisons for major shelling countries

	India	Brazil	Vietnam	Mozambique/ Tanzania
Harvesting	Picked	Fall	Fall	Picked
Roasting	Steam/Oil bath	Oil bath	Oil bath	Oil bath
Shelling	Manual cracking; many seasonal enterprises	Mechanized	Mix/cracking; many seasonal enterprises	Manual cutting
Grading	Manual	Mechanized	Manual	Manual
Yield shell/kernel	26%	21%	24%	26-29%
Packing	Plastic flexi	Corvac	Plastic flexi	Plastic flexi
Technology	Low	Medium to high	Low to medium	Low
Proprietors	Family	Corporate	Trader	Family
Attitude	Conservative	Corporate	State & Entrepreneurial	Entrepreneurial
Investment	Minimal	High	Medium	Low
Performance	Not reliable	Reliable	Very unreliable	Reliable
Quality	Reliable if checked	Reliable	Reliable with exceptions	Reliable if checked
Imports in-shell	600,000 mt	Imports banned	100,000 mt	Exporter
Number of factories	200-250	Less than 20	200	28
National shelling capacity	1 million mt in-shell	450,000 mt in-shell	650,000 mt in-shell	50,000 mt in-shell
Domestic kernels market	6 million cartons of kernels/the fastest growing market in the world.	10,000 mt of kernels (often pieces and smaller grades) which are more prevalent in mechanized processing	Small, in the range 4,000 mt of kernels but close to China of whose market they have 90% share.	No substantial market

Sources: *Ingredient Sourcing Solutions, Trade*

Table 1.5 Kernels comparison (based on buyers' comments)

Origin	Standard	Sizing	Taste/Appearance	Broken	Markets
India	CEPC	High yield of WW320 but also WW240, WW210 and WW180.	Regarded as the best tasting nut. Sweet, no after taste. Ivory color. Ideal for roasting.	Average breakage. All the different grades of broken are produced, but few small pieces.	Accepted everywhere. Favored in Japan and the Middle East.
Brazil	AFI, UNECE	Large nuts, with SLW1 160/180. LW1 is more plentiful than in any other origin.	Regarded as inferior to Indian nuts. Color can be darker – more suitable for a dark roast.	Wide range of broken down all the grades, including meal, second meal, etc. Brazilian large pieces are larger and trade at a premium compared to other origins.	Not favored in Europe but widely accepted in the US. Also sought after where large nuts are in demand, e.g. Lebanon.
Vietnam	AFI	Generally few large nuts, some WW240, few WW450.	Regarded as ideal for raw usage & packing due to a light, whitish color. Sometimes tend to discolor when roasted. Lightly blemished grades are in demand when prices are high.	Produces pieces which are regarded as smaller and therefore cheaper than Indian grades like LP, as opposed to LWP.	Accepted everywhere, although favored in Australia. Has displaced India as main supplier to EU.
East Africa	AFI	Approximating WW320. Not many WW240, or larger.	Similar to Indian, although color may vary more.	Due to small-scale production, produces small quantities of many grades which are difficult to market.	Regarded as inferior in Europe, despite marketing efforts. US buyers expect lower prices, but are less critical of the quality.

Source: Interviews conducted for study

1.4 In-shell cashew prices

It is never clear which follows and which leads but, in general, prices for in-shell cashews and kernels move in the same direction, but possibly at different rates, depending on the circumstances. Figure 1.7 shows the move upwards in 2004, followed by an easing back of prices in 2005. The differences between prices within any given year reflect the better qualities available from different origins, and the timing of the harvest.

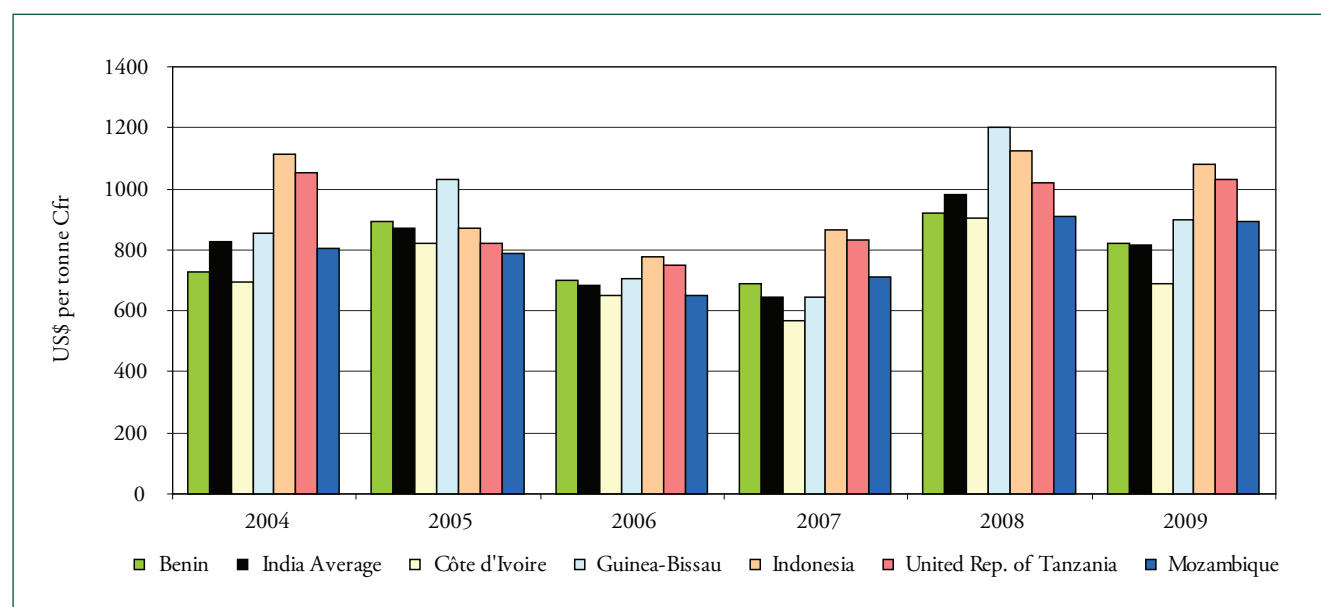
The in-shell cashew trade is poorly reported and remains a business characterized by unreliable suppliers and buyers, contract defaults and quality disputes. There are major distortions in the trade and many African growers are paid very low prices for their product, which of course is not fair.

The information below is drawn from official sources in India and is intended to act as a guideline only.

In-shell prices are very volatile and influenced by:

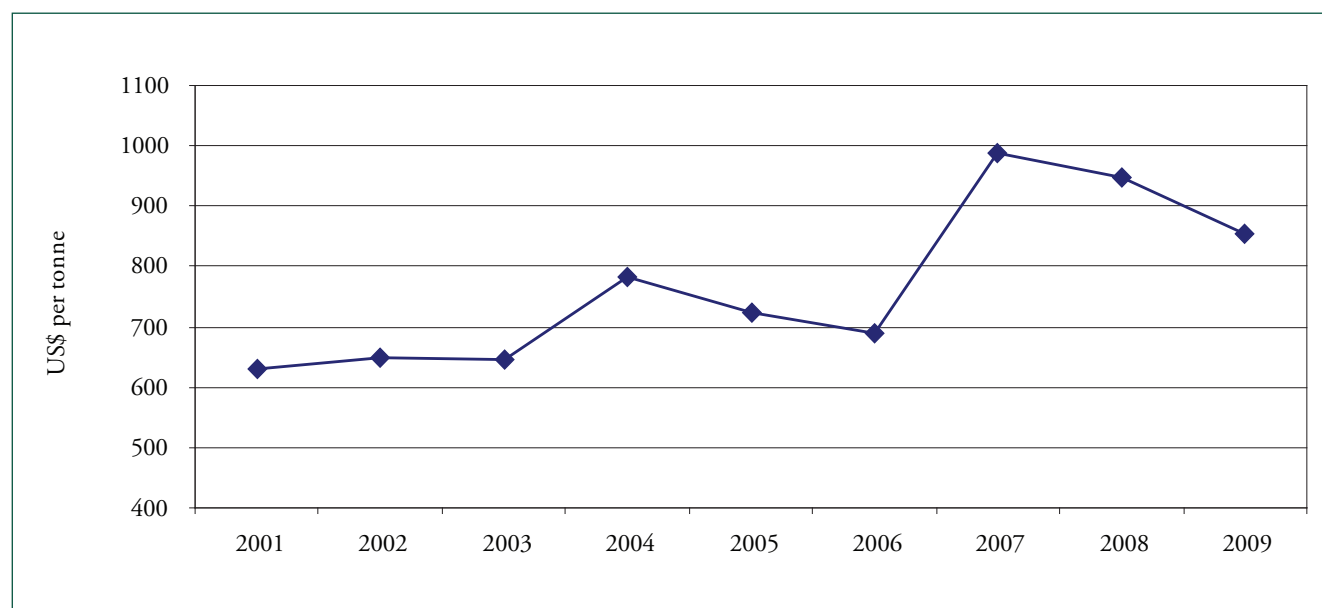
- Quality of the nuts (yield, nut count, damaged nuts).
- Crop size, especially in India.
- Price of and demand for kernels.
- Exchange rates, especially the US\$/Indian Rupee, now that India consumes many of the nuts it imports.
- Volatility leads to further volatility, as price movements cause contract defaults by both sides.
- Availability of finance.
- Political factors, especially in West Africa.

Figure 1.6 In-shell cashew price per tonne, Cfr India main origins sorted by harvest timing



Source: UNComtrade

Figure 1.7 Indian domestic in-shell prices converted to \$ at annual average exchange rate



Source: CEPCI

Cashew Nut Shell Liquid (CNSL): CNSL is a by-product of cashew processing. It is a viscous liquid contained in the honey comb, inner shell of the raw cashew. It has a long history of use in the manufacture of brake linings when refined as cardanol, and in the manufacture of epoxy coatings. Technical information and specifications are available at www.cashewindia.org, the website of The Cashew Export Promotion Council of India.

Demand for CNSL has proven to be resilient in recent years, with Indian exports in the region 6,500-7,000 mt per year. The main markets for CNSL are the US, Japan, Korea, the UK and China. Prices range from \$250 per tonne to a high of \$575 per tonne, as seen during the peak of cashew prices in 2008.

Annex 7 contains a study on CNSL and other cashew by-products and their markets.

1.5 Developments in cashew processing, technology and quality

As already mentioned, the cashew nut is very difficult to shell by virtue of its hard shell, awkward shape and the presence of the toxic CNSL. The economics of cashew processing depends largely on the proportion of kernels extracted without being broken or damaged. For many years, technology was unable to provide a commercially viable solution to this problem. Mechanized or semi mechanized shelling broke up to 60% of the kernels, as opposed to 15-20% in the manual process. Indeed, in the 1980s and 1990s, the cashew producing countries were littered with failed mechanized factories.

Consequently, and with the notable exception of Brazil, cashew processing developed as a 'low tech', labor-intensive operation, dependent on plentiful skilled, and usually female, low cost labor. The success of the industry in India and Vietnam was built on the work of hundreds of thousands of low paid workers who developed remarkable skill in shelling and particularly in grading cashew nut kernels. Many of the factories in India, Vietnam, and now emerging after many years, in East Africa, are relatively small-scale ventures offering employment at reasonable wages (by local standards) to workers who have few alternatives. India, in particular, has a vast number of low capital invested 'factories' (often just a simple shed) competing with well run, hygienic processing centers.

Starting in the 1980s, the Brazilian industry developed on a different course, with a few large mechanized factories (currently 10 operators). Brazilian processing is characterized by high running costs, with investment levels and wage levels much higher than in other cashew countries. As a result, in-shell prices to growers have a history of being lower in Brazil than in the other major processors (India and Vietnam). In addition, the Brazilian industry suffered from the inability of the mechanized process to reduce breakage of kernels during shelling and peeling. Bear in mind, that in today's market, kernels broken in two drop from \$2.95 per lb to \$2.35 per lb, and broken cashews can further drop to \$1.50 per lb, FOB.

Recent years, and especially 2008 and 2009, have seen changes in processing. A series of what may be termed 'push' and 'pull' factors have caused processors to revise their methods and to reassess their attitude toward capital investment. 'Push' factors such as labor availability arise before and during the shelling operation. 'Pull' factors arise largely due to pressure applied from further up the chain by customers, import regulations and food safety inspections at the consumption level such as, for example, traceability legislation in the EU.

1.5.1 Drivers for change in cashew processing

Push factors

- Labor costs and availability in southern India and Vietnam.
- Low prices for broken kernels relative to wholes.
- Energy and shipping costs.
- Packaging costs.
- Low cashew prices in the first years of the decade.
- Availability of lower cost processing machinery.
- The emergence of competition from Vietnam.

Pull factors

- Food security, safety and quality demands of customers and governments.
- Traceability legislation, especially in the EU.
- Fewer, larger customers.
- Expanded international markets and the emergence of the Indian domestic market.
- Labeling and packaging demands from customers.

The most notable development of 2009 has been the upsurge of interest in mechanization in India which matches development that took place in Vietnam over a longer period.

The Indian shelling industry has been based on low-cost labor since its inception. The efficiency and low wages of the workers in Kerala, Mangalore and Tamil Nadu over the past 30 years meant that some 500,000 workers were employed shelling and processing cashew nuts. Although it should be noted that the industry paid better than most alternatives, and many families would have had no income if it were not for the cashew industry.

In other countries, mechanized units failed for a variety of reasons, but failed primarily due to the technology not being efficient enough to guarantee low breakage of kernels. Today, hand shelling remains the most effective method of shelling cashew nuts. As shown above, as prices have risen the differentials between whole nuts and broken pieces have widened, which makes the argument in favor of hand shelling even greater.

However, in recent years, in line with increasing economic growth and increasing prosperity in India, the cost of labor has increased, as have workers' expectations. This has impacted cashew processors both in terms of the higher wages they must pay existing workers and in difficulties attracting new workers to the industry. This is most pronounced in Kerala where the workers are highly unionized. In addition, many of the women workers are pressured by their adult children who work in the software or tourism industries to leave the hard work and low status of cashew shelling. A number of years ago, processors began moving their processing operations outside Kerala, away from unionized workers and strict labor laws. The first moves were over the border into Tamil Nadu, and later further afield in India.

As India developed further, the workers in other states demanded higher wages and better working conditions and prices were driven up by cost factors as much as by the supply/demand matrix of any given season. In the important processing area of Mangalore, shellers said that difficulties in finding and keeping labor were not always due to wages but also to working conditions and environment. Shellers reported running factories at a loss for a number of months in order to keep their workers. Previously, the industry sent workers home and closed the shelling factory until trading conditions improved.

Similarly in Vietnam, workers have had more options for jobs with better conditions causing them to demand better pay, or to leave the cashew processing industry.

At the same time as wage costs were rising, a range of other costs also started to rise. These include the price for energy, shipping, packaging, gas and services, and all started to reduce shippers' margins. The cashew processing business has remained profitable, but processors expectations of quick, high returns are not being met. Just

a few years ago, an entrepreneur who knew the industry well could set up a shelling operation for less \$20,000 in India and employ local labor. Now the cashew industry is going through a phase of mechanization other industries went through years ago. However, the cashew industry is only just developing technology which can replace workers while not breaking a high percentage of the kernels.

1.5.2 Technology – recent developments

Brazil remains the leader in the processing of cashews. All the factories are mechanized, with practices and methods similar to the food factories which buy their products for further processing. In recent years, a system has been developed in Brazil which is reputed to reduce breakage of kernels to below 20%. This is much better than breakage levels exceeding 50%, as in the early days of mechanized processing. The technology involved is closely guarded. Investment levels are in the range of \$2-4 million.

As discussed earlier, this shows the differences between the cashew industry in Brazil and the industry in other countries. Brazilian processors tend to be large companies, often part of diversified industrial groups which process and/or trade in a range of products. This contrasts sharply with processors in India, Vietnam and Africa which tend to be small, often family-run businesses, which lack the management capacity and interest to initiate large capital projects.

A. Peeling

The major development in 2009 has been the emergence on the international market of Vietnamese suppliers of processing equipment. Since the mid-1990s when cashew processing started to emerge in Vietnam, there has been a history of innovation and development in processing. At that time, equipment for full processing factories was available from Italy and the UK, but investment and foreign exchange requirements made it difficult to purchase these. Progress in Vietnam has often been made in cooperation with a local technical college. Methods and machines were developed, though the process remained essentially a manual one. In recent years, with the flowering of the Vietnamese processing industry, a number of companies have started to design and supply cashew processing equipment in competition with the established suppliers based in Europe.

Peeling is the removal of the testa from the kernel after the outer shell has been removed. The nut is usually heated to make the testa brittle and then removed by hand, sometimes requiring scraping with a small knife which can damage the kernel. The mechanized process involves a rotating drum to loosen the testa, with removal thereafter by compressed air. An Italian company, Oltremare, offers a similar process as part of its automated, fully-integrated systems. The Vietnamese suppliers claim their machine has twice the capacity of competitors but this remains to be demonstrated. Vietnamese suppliers presented their new peeling machines to the Indian industry at a trade meeting in the middle of 2009. It is understood that Indian processors placed about 20 orders for the Vietnamese peeling machines.

In Vietnam more than 100 of the 225 factories have purchased these machines. A major processor, Lafooco, reported that breakage has actually reduced since moving to the mechanized system, and others report that each machine replaces 30 workers in the peeling section.

Feedback from a number of processors in India is very positive as the Vietnamese machines appear to address the problem of excessive breakage, while still removing the testa cleanly. Reports indicate that though a higher percentage of kernels will have to be reprocessed than is the case with manual shelling, the overall results and savings are good. In India, processors would be satisfied if the machines could match the performance of manual workers. Processors' primary difficulty is not capacity or cost, but simply finding workers to do the peeling by hand.

Patents for cashew peeling machines date back to 1969, but the new machines from Vietnam finally offer mechanized peeling at a price processors can afford. Feedback from processors suggests that equipment for a mid-sized factory would cost about \$20,000. Manufacturers claim the machines peel at a rate of 100-300 kg per hour, with a yield of wholes up to 70%. A single worker shelling by hand can peel an average of 12 to 18 kg per day. At 100 kg per hour, the machine replaces about 50 workers, saving about \$150 per day in the lower paying factories. The machine should pay for itself within months, even with a reduced yield of whole kernels. One drawback, however, is that peeling machines do not handle 'steam process' cashews as well as they do 'oil bath' roasted cashews.

Vietnamese producers such as Viet Mold Machine Co. Ltd, Coa Than Phat Co., and Mkec, continue to promote their equipment in India and will inevitably offer it elsewhere. Their competition is from the large suppliers of automated integrated processing systems that require heavy capital investment. The Vietnamese low investment, fast payback alternative may change the face of cashew shelling.¹

B. Shelling

Shelling cashews is a difficult and sometimes hazardous process due to liquid in the shell (CNSL). In the 1970s and 1980s, most of the East African shelling factories used mechanical cutting or a centrifuge system. High levels of kernel breakage resulted. Since that time, outside of Brazil, shelling has been a manual operation.

Recently, two new offerings have come to the market. From Buddhi Industries of Sri Lanka comes a stand alone, semi-automatic shelling machine, with a capacity of 16 kg per hour. This is operated by a single individual who does not need to be skilled. This promises breakage of almost zero kernels, and no contamination from CNSL, the toxic liquid in the shell. This system offers a good solution for a small- to medium-sized sheller, and flexibility in terms of operating capacity. A similar machine has been developed by the Indian Post Harvest Technical Centre at Kharagur. This machine has a shelling rate of 70%, capacity of 18 kg/h and output of 50% wholes. The Sri Lankan machine has significantly advanced this capacity, although in terms of real production, it remains to be fully tested.

Vietnamese manufacturers have also come to the international market this year and offer much larger machines, with a capacity up to 200 kg per hour. Breakage and damaged kernels are said to be in the range of 30-35%.

Feedback from shellers regarding both shelling machines is mixed, whereas the peeling machines received immediate positive reaction. With the shelling machines, there are concerns about CNSL contamination and levels of breakage. Both machines are powered by electricity which in many cashew processing areas is unreliable.

¹ Video link http://www.youtube.com/watch?v=Z-jnY4_6YIU

To make the best use of these machines, processors need to have their own generator if they cannot rely on uninterrupted electricity.

It is understood from trade sources that work is ongoing to develop a shelling system based on freezing the nuts. However, this approach raises concerns for processors in remote areas which do not have adequate electricity. Further developments in the freezing of cashew nuts are expected in 2010.²

The economics of mechanical shelling is compelling. A skilled worker can shell up to 80 kg per eight hour shift. Workers risk CNSL contamination and use a protective chemical coating on their hands or, more traditionally, coat their hands with ash. In some countries workers wear gloves, though some dislike these as they feel the gloves slow them down.

It is clear that the cashew industry wants low cost, flexible capacity shelling machines which minimize breakage and contamination by CNSL. In the past two years, major steps have been made in developing these machines, however, contamination and capacity are still concerns.

C. Other factors: peeling and shelling machines

If peeling and shelling were automated, initially labor in processing factories would not decline as the workers currently engaged in peeling and shelling would be moved to other sections where there is a shortage of workers. In the longer term, workers' numbers will drop as skill levels rise in other areas such as grading.

The next stage, mechanization of the grading system, is more challenging. Despite developments in color sorting equipment, cost of the equipment remains very high, and operation and programming of the equipment requires a high level of skill. Even in the high investment, highly automated cashew factories of Brazil, there continues to be a place for manual grading by highly skilled workers. For the present at least, no major change is anticipated in manual grading.

D. Heat treatment

After cashew kernels have been shelled they must be heated to make the testa brittle. In the past, due to uneven air circulation within the oven, kernels could be burned, and a whole range of 'scorched' grades were developed as a result. In recent years, buying interest in these grades has gradually died, so it is essential that drying avoids any scorching of kernels. This is successfully done now by using a tray drier, which is usually powered by diesel or electricity. It is very important that these systems include a timer and accurate temperature settings so that the heat can be controlled. There are a large number of products available both from India through companies such as Gayathri Industries, and from Vietnam. There are no dramatic developments in this area, but it is worth noting that Vietnamese equipment suppliers entered the market this year.

² <http://buddhiindustry.com/products.html>
<http://www.vietmoldmachine.com/>
<http://www.oltremare.biz>

E. Traceability

Recently, as outlined above, this aspect of the supply chain has become more and more important but there have been few innovations to help with this. The marking of shipping bags for in-shell cashews is now taking place. This allows a processor to know and record the origin and supply chain for product processed on any given day. This can be incorporated into the markings on packaging so that if a customer complains, the processor will be able to immediately identify the product's history. This is an essential part of brand creation and quality assurance development, especially for a new entrant. The adding of bar codes or other tracing systems to food products is not new technology, but has not yet been applied in the cashew industry.

F. Packaging

Over the past ten years, the packaging of bulk cashew nut kernels has not changed since the phasing out of tin packing and the introduction of vita, flexi, or corvac packs. These are the standard packs well known to the trade and described later in this study.

Recently, 2x25 lb packaging has been phased out in favor of the 1x50 lb (22.68 kg) pack in a carton. This change has come about due to increased packing costs at origin, and exporters charging a premium price for the 2x25 lb pack.

Feedback from major roasters and packers of cashew nuts suggests that their ideal packaging would be a large bulk bin or tote, such as that used in the almond, peanut and sunflower seed industries in the US. These bins eliminate the need to unload by hand at the destination, which is very expensive, and instead the bins can be unloaded by forklift and handled within the factory, using existing systems. Currently cashew nuts have to be tipped, carton by carton, into hopper bins in order to enter the process. The bulk bins or totes used for almonds, peanuts and sunflower seeds are one tonne in capacity, with an inner liner which can be sealed. A one-way pallet is built into the base of the bin.

There are inherent difficulties in switching to such a system. Problems such as kernel breakage and the possibility of infestation have to be addressed by correct handling and sealing designs and systems. Some private trials have been undertaken in Brazil. A supplier which could offer this type of packaging would have a significant competitive advantage.

It would be ambitious to supply with this packaging, but a new country of origin such as Cambodia could aid its acceptance as a supplier by offering this preferred shipping option.

G. Lessons for Cambodia based on recent technological developments

- Mechanization of the cashew processing industry is underway worldwide as a result of new low cost machinery, plus rising labor shortages and costs.
- There is now an alternative to either an all manual or a fully automated process.
- Shelling machines need further development.
- There is a wealth of expertise and equipment available in neighboring Vietnam.

- Vietnam is the main source of machinery, but consider India and Sri Lanka as alternative suppliers.
- Standard packaging is acceptable, but large bulk packaging may create a competitive advantage.

1.5.3 Quality problems arising in 2009

For the most part, the usual quality issues were seen across the industry. Poor grading, poor kernel color, corrupt cargo inspectors, and infestation of cargo continue to plague the industry, but are often the result of factories cutting corners – sometimes deliberately – on lower-priced sales contracts. These problems have been present for many years, but are largely under control as a result of improved inspection and certification at the time of shipment.

The problem of **chlorophenol** arose in 2008 and 2009. This is the tainting of cashew kernels with a completely alien taste, described by buyers as a ‘chemical taste’. This problem could seriously damage the industry and has led the Cashew Export Promotion Council of India (CEPCI) to issue specific guidelines for the handling and shelling of cashew nuts. The problem comes from cashew nuts’ exposure to organo-halogens such as chlorine, bromine or iodine.

Possible causes include the use of plastic bags to carry in-shell, the use of chemical cleaning agents in factories or drying yards or the transport of in-shell cashew nuts in trucks that were previously used to transport chemicals. Studies on this are not yet complete, but reports from processors indicate that chlorinated water used in processing may be the cause. The problem arose in a range of factories, some of which had good facilities and procedures. It is important for all processing organizations to take a careful, detailed part in the post harvest handling of the nuts in order to avoid this kind of risk. Processors must never forget that it is very easy for a food scare to make newspaper headlines and cause irreparable damage to a processor’s reputation and steep decline in demand which impacts the whole industry.

A second problem not related to cashew nuts directly, but with consequences for the industry, is the problem of salmonella found in peanuts and pistachios in the United States. Two scares had a serious impact on sales at a retail level and caused a number of factories to close for some time. The contamination may have taken place during harvest due to wild birds, or may have taken place during processing. However, the impact is very clear due to a marked decrease in sales, investigation by the Food and Drug Administration of the US, closure of factories, and legal actions for damages and fines.

As a result of the salmonella scare, monitoring of microbiological threats has risen to new levels at nut packing operations in the US. As the nuts were roasted at high temperature after purchase, buyers previously accepted the origin certificates without retesting; however, from now on, most factories will test as part of their intake procedures.

The problem of ‘blocking’ continues. This is when cashew kernels vacuum packed in a flexi or corvac pack stick together in a block. This problem sometimes disappears if the opened packs are left to stand for a couple of hours. The AFI recommends that the goods be frozen to alleviate the problem. This problem may arise due to over pressurization in the packing process, the use of too little gas in back flushing the packs, or excess moisture at the time of packing.

A third issue, which has little impact other than to demonstrate the value of a good reputation, was the gluing back together of cashew splits and their sale as wholes because of the large price differential between the two. This incredible fraud, which took place in Vietnam, was discovered on the arrival of a number of containers at factories in the US and EU. The goods shipped, which had been paid for, were completely useless as food. A list of the offending factories has been circulated in the trade and unfortunately the bad actions of a few have served to damage further the reputation of the Vietnamese industry. In light of this kind of activity, a new entrant from any origin should be ready to undergo a stringent process of evaluation for quality, process, and integrity.

1.6 Recent developments in the cashew sub-sector, region by region

Cambodia is in a good position to compete in the global cashew market. The cashew economy is undergoing a process of globalization of consumption – people who had never seen a cashew nut some ten years ago are now keen consumers. Today product can flow east or west and this trend will continue and grow. On a supply level, there are initiatives to re-launch processing in Africa, but the challenges remain great and willing lead firms are few.

In 2009, record quantities of in-shell cashews were shipped to India and Vietnam for processing, despite reductions in quality standards as a result of poor weather and poor harvest handling problems in West Africa. Given growth of the Indian and Chinese markets, the two big processing origins of India and Vietnam continue to have a stranglehold on the cashew industry.

1.6.1 Trends in Asia

Vietnam

- The rate of planting cashews appears to have stabilized following uneven development and fluctuating returns for growers and stable crop growth is predicted for the near future.
- Higher costs for labor and energy.
- Further development of mechanization, reducing costs and improving prospects for the cashew industry to meet consumer expectations regarding quality, hygiene and traceability.
- A major project launch in Binh Phuoc – a \$5 million cashew processing plant, with a massive 50,000 mt capacity using environmentally-friendly Vietnamese technology.
- Vietnamese processing technology marketed for the first time to other cashew-growing countries.
- Continued loss of buyer support due to lack of contract integrity.
- Reputational damage caused by high profile fraud (the gluing together of Fancy Splits and their sale as Wholes).
- Processing capacity static and even declining.

Cambodia

- Exports of in-shell cashews continue, with exports to India becoming a feature of the market.
- Vietnamese interest in building a combined cashew drying and storage facility for export of in-shell from Cambodia and interest in building a shelling plant for organic cashews.

Indonesia

- Processing is in trouble as shellers find it difficult to compete with high export prices for in-shell nuts. It is unlikely that Indonesia will commence shelling in bigger volumes, given the cost structure.
- Indonesian processors may be customers for imported nuts of lesser quality than their own.
- Processing capacity is static and the crop size is slowly falling.

Philippines

- Remains a small producer, but with ambitions to become self sufficient by 2020.
- Planting initiatives in Palawan.
- Processing units are not operating at a size which allows investment – Could possibly emerge as a customer.
- Processing growing slowly from a small base. Not a significant factor.

India

- Dramatic growth in the domestic market, causing shellers to become more inward looking for sales and has increased their appetite for in-shell nuts.
- High prices, easier order handling and currency factors virtually remove Indian packers as suppliers of forward contracts to the European and North American trade.
- Higher labor, energy, transport and packaging costs are leading to a new attitude toward investment. Processors are now interested in making modest investments in mechanization. This may create tougher competition for other countries if Indian exporters can reduce their cost base.
- Production growth has stalled. Despite new planting in recent years, it appears that many trees may have ceased production or been cut down during low price periods in the first years of the last decade.
- In a small, but perhaps significant development, the Indian press reports that a number of cashew processing plants have been forced to move location due to the pollution they cause. The Pollution Control Board in the Palasa district of Tamil Nadu has banned the use of drum roasting in the municipal area. This has increased costs in the short term, but in the longer term, this will most likely lead to changing to steam processing.
- India still has processing capacity well over its ability to source but many of the factories are content to run on a seasonal basis.
- Honoring of contract integrity has become a problem from all but a few reliable shippers.

Sri Lanka

- New government-sponsored planting initiatives
- Implementation of government-sponsored training program for growers.
- Development of shelling machines.

1.6.2 Trends in East Africa

Mozambique

- Continued support from USAID and Technoserve is helping the shelling industry develop. Problems remain with regard to government regulations for export (in particular timing of the sale of in-shell nuts for export which is prohibited until January of each year, causing the nuts to arrive with the full flush of Vietnamese processing and handing Tanzania an artificial competitive advantage.

- Processing developments and market penetration though small, is growing well. There are still a number of quality issues reported and the sales in the US are not as good as they could be.
- Processing capacity continues to grow as does in-shell nuts supply, but not at a rate to threaten current price levels.
- Crop size is growing. Estimated at 65,000 mt in-shell.

Tanzania

- Processing capacity static. The old factory buildings sold to private investors have not been developed to the extent hoped for by the government. Processing capacity remains at 30,000 mt in-shell, with production in the range of 100,000 mt. The operating factories have done well and established themselves in the marketplace.
- The warehouse warrants system is reported as not working as well as expected in enhancing grower prices. It appears that prices are not as high as expected at auction, despite a strong international market.
- The crop is falling slowly due to the maturity of trees.

Kenya

- Government banned the export of in-shell nuts, with a view to supporting the small indigenous processing industry.
- Crop size is slowly dropping and Kenya is unlikely to emerge as a serious participant for some time. Production has dropped from a high of 25,000 mt to 10,000 mt, and processing has been in crisis since the failure of the plant at Kilifi.

1.6.3 Trends in West Africa

Nigeria, Benin, Togo, Ghana, Cote D'Ivoire

- There has been a major increase in funding for the research and development of the cashew processing industry. The Gates Foundation, in cooperation with Kraft Foods and Costco (US retailers), has committed \$25 million for the development of a shelling industry. The fund is to be administered by GTZ. There has been little activity so far, though trade channels indicate that the first development may be focused on post harvest handling and drying. This initiative has the potential to be a catalyst for the take off of the West African cashew processing industry.
- Many small-scale shelling operations have been established across the region and a number of larger facilities are in place or will be in place as part of the development of the only real global player in cashews, Olam International of Singapore.
- Crops are smaller, later, and of lower quality than expected.
- The handling mechanism for in-shell nuts is not operating well, resulting in many being damaged by rain. Thousands of tonnes of Cote D'Ivoire material is being exported in-shell through Ghana, indicating that political instability continues to disrupt the trade in the region's largest producing country.
- Heavy input of aid and assistance from the US and EU will help develop shelling in the area over the coming years. This is likely to be centered in Cote D'Ivoire and Ghana due to the availability of raw material.
- West Africa will become a major competitor in the European market.

Guinea Bissau, Senegal, Guinea, Gambia

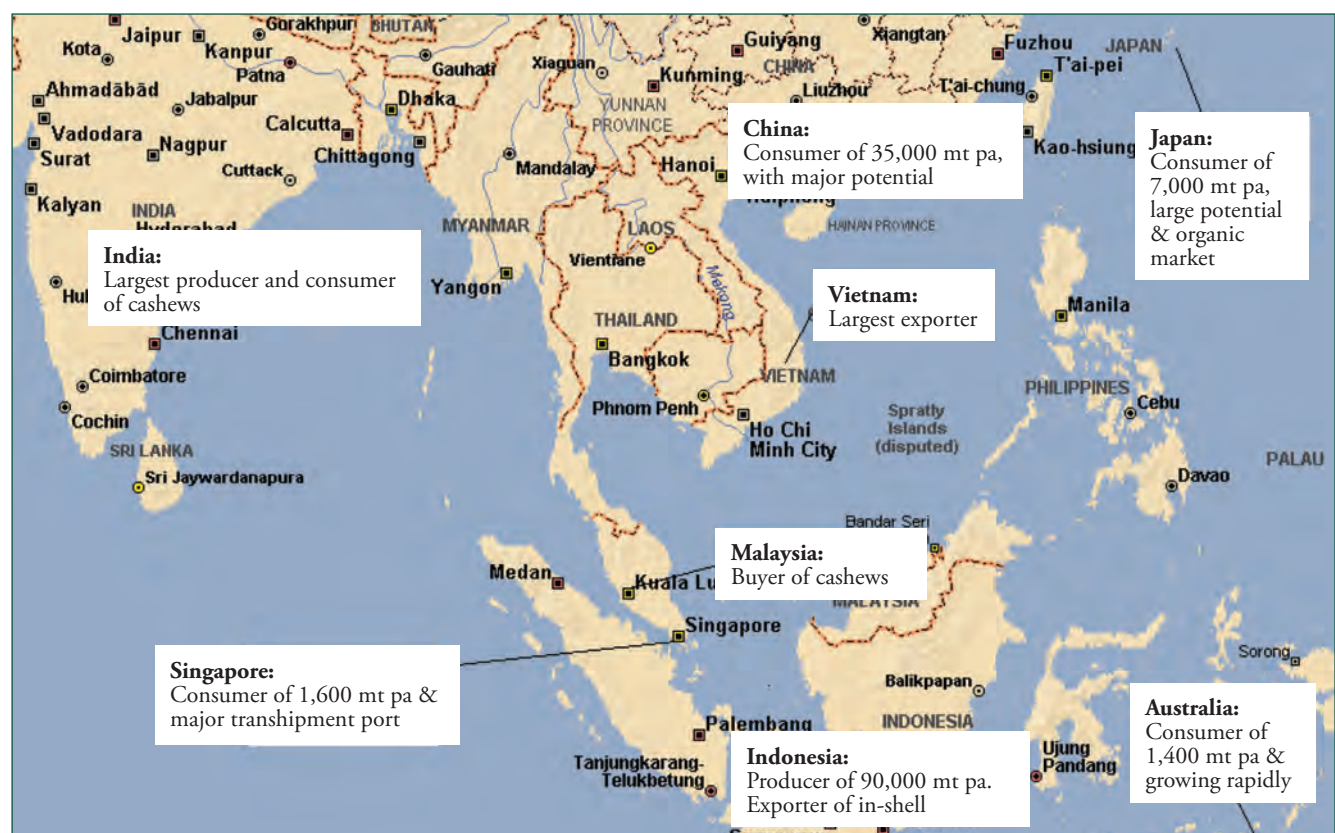
- No major breakthroughs in processing have occurred, despite the efforts of the Guinea Bissau government, in particular, to attract investors.
- A handful of small factories continue to shell across the region, but the vast bulk of raw in-shell cashews are exported to India and Vietnam.
- There is little prospect of any development in the industry for now, as it seems it will be concentrated where political risk is seen as lower.

1.6.4 Trends in Brazil

- A poor harvest in 2009, likely with high in-shell prices matched by high kernel prices. The 2009 crop was estimated at 250,000-270,000 mt in-shell, down from 320,000 mt.
- Strength of the Brazilian Real against the dollar makes life difficult for exporters.
- Subject to agreement from State politicians, Brazil may be in the market for in-shell as processing capacity exceeds the crop size.

1.7 Cambodia in the world market

Figure 1.8 Asian markets for cashews



Source: Microsoft Encarta, with data on Asian cashew markets added from Ingredient Sourcing Solutions

Little is known about Cambodian cashew production outside of Cambodia and Vietnam. No one interviewed for this study had any knowledge of the Cambodian cashew sector. Therefore, some of the conclusions below are made by drawing from the ADI report of August 2008 (see bibliography in Annex 12).

1.7.1 Geography & markets

- Cambodia is located in the centre of the Asian cashew region.
- Bordering Vietnam and located comparatively close to India, geography should facilitate in-shell sales to either country until such a time as processing is established. There will always be a market for in-shell cashews, and if current trends continue, there may even be a market for kernels in India.
- Proximity to Vietnam makes it difficult to compete for raw material for a shelling plant if Vietnam has a poor crop. However, the price for kernels moves with the in-shell price, and the price for organic kernels will move as well. The basis for being competitive is the price of the raw material, but the basis of one's business is the shelling. As long as the international price for kernels keeps pace with the price of in-shell within Cambodia, shelling will remain profitable.
- Proximity to Vietnam should allow access to growing and processing technology, as well as know how.
- For sale of kernels, as well as for technology, research, and packaging, Cambodia is close to the growing markets of China, Australia, and Japan, and the small, but developed market of Singapore.
- In the longer term, the markets of Malaysia, Indonesia and the Philippines could be potential outlets. Each of these smaller markets has cashew crops of their own and familiarity with the product, but cashew cultivation is either small or declining.

1.7.2 Production

- Cambodia produces about 60,000 mt of in-shell cashew nuts. This makes it the tenth largest producer in the world, with just under 3% of world production. It is difficult to ascertain the exact production with estimates running from 30,000 mt to 100,000 mt.
- Cambodia's production level is similar to Benin's, which supports two shelling plants, and production is larger than countries such as the Philippines and Sri Lanka, which have shelling industries.
- Production is very similar to small cashew-producing countries elsewhere, with small farms mixed with larger farms and small plantations. The nuts are grown on mixed farms, with other crops grown between the trees until the canopy closes. Production is under pressure from competing crops such as cassava. This phenomenon is also found in India and Vietnam.

- Yield estimates per hectare average 700 kg but rise as high as 2,000 kg per hectare with proper attention, pruning and favorable weather, reflecting similar results in Indonesia and parts of East Africa. Improvement in yield can usually be achieved through some fairly straightforward changes and grower education.
- Kernel outturn, ranging from 24% to 28%, is similar to Vietnam. In terms of outturn, this places Cambodian cashews in the mid-quality range.
- Nut Size – the ADI report mentions 160 nuts per kg ‘A’ 5%, 180 ‘B’ 70% and 200 ‘C’ 15%. This seems to put Cambodian nuts at an advantage in terms of size. In general, Cambodian nuts appear to be larger than Vietnamese nuts, with large nuts accounting for approximately 15% of outturn.
- Cambodia has the advantage of having organic production which will earn a premium if shelled and sold as kernels.

1.7.3 Marketing chain

- Farmers selling to local collectors, who sell on to middlemen, who sell to export traders, is typical from Indonesia to West Africa. In fact, this is the experience in every country that lacks its own indigenous shelling operations. The long chain usually inhibits returns to growers.
- Cambodia has a distinct advantage over other exporting countries due to its proximity to the market for in-shell cashews. Indonesian or African cashews must be shipped by sea to India or Vietnam to be shelled.
- The prices mentioned in the ADI report are better than the prices paid to growers in Africa, but lower than prices paid to farmers in Indonesia, which may be a function of superior quality in Indonesia.

1.7.4 Guideline yield comparisons

The following are for rough comparison only, as this is only the experience of one factory, in one season. The figures for Vietnamese in-shell, shelled in India are old, as shelling of Vietnamese cashews in India no longer takes place (these figures were provided by an Indian sheller). The Vietnamese figures were provided by a Vietnamese sheller. The Cambodian figures are from the ADI report.

Table 1.6 Yield comparisons for Cambodian cashews shelled in India and Vietnam

Grade Percentage	ADI Report	Vietnam nuts shelled in Vietnam	Vietnam nutssshelled in India
WW180	2.1%	0%	0%
WW210	4.2%	0%	2.00%
WW240	8.3%	5%	8%
WW320	25%	30%	38%
WW450	16.7%	7%	5%
SW/ DW	12.5%	30%	8.5%
FS	0	0	5.7%
FB	0	5%	2.5%
SB	0	3%	1.00%
SS	0	3%	2.6%
LWP	2.1%	3%	5.72%
SWP	2.1%	1%	0.10%
SSW/DW2	2.1%	5%	2.8%
SP	0	0	3.5%
BB	4.2%	0	
Lower	20.7%	8%	11.58%

Sources: *Ingredient Sourcing Solutions, ADI, Trade*

These figures may confirm that Cambodian nuts are of good quality but the WW450 outturn figure may indicate that the shelling operation was not efficient before it closed.

1.7.5 Summary

- Cambodia is well located within the world cashew economy, both for marketing in-shell nuts and cashew kernels.
- The nuts grown are similar to those found elsewhere but may have some quality advantages over Vietnamese nuts.
- Based on the ADI report, Cambodia has a value chain all too common in cashew growing regions. It has no indigenous shelling industry and no substantial domestic market. A long chain of middlemen bring the product to market, reducing grower returns. Cashew consumption continues to grow both in the new and traditional markets. North America and Europe experienced steady growth over the past decade, but the areas of fast growth are now the Middle East and India.



Chapter 2. Cashew Consumption

The dramatic increase seen in recent years in the consumption of almonds is based on heavy promotion and consumer awareness of the health benefits. This has resulted from industry-supported research and shows the potential for the cashew. Cashew market share in the snack sector has remained relatively stable in the West.³

Cashews are said to possess many health enhancing properties, but there is little research as yet on this which can be used in consumer promotion programs. The contrast with almonds could not be more dramatic as almonds are produced in wealthy countries (primarily the US) where brilliantly managed grower-driven promotions have propelled both consumption and prices to previously unimaginable levels. Cashews, however, come from a range of countries, some of which are among the poorest in the world. However, the potential for growth in the consumption of tree nuts is dramatic.

2.1 Trends in cashew demand

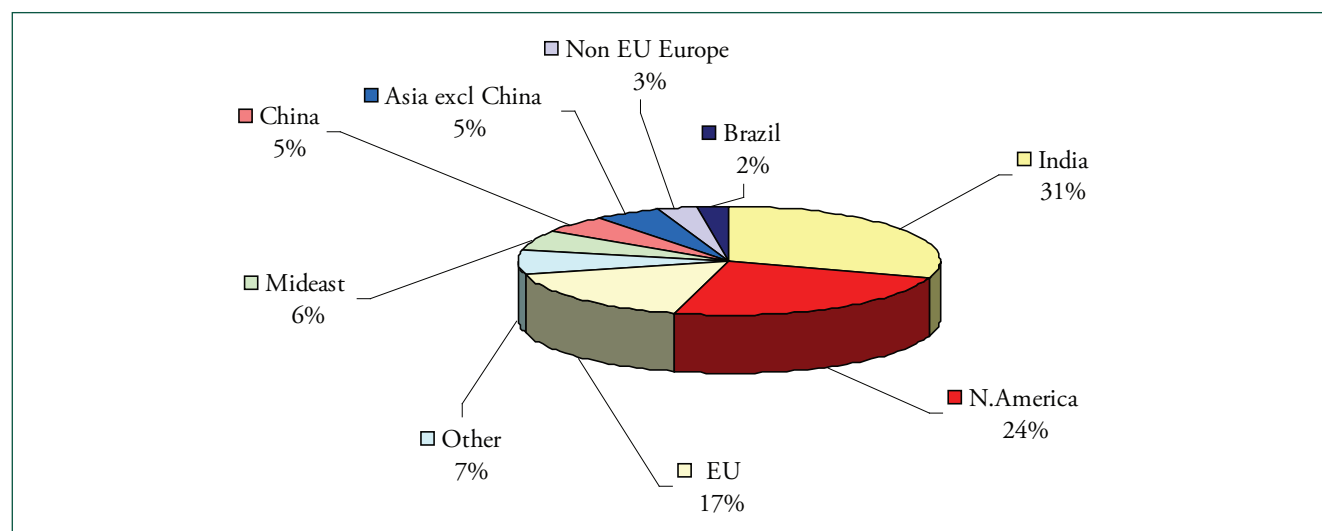
2.1.1 The overall trend for cashew demand looks positive

- World demand for cashew kernels is increasing at a rate of approximately 7% per year.
- Domestic demand in producing countries such as India and Brazil is growing rapidly. India is now the largest consumer.
- Demand is increasing at all destinations, including countries such as the US, which already have a high demand level per capita.
- Western European demand trebled in the 1990s, and continues to grow.
- Middle Eastern demand is growing rapidly.
- Chinese demand, although small per capita, is rising. Vietnam has a 90% market share. Official estimates for Chinese consumption are in the range of 400,000 cartons, but there is significant informal trade which means demand could be in excess of one million cartons.

³ At a 2008 African Cashew Alliance meeting, Francisco Pileggi, formerly of Kraft Foods, stated that demographic and consumer snacking trends in North America point to increased demand in the coming years. He said that consumer awareness of cashew nuts is rising and that generic industry promotion could benefit the product. He said that Kraft Foods, via their Planters brand, has been the major supplier of cashews to the US snack food market and is involved in heavy promotional activities in the US.

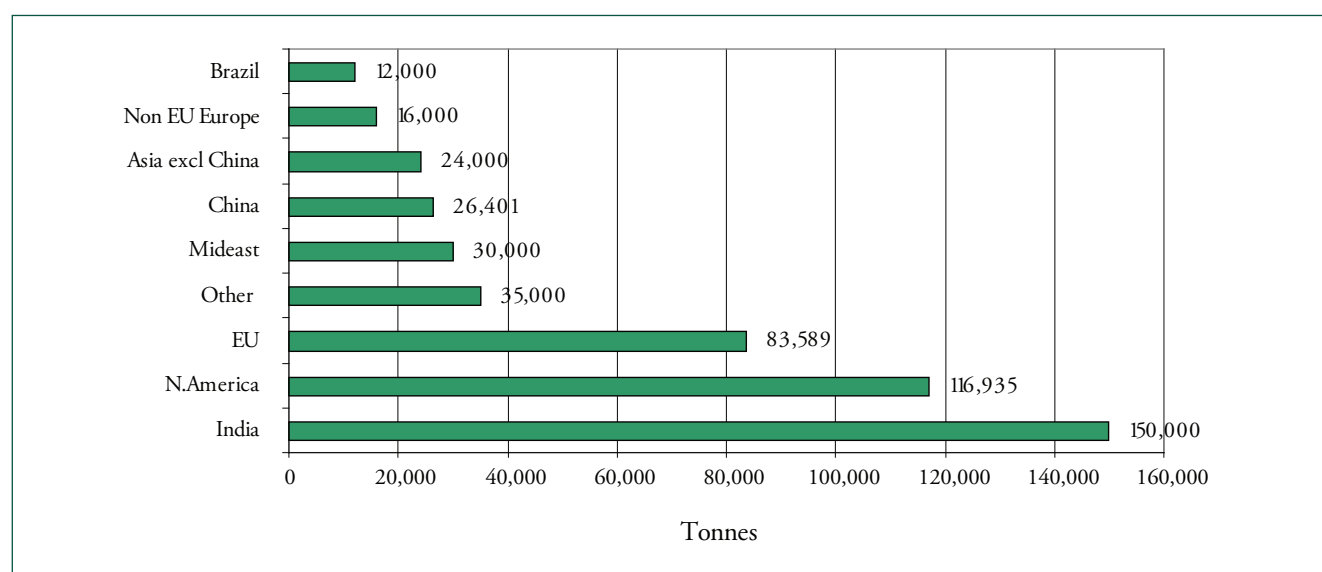
- Eastern European demand is growing, particularly in Russia, where cashews have been consumed for many years as result of inter-governmental trade between the old Soviet Union and India.

Figure 2.1 Cashew kernel demand by market



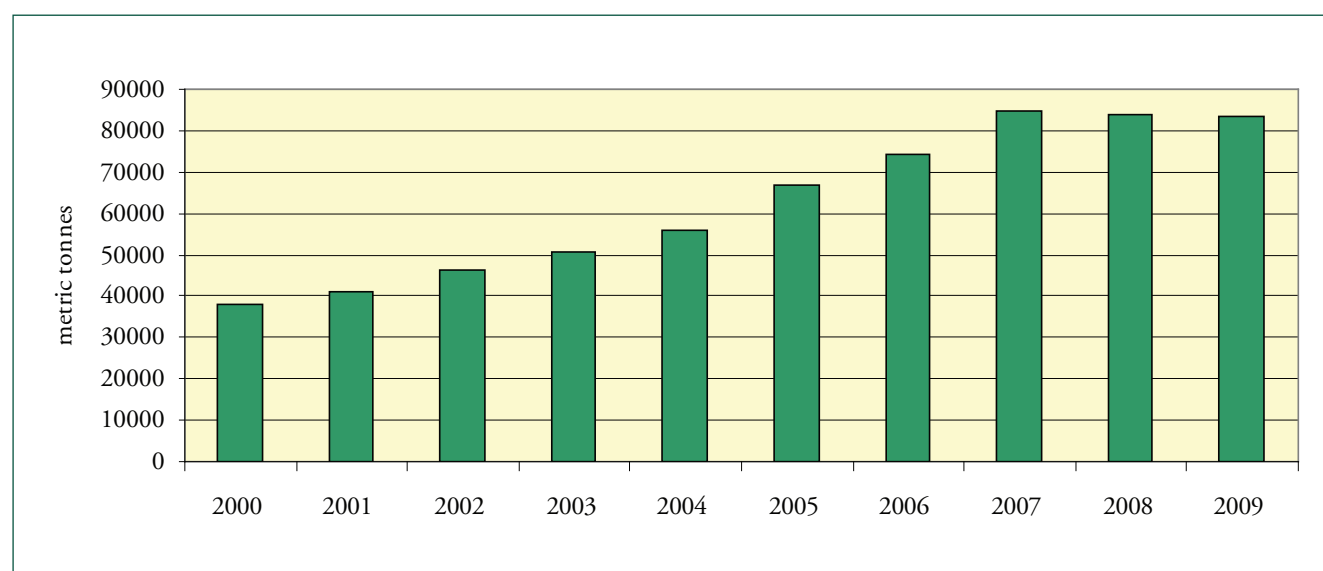
Sources: Ingredient Sourcing Solutions, Trade

Figure 2.2 Cashew kernel consumers, 2009



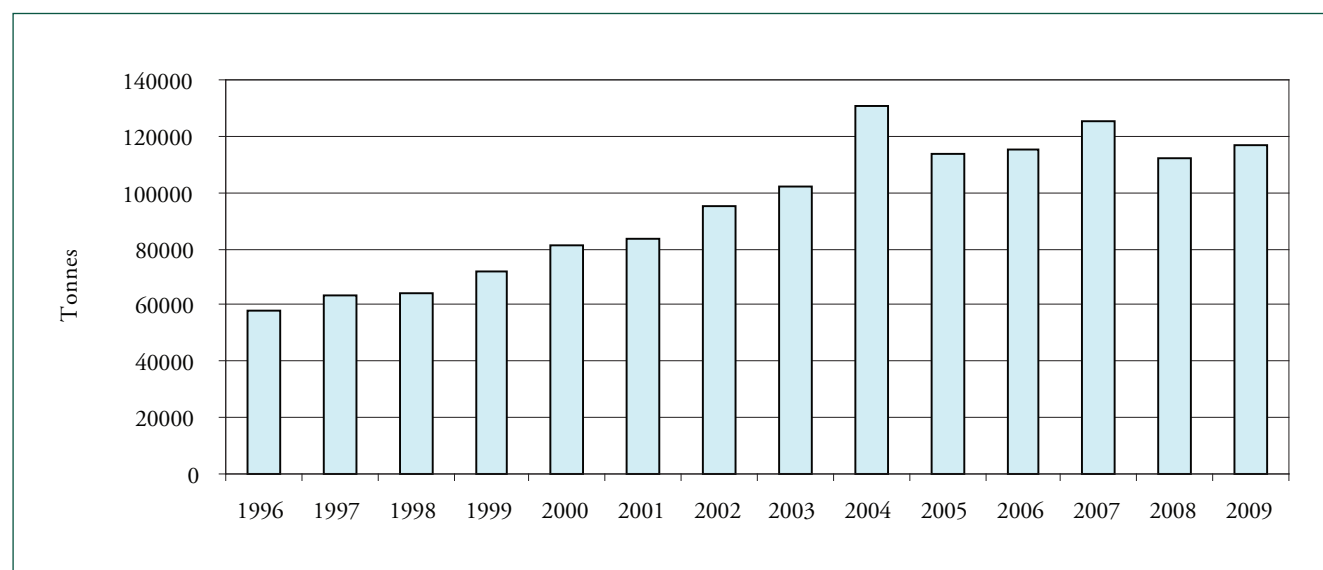
Sources: UNComtrade Ingredient Sourcing Solutions, Trade

Figure 2.3 EU cashew kernel imports – demand has doubled since 2000



Source: Eurostat

Figure 2.4 US cashew kernel imports – demand has more than doubled since 1996



Source: US Customs

Note: 2004 was the 'Atkins Diet' year in the US

2.1.2 Cashew demand appears resilient

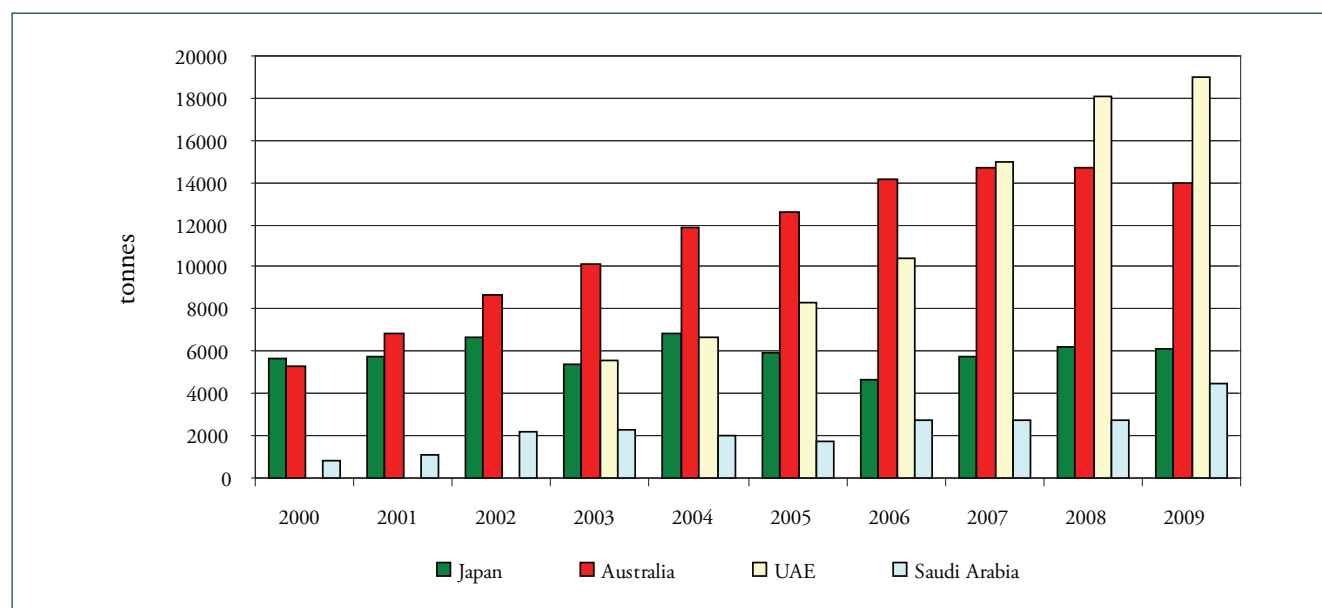
- If current trends continue, an industry expert believes snacking and informal meals will account for 70% of all 'eating occasions'.⁴
- Both supply and demand are geographically diverse, affording some protection from crop disasters, food safety scares, and natural disasters.
- Demand and supply are economically diverse (i.e. consumed in a variety of countries), affording some protection when recessions hit particular regions of the world.
- Demand growth is part of a general increase in demand for food, particularly food perceived as 'healthy'. There is every prospect that health claims for cashews will be verified in the years to come. One only has to look at the growth in almond demand to see what may lie ahead.
- Demand is demographically secure in that consumption is growing among affluent younger people in the developing countries of Asia, and also among younger people in the West who grow up consuming snack foods.
- Cashews fit well into niche market models. They are suited to organic cultivation and processing. They are ideal for gourmet marketing and of course have become a 'cause célèbre' with fair traders.

2.1.3 Threats to cashew demand

- Price volatility. The price surge of 1999 damaged market confidence, and in particular forward planning by buyers in some western countries. The Nut Company (the Netherlands) estimates that 46% of snack foods in Europe are marketed through supermarkets. Supermarkets and their suppliers find it difficult to deal with volatile prices, especially where private label packing is involved. Fortunately, it appears that the incredible price spike of 2008 did not last long enough to severely damage demand.
- As an adjunct to price volatility, supplier reliability is a major concern. The willingness of some processors in Vietnam and India to think long term is often simply a function of the amount of money on the table.
- The unwillingness or inability of shellers and processors to upgrade their facilities to standards which comply with importing countries.
- Unreasonable standards of traceability or analysis from importing countries. Cashews could be damaged by the imposition of 'farm gate' traceability as so much of the world's production is shipped abroad for shelling.
- Australia and the Middle East continue to grow quickly. Japanese imports are growing but are more erratic.

⁴ In an article for the INC Cracker Magazine cited in Data Monitor (January 2006), Mathew Thompson of the American Peanut Council stated that convenience, health, self orientation, and sensory factors all promise further growth in cashew demand. The implications for a snack ingredient like cashew nuts are clear and recent trends in imports show growth.

Figure 2.5 Cashew imports – new markets



Source : UN Statistics Division

2.2 Trends in cashew uses around the world

Snack Food: Roasted and salted, honey roasted or coated in spices, the vast bulk of cashews are consumed as snacks. Cashews are generally sold retail in packs from 250 g to 1 kg, either as straight cashews or as part of mixed nuts. Popular with drinks or as a TV snack, cashew nuts are also regarded as ‘up market’ and prestigious by consumers. The cashew is used too as an ingredient in trail mixes and student mixes.

Confectionary: More popular in the East than in the West for confectionary applications, cashews are used in India, South East Asia and Brazil as the main ingredient in sweets and sometimes in chocolates. This demand is regional and unlikely to grow outside of those particular regions.

Bakery: Cashews have not made inroads into this sector. There is an enormous market for bakery nuts (probably in the range of 200,000 mt). This is mainly supplied by almonds, hazelnuts, walnuts and pecans. Many of these products are blanched, sliced or diced at additional cost, whereas cashew pieces are regarded as a discounted product that has to be ‘sold off’. In times of high prices for almonds and hazel nuts in particular, manufacturers tried cashews and copied ideas such as cashew chocolate from Britannia of India. Unfortunately, the cashew flavor is such that it does not go well with bakery products and it is not produced in a ‘batch ready’ condition, suitable for sale to bakers and food processors.

Given that the prime market is whole nuts and large pieces for use as roasted snack foods, it is important to secure markets for the smaller pieces in those markets which have uses for confectionary or for specialized applications such as cashew butter.

2.2.1 Uses for cashew 'pieces' & 'broken'

Fancy Splits: Used mainly in snack foods for mixing with pieces to make a cheaper roasted nut. Also used in some types of ethnic cooking, especially Chinese and Indian food. They are heavily bought by the US market, but are not as popular in Europe. They are also available scorched at a discount.

Fancy Butts: Used mainly as a cheap roasting cashew, often with W450 as a 'Wholes and Broken' Mix or as a substitute for W450 in vending packs in the US. They are also available scorched at a discount.

Large White Pieces or P1: LWP are used as a cheap roasting nut or in a mix with dried fruit or other nuts ('Trail Mix' or 'Student Mix'). This grade is the standard grade for use in cooking and breakfast cereals, where a white colored nut is needed. It is also used as an element in the manufacture of cashew butter.

Scorched Pieces or P2: Same sizing as LWP but with discolored nuts. Quality is widely variable. Used in the US for manufacturing of cashew brittle. Also used as an ingredient in pesto sauce as a substitute for expensive pine nuts. The grade is used as well in low priced roasted nuts, although this has virtually disappeared in recent years.

Small White Pieces or SP1: Scorched Small Pieces or SP2, SSP1 & SSP2 & SPS: Industrial users use these grades interchangeably, often as a substitute for almonds or in environments where nutty flavor is required but at a low price.

Sometimes used in pesto sauce in Italy and for coating ice cream or confectionary. These grades are increasingly used in these applications as this competes with products like almonds or hazelnuts, which are expensive to have diced or otherwise prepared for use. There is a wide range of prices even for the same grade and before buying, it is important for buyers to know the product and the quality variation between different packers.

Baby Bits; G1; G2: These grades were very difficult to sell until recently. Today there is a shortage as the confectionary industries in both India and Brazil started a major campaign to use these products, which do not have to be imported. In the West, these grades are used in the manufacture of cashew butter, as ingredients in biscuits and as coatings for ice cream and cakes.

Meal or Flour: This is a difficult product, which has to be handled very carefully. It can vary widely in price. Used in all sorts of applications where a sweet nutty taste is required. Processors sell it to bakers and confectioners in Europe and the US.

New products and innovation: Adding value to kernels prior to import is of little interest to buyers in the near term. The distributors and retailers appreciate the quality control that is provided by the roasters, and the roasting in hot oil adds a measure of security against microbiological risks. There is continual innovation in the highly competitive food markets of Europe. For cashews, a number of innovative flavors 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, mixed with other raw nuts, as a healthy snacking alternative. This product, which is sold in the fresh produce sections of supermarkets, fits well with the increasing emphasis on healthy eating, but demands the highest level of hygiene from the sheller onwards.

Table 2.1 Cashew markets – a quick guide to preferred grades and uses

Destination	Preferred grades/Uses	Structure	Origins/Trend/ Seasonality
North America Imports: 120,000 mt. Share: 24%	All grades. Market for broken is developed to stratify roasted nut pricing. Use for snacks dominates, although products such as cashew butter, brittle and cashew cookies are also produced.	Importers, brokers and some packers are buying directly from origin. Price is everything. Promotions play an important part in the market. Quality is always important but certification and traceability are less so.	All origins imported. Demand is growing, with consumption per capita at twice the European average, but still growing. Peak packing season starts in August and ends in January.
Western Europe Imports: 83,000 mt. Share: 17%	Mainly WW320, some WW450 and WW240. Broken are not popular, perhaps with the exception LWP for mixes. Confectionary, bakery usage has not taken off.	Importers mainly buy and sell on. One or two packers are buying from origin. Sales of branded and private label through supermarkets. Traceability, HACCP and quality control are very important.	Indian and Vietnamese nuts are preferred. Brazil's nuts are not liked. African is purchased if at a discount. Growing at a fast rate. Peak season starts end of July, and finishes end of Nov, early Dec.
Japan Imports: 6,000 mt. Share: 2%	Whole grades for roasting, snack use.	Traditional importers and nut specialists.	India dominates for taste and quality. Steady demand throughout the year.
Middle East Imports: 25,000 mt. Share: 6%	Whole grades. Especially like larger nuts which can be sold in combination with pieces.	Importers buy.	India preferred. Some Brazilian for large nuts. Low per capita consumption but the trend is up. Season leading up to Ramadan is the most important.
Australia Imports: 14,000 mt. Share: 3%	Mainly whole grades, some broken.	Importers who sell on. Some importers have joint ventures in Vietnam.	85% Vietnamese, as they have been able to provide certification and quality systems. Peak season in the last quarter of the year.
China Imports: 35,000 mt. Share: 5% Figures are estimated, as there is much informal trade.	All grades.	Importers and distributors often advance payment to Vietnamese suppliers. Informal merchants, border trade.	95% Vietnamese, due to access and tariff preference. Trend is up but research suggests other nuts are more popular. This may be related to price.
India Uses: 150,000 mt. Share: 30%. India imports 600,000 mt in-shell each year, mainly for processing and re export.	All grades.	Domestic trade is especially important to main cities. These are supplied by road from packers in Mangalore and Kerala.	Imports attract 30% import duty and the country is a major exporter. Growth is phenomenal and shows no signs of abating. The peak season is Diwali in November, but other festivals impact demand too.

Source: Ingredient Sourcing Solutions, Trade

2.3 Outlook for cashew demand

Cashew sourcing will become more and more difficult in the next five years. If current growth in demand continues, then a serious shortage and higher prices will arise.

Attempting to project demand and supply forward is fraught with difficulties. However, in the case of cashew nuts, given the relatively stable growth in demand, and the three to five years required for new plantations to come on line, five-year projections indicate that cashews will likely experience a supply shortage in coming years. Many importers and producers agree with this projection. The sharp rise in prices has been a warning that supply disruptions will have a major impact on prices in the future, as the trend for demand to exceed supply, grows.

Table 2.2 shows the cashew supply/demand matrix as it was for the 2007/08 season and Table 2.3, a projection five years forward.

Table 2.2 Cashew supply/demand matrix, 2007/08

2007/08	In-shell (tonnes)		Kernels (cartons)		
Producers	Production	Export/Import	Production	Domestic & Carryover	Export
India	460,000	575,000	10,350,000	4,000,000	6,350,000
Vietnam	300,000	100,000	4,000,000	50,000	3,950,000
Brazil	200,000	0	1,800,000	400,000	1,200,000
West Africa	450,000	-450,000	0	0	350,000
Indonesia	75,000	-61,000	140,000	15,000	125,000
East Africa	150,000	-140,000	100,000	0	100,000
Total	1,645,000	0	16,207,000	4,465,000	12,075,000
Importers			cartons		
N. America			5,500,000		
Europe			3,100,000		
China			750,000		
Japan			290,000		
Australasia			500,000		
Mideast			500,000		
Other			700,000		
Total			11,340,000		
Carryout = 21 days supply			735,000		

6.06%

Sources: Ingredient Sourcing Solutions, Trade

Table 2.3 Cashew supply/demand matrix, 2013 projection

2013 est.	In-shell (tonnes)		Kernels (cartons)		
	Production	Export/Import	Production	Domestic & Carryover	Export
India	600,000	695,000	12,560,000	8,000,000	4,560,000
Vietnam	400,000	200,000	6,000,000	100,000	5,900,000
Brazil	300,000	0	2,700,000	500,000	2,200,000
West Africa	750,000	-720,000	300,000	0	300,000
Indonesia	90,000	-80,000	100,000	50,000	50,000
East Africa	165,000	-95,000	700,000	0	700,000
Total	2,155,000		22,360,000	8,650,000	13,710,000
Importers			cartons		
N. America			6,400,000		
Europe			3,800,000		
China			1,500,000		
Japan			325,000		
Australasia			600,000		
Mideast			1,000,000		
Other			1,250,000		
Total			14,875,000		
Surplus/(Deficit)			(1,165,000)		
Deficit %			8.5%		

Sources: *Ingredient Sourcing Solutions, Trade*

It appears that even if all producing countries have normal crops, there is a deficit of supply projected within the next five years. If a deficit in supply is to be avoided, planting should take place within the next two years.

Assumptions used to make the projections in Table 2.3 are as follows:

- US demand will continue to grow, although at a reduced rate of 3% per annum.
- European demand will continue to grow, although at reduced rates over the next five years. Europe's consumption will not rise to US levels.
- China will not become the huge consumer predicted in some quarters.
- Indian consumption will continue to grow at about the same rate as US consumption in the 1990s.
- Production targets in India will not be achieved.
- Production in Vietnam will not grow quickly due to competition from other crops.
- Production in Africa will grow consistently.
- Production may respond to better prices as time goes on, but with first production three years after planting, this will not have an impact in the next five years.

2.4 Cashew prices and trends

Cashew kernels are priced at \$ per lb in the international market. The benchmark grade is WW320 as it is the highest yield in processing, and the most suitable for use in snack foods. Cashew traders and buyers often look at the differential between the grades, as these can impact purchasing decisions.

2.4.1 Price movements: recent years

In 2007 and 2008, prices moved to all time highs due to a perceived shortage following a poor Brazilian crop, and reductions in the crop in Vietnam. The market over-reacted to these developments and fell back sharply to levels which were just over the historical averages. Further declines in price seemed likely as buyers were hesitant due to overall economic conditions and the availability of on-time shipments.⁵

Until the end of 2007, recent years were less volatile due to a more even spread of supply, which was less susceptible to the impact of a crop failure in one region. However, the renewed tight balance of supply and demand could lead to volatility in the near future.

One immediate impact of price movement is default of contract, or delays in shipment by some less reliable exporters. This accentuates price movement as buyers have to buy again and also makes it difficult for roasters to plan and promote cashews for the future. In the period after a sharp rise and fall, buyers tend to refuse certain suppliers and withdraw from purchasing on a forward basis – ensuring that the price swing on the downside is further exaggerated.

In addition to the supply/demand position, prices have been driven by rising costs at origin. Indian and Vietnamese packers, in particular, have seen price rises in packaging material, energy and labor costs. The Indian industry, in particular, has been impacted by higher labor costs and labor shortages, because new industries in southern India offer the cashew industry's traditionally female workforce better paid work for themselves or other family members.

It seems likely that in time of supply disruption, high prices will occur.

⁵ Volatility impacts demand, and demand growth. As pointed out by Guido Wolf of The Nut Company, Europe's largest roaster at the International Nut Congress 2006 – "It is not the price level per se but the oscillation which interrupts the marketing cycle." Volatile prices today cause problems in the future. Look at the price range in Table 2.4. The difference between the lowest price of the past ten years and the highest price is \$63,000 on the value of a 20-foot container of WW320 (1,588 mt).

2.4.2 Cashew kernel prices

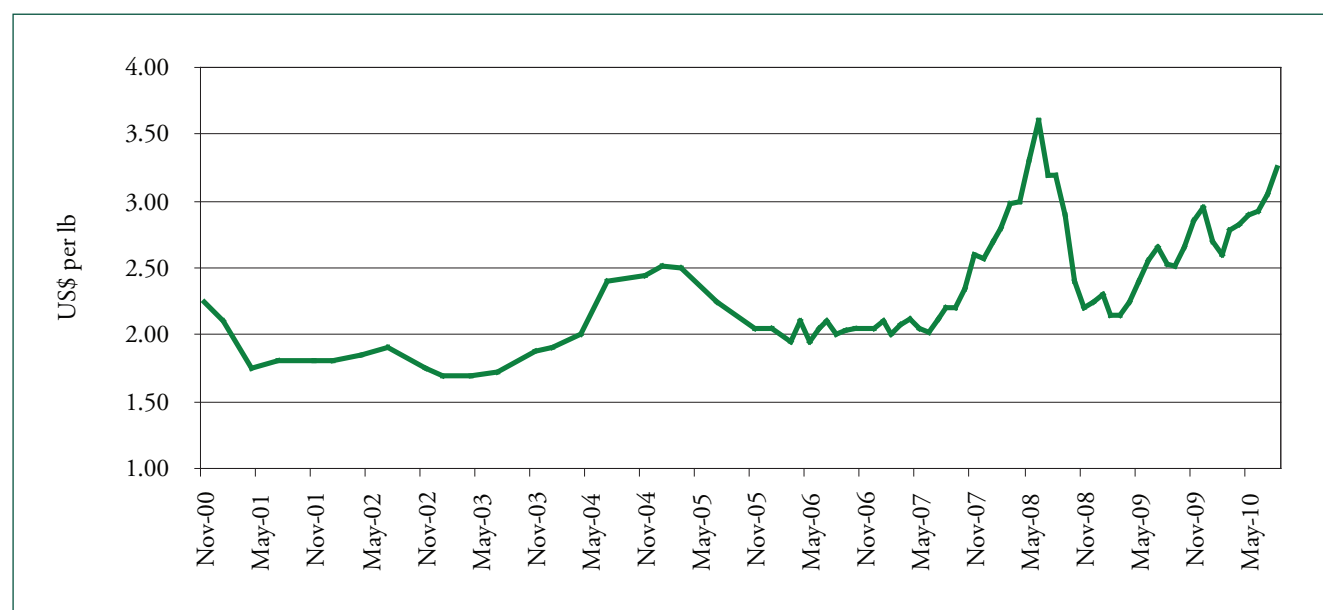
Table 2.4 Cashew kernel prices, FOB origin India/Vietnam/Brazil whichever is lower \$ per lb

Grade	W180	W210	W240	W320	W450	SW	FS	FB
Dec-09	\$3.80	\$3.60	\$3.05	\$2.95	\$2.60	\$2.60	\$2.30	\$2.30
10yr High	\$4.80	\$4.50	\$3.78	\$3.60	\$3.35	\$3.30	\$2.70	\$2.70
10yr Low	\$2.68	\$2.45	\$2.05	\$1.70	\$1.40	\$1.28	\$1.37	\$1.35
10yr Average	\$3.41	\$3.11	\$2.66	\$2.30	\$2.10	\$2.05	\$1.82	\$1.79
+/- High	-33%	-34%	-25%	-26%	-28%	-30%	-22%	-22%
+/- Low	19%	20%	39%	56%	71%	80%	53%	56%
5 yr Av	\$3.58	\$3.29	\$2.78	\$2.41	\$2.21	\$2.16	\$1.85	\$1.83
High 5yr	\$4.80	\$4.50	\$3.78	\$3.60	\$3.35	\$3.30	\$2.70	\$2.70
Low 5yr	\$2.80	\$2.55	\$2.45	\$1.95	\$1.70	\$1.65	\$1.40	\$1.50

Source: Ingredient Sourcing Solutions, Trade

Note: See Appendix 1 for detailed price table by grade

Figure 2.6 Benchmark WW320 price \$/lb, FOB lowest origin



Source: Ingredient Sourcing Solutions, Trade

Table 2.5 Market chronology of main events and turning points – Nov 1998 prices start to rise following a poor crop in Brazil

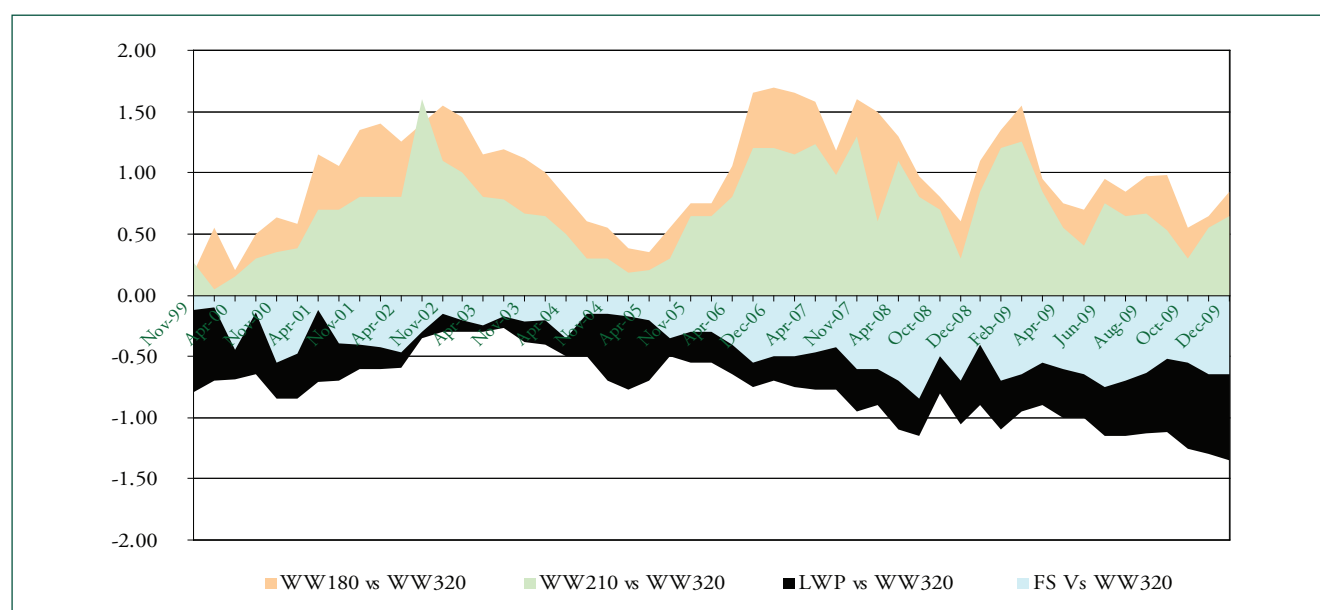
Nov 1998	Prices start to rise following a poor crop in Brazil
April 1999	Prices surge as India has a poor crop; buyers panic
Sept 1999	Prices peak as a good crop in Brazil is expected
March 2000	Vietnam production up; price collapse begins
April 2001	Prices hit bottom; Vietnamese production is huge.
April 01-July 03	Market flat as prices low
Aug 2003	Heavy demand comes to the market
April 2004	Very heavy demand from the US due to 'The Atkins Diet' fad. Buy nuts!
April 2005	Buyers overbuy; good crops; prices drop
Sept 2007	Prices low; demand good; problem with Brazilian crop
Oct 2007	A major problem with Brazil's crop
Feb 2008	A problem with Vietnam's crop; buyers panic; sellers default
Sept 08-March 09	Demand static; cash flow critical in Vietnam; sell, sell, sell
Apr 2009	Concerns emerging about crops in Vietnam and Cote d'Ivoire
Feb-May 2010	Poor crops in Vietnam and India push prices up
August 2010	Prices hit the highs of 2008 again.

Sources: *Ingredient Sourcing Solutions, Trade*

Pieces & Wholes: - Pieces are becoming more heavily discounted since the entry of Vietnam as a major supplier. This could be because:

1. Vietnam, unlike India, does not have a domestic market into which to sell cheaper grades. They have to export into a seasonal market in China or the US.
2. The growth of demand for pieces has been slower than for cashews overall. Cashews are still not a confectionary or bakery ingredient, outside of the originating countries.
3. Low prices in the early part of this decade caused US roasters to promote whole grades instead of cheaper 'halves & broken', which were previously a mainstay.

Figure 2.7 Cashew kernels: Large nuts and broken vs. WW320 premium/discount: 1999-2009



Sources: Ingredient Sourcing Solutions, Trade

Note: Index WW320 = 100

Comments concerning figure 2.7

- Larger kernels keep their value with an upward trend on the premium for WW210.
- At times of high prices, the differences between grades narrows.
- Splits are tending to a larger discount as production overall rises but consumption of the grade does not keep up.
- Large pieces are worth relatively less since Vietnamese product arrived in the marketplace in large volumes. Indian pieces are taken up by their domestic market.

Table 2.6 Big kernels are becoming relatively more valuable vs. WW320

India	Brazil	% Change	3-yr Average	5-yr Average	10-yr Average
WW180	SLW1	+11%	\$1.09	\$1.00	\$0.98
WW210	LW1	+16%	\$0.81	\$0.74	\$0.70
WW240	W1240	+3%	\$0.32	\$0.30	\$0.31

Sources: Consultant, Ingredient Sourcing Solutions, Trade

Table 2.7 Broken cashews have lost value relative to WW320

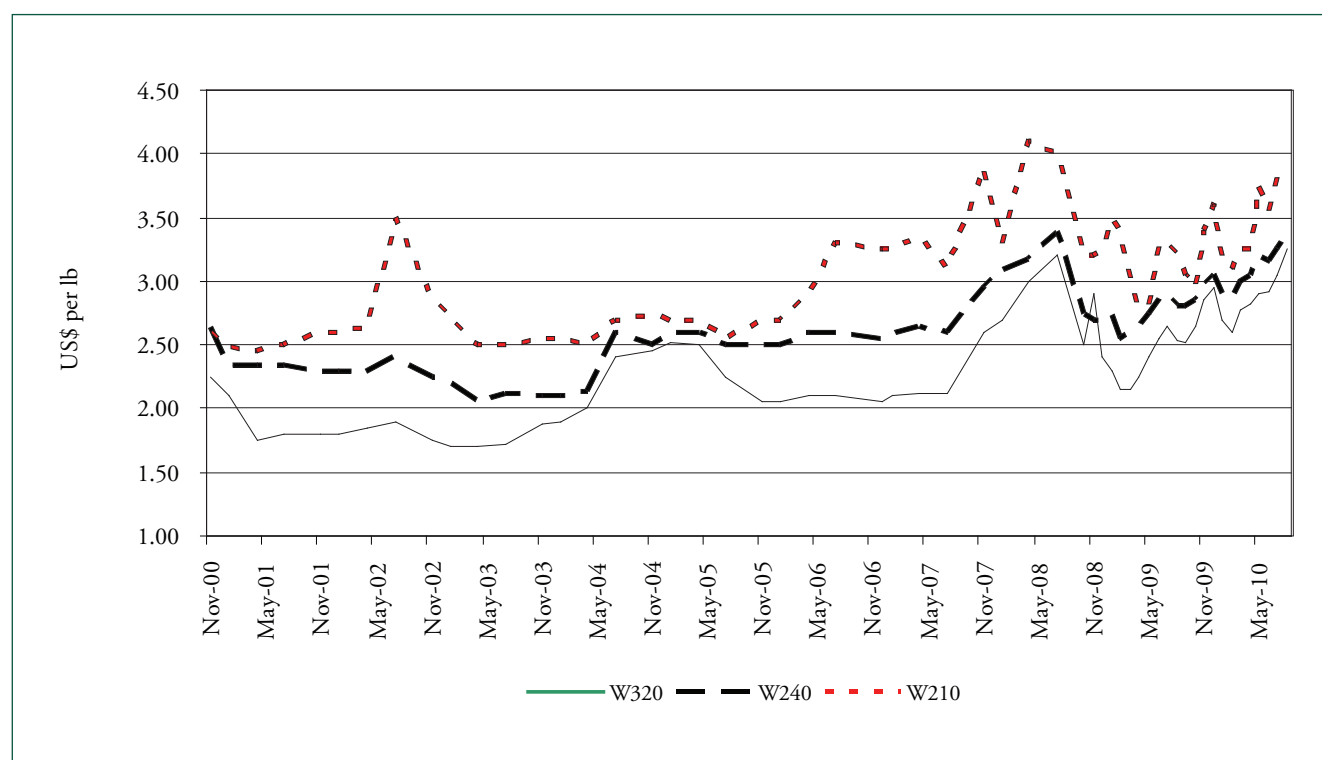
India	Brazil	% Change	3-yr Average	5-yr Average	10-yr Average
FS	S1	-26%	-\$0.60	-\$0.52	-\$0.43
LWP	P1	-31%	-\$1.01	-\$0.92	-\$0.77

Sources: Ingredient Sourcing Solutions, Trade

Note: Index WW320 = 100

These prices refer to export kernels only, as the broken grades' market within India is far higher than the international market for LWP and FS, due to domestic consumption patterns.

Figure 2.8 Whole grade cashew comparative price history, Nov 2000-Aug 2010



Sources: Ingredient Sourcing Solutions, Trade

2.4.2 Summary

- Cashew prices can be volatile and seem to run in a cycle of about ten years during which an extreme upward movement is likely to be followed by a decline, and then a rebuilding of value.
- Prices can be driven by demand spurts and by crop problems which occur in more than one country at a time.
- Pieces are becoming relatively less valuable and large nuts are becoming more valuable.
- The high prices are getting higher as the balance between supply and demand becomes tighter.
- In-shell prices and kernels prices track each other.

2.5 Outlook for prices

The market in September 2010 stands close to the highs of recent years, following smaller crops in India and Vietnam. Market demand is very strong in India and the Middle East. The European and North American markets have changed their buying patterns but demand has an underlying strength, as will be seen in the coming busy season in western markets.

Initially Indonesia expected a good crop but bad weather has cast doubt over initial estimates. Based on demand from India, prices are very high and expectations will also be high, coming into the busy season in Indonesia. In Brazil too, poor growing conditions have likely impacted the crop and 2010's yield could be well below expectations. In the West, where demand suffered in 2009, demand is expected to improve again in 2011. Growth in Indian demand shows no signs of abating. Demand in China is also likely to continue its steady growth.⁶

Prices therefore are most likely to trend strongly up as time goes on. In the short term, some falls in price may occur as crops come in first in Brazil and East Africa, and then, in the early part of 2011, in India and Vietnam. If buyers stay out of the market or continue a 'conservative' buying strategy, a decline in prices could be accentuated. At the end of 2009, for example, one Vietnamese packer was offering forward product sales at a discount compared to market prices at the time. One or two Indian packers also spoke about discounts for the 'right buyer on the right terms'. The same may occur again at the end of 2010.

The overall outlook is for prices to correct in 2011, perhaps to \$2.80-\$3.00 per lb FOB, for WW320, with some price stability returning to the market. It is unlikely that there will be a price collapse of any sort in 2011, as even large crops could be absorbed. If an unexpected disruption in supply occurs in a major origin due to weather, crop problems or political difficulties, a sharp rise in prices will follow.

Overall, cashew demand in 2009 was not as bad as expected in many quarters, and recovered in the last three months of the year. In the third quarter of 2010 the pattern continued with imports to the western countries steady, but imports to the new markets up.

Every tonne of cashews available from crops in 2010 will be required before the end of the year. There is little indication of any decline in demand, but there are many indications that the buying habits that were successful during the 2008-09 recession, may persist long into 2010/11. This means that there will be less forward buying and less holding of inventory. The impact of these factors could be light demand during the early part of 2011, causing an element of 'harvest pressure', especially in the current under-funded circumstances.

Looking at crops and harvests, it is now clear that in 2010 the Vietnamese crop was down to 300,000 mt, and the Indian crop declined by 7-10%. This does not represent a major shortfall in overall supply terms, but has become a factor as the supply/demand balance is so tight. Reports from East Africa indicate normal to good crops, although again some of the figures mentioned from Mozambique do not match previous experience. Tanzania's 2010 crop is reported to be 'normal to good'.

⁶ In a more general context, these are times of increasing food prices, increasing energy prices and climate change. The long-term trend in food prices will be upward if climate change has the kind of impact predicted by experts like William Cline of The Institute for International Economics and the Centre for Global Development in Washington in the US who suggests that climate change will reduce agricultural gross domestic product by 16% in the next 11 years.

Unsold inventories at origin are low. Unsold inventories at destination are almost negligible too and inventory in the hands of packers and roasters is limited, having been run down and not replaced in late 2009 and 2010. Buyers probably have low levels of forward purchase cover as they wait to see the outcome of the southern crops.

2.5.1 Prospects

- A slow start to the year, followed by recovery in demand from the West.
- Continued lack of forward purchasing, buoying the market for 'spot' and 'prompt' goods, even at times of relatively light activity.
- Good crops causing price slippage in the first quarter of 2011, as processors seek to make sales in a market which does not want to buy forward volumes. Prices may well move down, perhaps toward \$2.80 per lb FOB for WW320 kernels. This would suit packers and buyers alike as both will be covering material for the year ahead.
- Prices will start to move back up toward higher levels as 2011 progresses, and without testing, new high prices will stabilize.
- Continued difficulty for importers and traders due to funding restrictions.
- Continued development of global connections between origins, and perhaps the establishment of a global processors' organization for the first time.
- Continued development of the West African industry, and 2011 may see cashew processing established there.
- Rising freight rates, as demand on all products recovers.

2.5.2 Threats

- If the economic recovery in Western cashew-consuming countries does not continue, demand may not wake up mid-year,
- Very large crops in India and Vietnam may mean that the initial price drop persists and a season of lower prices follows, although still above the averages of the past decade.
- Unforeseeable food scares.

2.5.3 Estimated Supply/Demand Matrix 2010/11 Crop season

Assumptions

- Normal crops in the Northern Hemisphere.
- Current estimates of the 2011 Brazilian crop (Oct-Dec) are correct
- No late surprises in East Africa on crop size.
- 2008 demand levels return in the US.
- China's consumption grows at 5%.
- India's consumption grows at 10%.

Conclusion

Continued tight supply/demand balance can be sent heavily out of balance by a crop reduction in two major origins. There are continual crops between February and June in the Northern Hemisphere.

Table 2.8 Cashew supply/demand matrix, 2010/11 estimated

2010	In-shell (tonnes)		Kernels (cartons of 50 lbs)		
Producers	Production	Export)/Import	Production	Domestic& Carryover	Export
India	575,000	750,000	13,250,000	7,500,000	5,750,000
Vietnam	360,000	200,000	5,600,000	100,000	5,500,000
Brazil	300,000	0	2,700,000	350,000	2,350,000
West Africa	725,000	-700,000	220,000	150,000	70,000
Indonesia	90,000	-80,000	100,000	50,000	50,000
Cambodia	60,000	-60,000	0	0	0
East Africa	160,000	-110,000	500,000	0	500,000
Total	2,295,000	0	22,400,000	7,250,000	14,220,000

Cartons

Importers	Cartons
N. America	5,730,000
EU	3,750,000
China	1,540,000
Japan	275,000
Australasia	525,000
Mideast	1,100,000
Other	1,000,000
Total	13,920,000
Surplus/(Deficit)	300,000

2%

Sources: *Ingredient Sourcing Solutions, Trade*

2.6 International standard specifications for cashews

In-shell cashews have no international or national standard specification. Individual lots are graded by: outturn (cutting test) expressed as either pounds of kernels per 80 kg bag in-shell, or grams of kernels per kg of in-shell; size (number of nuts per kg); moisture; damaged nuts; rotten nuts; and oil stained nuts.

Cashew kernels currently have three internationally recognized grading systems

CEPC	Cashew Export Promotion Council of India
AFI	Association of Food Industries, US. (The most widely accepted)
UNECE	United Nations Economic Commission for Europe (an effort to reconcile the other two)

There is little difference between the AFI and CEPC standards, except that AFI takes into account the Brazilian grades which are classified under a different system. UNECE has major differences, but these are, in fact, in nomenclature, sieve size, and the addition of some factors which many buyers add to their specifications.

Analysis of the different specifications could be an extensive study in itself, but at this point, it appears that the AFI Standard is the best and most acceptable standard to adopt for exports. It is used by Vietnamese exporters with success. Key aspects of this standard are:

- Cashews are graded into wholes and broken.
- Whole cashews are graded by size, which is expressed by the number of nuts per kg. This is not a calibration so it is possible that there may be a wide range of sizes in a parcel. In practice, buyers expect a reasonable degree of uniformity in a parcel and, in effect, this usually occurs as a function of shelling outturn.
- The broken are graded by type of breakage, crosswise 'butts', lengthwise 'splits,' and pieces.
- Pieces are graded by size from large to very small.
- Wholes and pieces are graded by color. This ranges from white to second scorched wholes. The nuts become discolored during the process when heat is applied.
- Certain grades consist of damaged kernels. This damage may be dark spots, shriveling or inherent discoloration.

Annex 3 contains AFI Specification and a grade comparison between origins



Chapter 3. Cashew Demand in Times of Recession

Cashew nuts have fared well in recessions in the past. The nuts are primarily consumed in countries, or by people, where food expenditures are low as a proportion of income. This is clear in Europe and the US, but even in India, cashews are bought primarily by people with higher incomes. OECD-FAO has said in their Agricultural Outlook 2008-2017, that the “economies of demand indicate that consumers tend to care less about prices of goods that represent a small share of their budget.” They go on to say that these types of products require a “higher price signal to disrupt demand.”

These comments would seem to apply to cashew demand. Throughout recessions in the early 1990s, and in the early part of the current decade, demand has risen substantially, regardless of the economic conditions in the general economy. This applies both in Europe and North America. Some trade opinion suggests that supermarkets benefit when consumers tend to eat at home. There is further opinion from industry sources that consumers reward themselves in these recessionary periods by purchasing higher quality snacks.

Similarly, following major price spikes in the mid 1980s and late 1990s, demand remained resilient. There is no doubt that higher prices meant a slowing of orders, but imports continued to keep up the pace. This seems to suggest forward buying dries up in times of sharp price increases, but buyers react quickly as prices normalize.

Currently, the cycle is at a stage when the market price has dropped following a sharp price rally, and demand is limited, as buyers wait to see the direction of the market. In the past, the market has come to a standstill for a period, and then recovered, without negatively impacting import figures. Bear in mind that product imported today was probably contracted up to nine months ago.

Current news from manufacturers is that snack food demand is down at the retail level – a fact that is explained by the shock of the current economic crisis. Cashew demand is faring better than average, and organic cashew demand is better yet.

At present organic sales overall are dropping in the US. Mintel forecasts that the last five years' sales growth of 142% will slow down. Retailers are promoting their own 'value' brands at present. However, in 2008, according to Mintel, 1,454 new organic products entered the market. It is not known how many of these contained edible nuts or cashew nuts, but the trend must be positive for all organic food products.

3.1 Impact of the 2008-2009 recession on cashew sales

As the world entered a period of recession in the second half of 2008 it was anticipated that cashew demand might slow down but would not suffer major setbacks. Cashew demand has been resilient in difficult times in the past and continued to grow during those periods, albeit at slower rates.

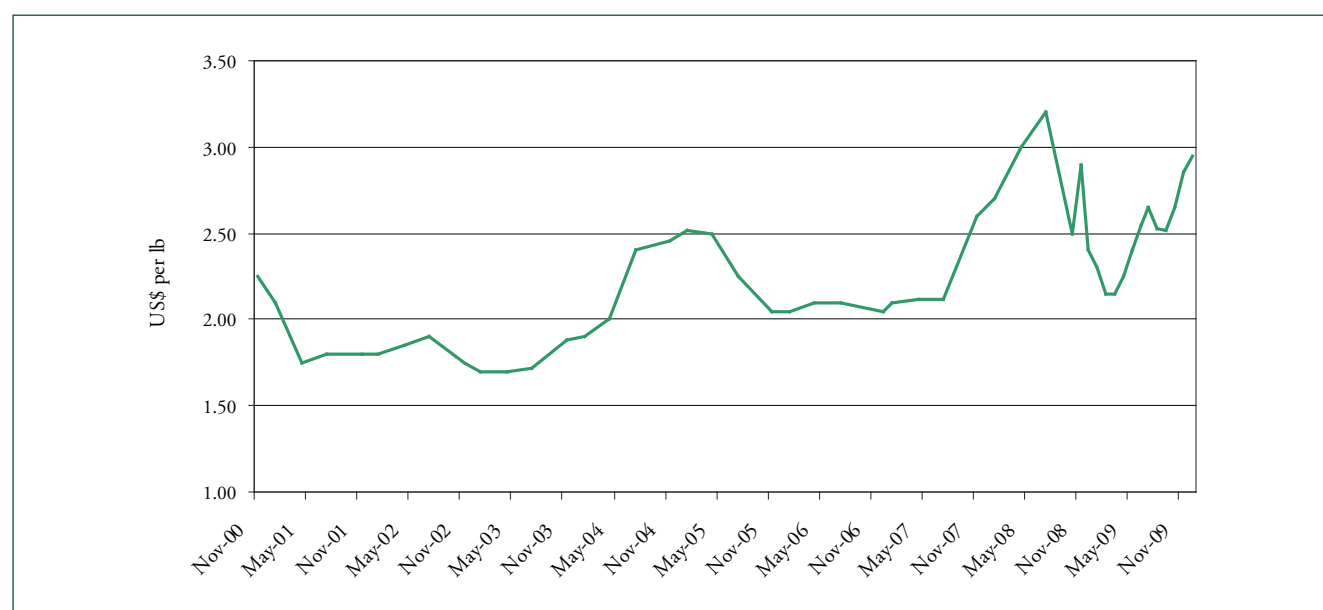
At the end of 2009, the industry was once again looking at high prices, a tight supply/demand matrix and buoyant demand. However, 2009 witnessed some important changes and the beginning of a globalized approach to the cashew business. The trend towards a more even geographic spread of demand has continued and accelerated. The main shelling countries have become stronger and shelling technology is now being shared across borders. The first signs of a formal global association and cooperation among cashew shelling countries have emerged.

3.1.1 Cashew prices (July 2008 to December 2009)

The primary impact of the recession on cashew prices has been unexpected volatility from September 2008 to March 2009, but prices have recovered to highs that are well above long-term averages.

In late 2009, prices for the benchmark grade of cashew kernels (WW320) were approximately 30% above the 10-year average. Prices recovered at a steady rate since the collapse in the second half of 2008, and in the last quarter of 2009, mirrored earlier highs by surging to US\$3.00 per lb. These price levels are very comfortable for growers and shellers who have their own supply of in-shell raw material. However, the importing in-shell buyers in India and Vietnam are paying prices to suppliers in East Africa and Indonesia which are approximately 10% above the current kernels' price in the shelling parity calculation. They were doing so because they had sales commitments for cashew kernels in the first quarter of 2010 and needed raw material. However, it is widely accepted that the current price levels for in-shell material represent a risky proposition for a sheller who does not already have a kernels sale to match.

Figure 3.1 Benchmark WW320 Price \$/lb, FOB lowest origin



Sources: *Ingredient Sourcing Solutions, Trade*

Following the price rises of 2008, by mid-year the market was over-inflated, fired by supplier defaults. A correction began in July 2008 and prices drifted down in August. As the international financial crisis took hold in August and September 2008, the cashew trade virtually ceased. Future demand was unknown. Financial controllers instructed buyers to reduce inventories and it was not clear if banks would survive to offer the credit facilities required by businesses. The market was full of rumors of bankruptcies. Prices started at record highs and the initial correction turned into a roller coaster as cashew processors attempted to make sales at the prevailing high prices, and forced a market with no buyers into freefall.

As the market price fall gathered momentum, importers, having suffered similarly themselves six months previously, informed suppliers that they wanted to renegotiate contracts and defer shipments. In a mixture of necessity and profiteering, anarchy prevailed in the cashew kernels market. Roasters and manufacturers decided to run down their inventories, especially those in the US and Europe. This, in turn, caused imports to collapse in the last quarter of 2008. Prices hit the bottom in December 2008 and stayed there until April 2009. Buyers concentrated on reducing inventories and confidence evaporated so no forward purchases were made. Supermarkets, which usually contracted a year forward, deferred decisions indefinitely.

During the second quarter of 2009, it became clear that demand had not been as severely damaged as feared. In fact, US imports were up higher than the previous year, China's market was growing and the Indian domestic market experienced remarkable growth.

It also became clear in April 2009 that the Indian crop was not as good as expected, and that the Vietnamese crop was well below both expectations. The Vietnamese position was complicated by a severe crisis in financing. At times this prevented processors from buying raw material, which in turn resulted in damage as product stayed too long in poor storage conditions in small villages.

As April 2009 ended, news from West Africa indicated that unseasonal rains had damaged the important Ivory Coast crop. Low prices previously offered from Ivory Coast were withdrawn, and raw material started to move up in price.

The kernels market reacted by moving upward toward more normal levels (about \$2.60 per lb, FOB origin). Demand was limited, as buyers were cautious and unwilling to commit too far forward. Export volumes from India were down, but the domestic market was taking up any surplus. Vietnamese exports were down almost 10% for the first nine months of 2009. Inventories in Vietnam remained light, but a steady flow of orders kept prices firm.

On the demand side, certain markets maintained volume. India and China were showing growth. The US was on target to match the previous year. By October, it became clear that raw material inventories were probably not enough to match demand. Shellers were not carrying any stock of unsold kernels and Indian imports of Ivory Coast in-shell nuts had proven to be of low quality and low yield. Much of this imported material remains stored and unwanted at Indian ports. The Brazilian crop was delayed and ultimately expected to be 15-20% below 2008. East African crops were late coming to the market for internal structural reasons.

Buyers entered the market with orders for what they needed now and in the near future. Prices gathered momentum and eventually shot up to levels just over \$3.00 per pound at a time of little volume traded, but of sharp price rises. In-shell prices moved up as well.

At the end of 2009, prices for cashew kernels looked healthy from a processor's point of view. In-shell nuts were trading at very high levels. The market was seasonally quiet, but Chinese demand for Vietnamese material was good. Overall, demand levels did not appear to have been severely impacted. Looking forward to 2010, prices will depend on buyers' attitude to forward purchasing, the return of normal demand levels in the snack food sector in the West, and continued growth in the markets of Asia.

3.1.2 Impact of the recession on grades and grade spreads

In times of volatile prices, changes in the relationship of prices for different grades could be expected. There were a number of changes in 2009 which will have a bearing on the marketing strategy and expectations for new market entrants.

Large kernels: Large kernels are WW240 or larger. In the course of 2009, there was increased volatility in the prices for larger grades. As 2009 ended, prices for the larger grades were relatively lower than a year before. The calculated index on the updated grade comparison chart for WW180, as a three-year average, was 144 versus 156, at the

end of 2009. This means that prices for WW180 were closer to prices for WW320 than was the case at the end of 2008. The actual three-year average premium for WW180 had decreased from \$1.26 per pound to \$1.01 per pound. The three-year average was now back close to the ten-year average, suggesting that the boom in large kernels had calmed and a more usual trading pattern had emerged.

Looking at WW210 and WW240, versus the WW320 grade, similar, although less pronounced movement could be seen. The conclusion to be drawn at the end of 2009 was that although prices had recovered to high levels again, the larger nuts were worth relatively less compared to WW320, than they were at the end of 2008. Given that there was no reason to believe that large kernels were in greater supply than in previous years, it must have been a demand impact.

This is not surprising, given that large nuts are very much 'high end' products at the retail level. They require larger amounts of money to finance for packers and are more expensive to market. In line with general consumer developments in recent times, it seems that high end retail items suffer more in a recession. This is probably a short-term impact, especially on WW240, which are aggressively marketed in the US.

A more lasting affect on the large wholes will likely be the advent of high prices over a sustained period. Price points are very important for retail sales in Western countries. The very large kernels – WW180 and larger – are hitting levels which may discourage trade in those grades.

Mid-range wholes: There would appear to have been little or no impact on the relative value of mid-range wholes. WW450, SW320 and LBW all appear to have maintained a steady differential against WW320. The index for the 3-year average has moved only one point, as has the index over 10 years.

Broken: Broken kernels as a whole were worth a little less on average in the export market at the end of 2009, than a year earlier. The near cessation of exports of these grades from India had some impact on this calculation as Indian domestic prices were not included in the calculations. Indian broken kernels generally trade at a significant premium over Vietnamese product in the international market.

In the international market, the average discount for both Fancy Splits and Large White Pieces has dropped, losing three and eight points, respectively, on the index as compared to WW320.

It is unlikely that the loss in relative value for broken is due to any result of the recession. Trade sources suggest it may be more likely that broken have become more volatile, because: 1) India is no longer effectively an exporter, and 2) Brazilian nuts are effectively presold. Therefore the market is determined by Vietnamese broken alone. Vietnam has no domestic market for these, and a wide variation in quality among suppliers contributes to lower prices for broken.

It has also been suggested that buyers in the US, formerly a major marketer of broken for snack food usage, has moved more to WW320 as the snack food grade. This subject will be addressed further in the section on demand in a recession.

3.1.3 Lessons from the recession on grade differentials

- Large kernels are relatively lower value in a recession.
- The larger the kernel, the more pronounced the impact.
- Paying high premiums for large in-shell nuts needs consideration.
- Broken kernels are losing value versus WW320: This may be a more long-term trend.
- These factors increase the importance of minimizing breakage.

3.2 How demand has changed as a result of the global financial crisis

Worldwide, the overall outlook for cashew demand is in line with predictions made at the end of 2008, despite falling consumer spending and rising unemployment. The nature of cashew demand in North America means that impact is likely far less than on the Food Service Sector, for example, as consumers stay home and buy snacks, instead of dining out. Growth in India, and to a lesser extent in China and the Middle East, also keeps trade moving. Overall consumption is down, as export figures show, but the actual drop may be less than export figures show, as packers and roasters in destination countries have reduced their inventory levels.

People often talk of mechanization, increases in production and quality, but the real cashew revolution has been in the stores and markets of India in the past ten years. There has been a dramatic change in the pattern of consumption of cashew kernels. At one time, cashews were produced in developing countries and exported to rich Western countries for consumption. Today, almost as many cashews are consumed outside of the US and Europe as are consumed there. In terms of consumption, the outlook for cashews is brilliant.

The statistics for 2009 show an encouraging picture, given the economic conditions. For nine months of 2009, Vietnam was up 9.86% by volume against 2008, although down in value due to price falls. Indian exports were down 5.1% by volume for the period Apr-Nov 2009, according to the Cashew Export Promotion Council of India. There was a marked improvement on the April-October 2008 figures. Vietnam increased its exports to the US, and India's share of that market declined. This seems to indicate that the drop from India was a loss of market share in the US. Brazil's exports have improved, with their share of the US market rising by 31% at the expense of the Indian exporters whose share fell by 25%.

The US is the market most susceptible to price changes in cashews, as consumption is high and marketing is promotion based. But cashew imports for the ten months to October 2009 are only down by half of one per cent. Given that November and December 2008 were the worst months for demand, it is likely that US imports for all 2009 will show an increase on the 2008 figure. Higher Indian export figures to the US for November 2009 seem to confirm this.

3.2.1 Changing buying patterns

A number of factors have emerged which have changed the buying patterns of established buyers. These have had an impact primarily on buyers in Western countries, particularly those in the US. They are:

- Loss of confidence due to the economic situation.
- Reduced availability of funding.
- Lack of supplier contract integrity during the price rise of 2008.
- Absence of price-based promotions at the retail level.
- Globalization of the industry.

Far forward buying: A feature of the industry for more than 20 years, far forward buying seems to have ceased almost entirely, and the recent rise in prices is likely to accentuate this trend. Each upward price movement reduces the risk calculation between buying today and upward price potential. Buyers have fewer reasons to make a forward buying decision today than they did a month ago so they continue to buy for the next month or two, hoping they will continue to be rewarded for that decision.

In addition, buyers who bought in 2008 at low prices, had problems in getting their contracts executed by many suppliers. They have often come to the conclusion that forward buying is not worth the trouble. This is especially the case in the US, where packers will sometimes trade to private label customers, based not on the current market price, but on their own procurement average. If they do not receive the product purchased at low prices, they have to replace it with higher priced goods, with negative impact on their profitability.

The pattern at the beginning of the last quarter of 2008, as the financial crisis took hold, was that top management in major companies instructed buyers to stay off the market. Demand had become unpredictable and confidence had evaporated. Many supermarket buyers decided to defer their decisions on forward commitments, which caused packers to do the same.

The market fell sharply in the last quarter of 2008 and stayed low into 2009. This meant that most buyers had good purchase averages going into the busy season of 2009. In other words, buyers were rewarded for their decisions not buy far in advance. This led to buyers continuing the strategy, even when confidence returned.

It remains to be seen whether or not the absence of far forward buying will continue. It may be that once prices are attractive again, the whole cycle of forward purchase, price rise and contract default will occur again. This is likely because supermarkets do want commitments from packers, and packers need to manage their risk.

One sector of the market which may have suffered during the past year, are importers. The 'conservative' buying pattern means that buyers are able to work directly with origin suppliers as the risk profile is reduced when shipment closely follows contracting.

Reduced inventories: Many roasting companies reduced the inventories they held as finance became tighter, despite low interest rates. This has meant that buyers have been more likely to come to the market for prompt or spot shipments, keeping inventories at origin under pressure, and eventually forcing prices up toward the end

of 2009. The absence of funding has also meant that unsold inventory at ports of entry such as Rotterdam or New York are lower, which occasionally causes mismatches between supply and demand.

Reduction of inventories can be a risky practice for roasters in the US or Europe. Contracts with supermarkets are often for an 'open volume' – meaning that there can be unpredictable surges in volume which the roaster is obliged to fulfill. Given that the shortest voyage from sheller to roaster in Western cashew-buying countries is two weeks, inventory shortages can mean that a roaster has to enter the 'spot' market, usually paying premium prices. Running out of product is not an option for roasters if they want to keep their customers.

The 'spot' market itself is less and less a factor as importers are unable to fund inventories at major ports.

Given the logistics, the condition of the import trade, and the nature of sales contracts with the powerful supermarkets, it seems likely that roasters will return to carrying more adequate inventories in the medium to long term. They will have learned some lessons from the tight inventory policies of the past year, but if the main supply is 5,000 miles away, having adequate inventory is essential. If confidence returns in Europe and the US, a rebuilding of inventory should have been expected from mid 2010 but has not developed due to fears of further volatility in prices.

From the shellers' point of view, inventory management is an essential part of business profitability. India holds a major advantage in this area. The large domestic market in India means that unlike their counterparts in other shelling countries, the Indian packers do not have to wait until they have a full container load to make a shipment. Indian packers can ship smaller lots directly into the markets of major population centers, earning cash more quickly, and reducing their borrowing requirements. This also allows packers to by-pass the preference in international markets for full container loads of the same grade. On the other hand, financing for domestic sales in Indian Rupees is more expensive than subsidized export finance rates. Most shellers borrow in dollars for imported in-shell nuts, which is offset against their export contract commitment, and matches the bulk of their dollar risk. As the financial crisis unfolded in 2008 and 2009, banks in India found it difficult to keep up the previous volumes of funding. Interest rates were in the range of 5.25% net, according to one major sheller in India, but any additional funding was almost impossible to raise. Financing in Rupees at the subsidized export rate, was 8.5%, with a foreign exchange risk as sales contracts are almost always in US dollars. For the domestic trade, the sheller could expect to pay an even higher rate. Therefore, the sheller would always have to compare the domestic market premium price advantage against the disadvantage of a higher cost of funding.

Vietnamese packers have no such opportunity. The Chinese market is 'on their doorstep' but remains a moderately-sized market and often highly seasonal in buying patterns. By the middle of 2009, Vietnamese packers were desperate for additional funding and were regularly seen undercutting Indian prices in the marketplace. This may well have cost the Vietnamese packers an opportunity to buy high quality material early from Indonesia.

Contract integrity and reliability: For many years, when prices rose, many suppliers, especially those in India and Vietnam, either sought to renegotiate contracts or simply defaulted on contract commitments. This causes major headaches for importers and packers alike who have to sell for a defined shipment period at a fixed price. The year 2008 was probably the worst year on record for this problem. For example, the UK trade association,

CENTA, eventually sent a legal delegation to Vietnam to try and resolve problems. The idea was to make a point to Vietnamese exporters. Incidentally, this has never been confined to shellers who themselves have been the victims of default by in-shell suppliers. This is a major concern which the Vietnamese trade association, Vinacas, is trying to address.

The end of 2008 and the dramatic changes both in the economic environment and the cashew market caused many buyers to renegotiate or default on contracts. There was an element of ‘pay back’ in this, but the end result was that the overall integrity of the market was damaged. It has become as important for exporters to assess their market/contract price risk with buyers, as it was for importers to do the same over the years.

These threaten the viability of tight-margin importing and trading companies. It also has implications for the inventory levels necessary; the viability of price promotions; the entry of new businesses to the market; and the levels of price volatility, because defaulted contracts have to be re-purchased or re-sold, creating a multiplier effect on prices.

This problem has held back the cashew industry for many years, and continues to have impacts throughout the supply chain, right down to the grower level. The industry continues to cry out for reliable suppliers who will honor their contracts, signal any difficulties in advance, and work openly with customers on the development of quality and hazard management systems. It is essential that any new entrant, from Cambodia or elsewhere, sets out their policy and builds a reputation for reliability as quickly as possible.

Promotions and volatility: Retail promotions, which have been the driver of cashew volume growth in the US, in particular, have disappeared. Packers of private label and branded product are less and less likely to promote cashews due to the unpredictability of prices. This could cause stagnating demand in North America. One major packer pointed out how the volatility of competing nuts such as macadamia and pecans, stunted growth in those products for years, and continues to do so.

Whether or not this problem is a long-term factor remains to be seen, but as a major buyer pointed out – “We can deal with high prices, but we cannot cope with prices moving by more than 35% on a regular basis.” It is important to realize that the private label packing sector is of major significance so it is important for a buyer who has committed to purchase to be sure that competitors will not get a significantly lower price in the short term. Between competing parties, the relative sourcing price is as important as the absolute price level. Lower levels of volatility, at whatever price, make competition less severe and helps to build volumes.

3.3 The need for and moves towards better industry integration

The cashew industry lacks integration on national or international levels. It has no multinational shelling operators, with the exception of the in-shell and processing company, Olam International. There are traders active in a number of countries but few have any local infrastructure and tend to buy FOB origin. Until recently, trade associations tended to be nationally-based and represented the view of a particular sector (usually importers). The year 2009 marked the beginnings of a globalization process which will, in due time, change the environment for processors.

Market information is very difficult to find. The only published market information is written with a particular emphasis. Cashew Week from the Commodity India venture is written with an Indian emphasis. Publications such as The Public Ledger have a trader's point of view. The only neutral reporter is the monthly Cashew Bulletin.

The clearest signal to emerge in 2009 was the signing of an agreement by the Cashew Export Promotion Council of India (CEPCI), the Vietnam Cashew Association (Vinacas), and the Brazilian Association of Cashew Manufacturers (Sindicaju), to establish an international organization to promote the product and represent the interests of shellers worldwide. This was done at the annual meeting of the African Cashew Alliance in Abidjan, which will also be involved. This means that for the first time, there will be an international forum for discussion and development and promotion of the product. Ultimately, it can be expected that members will develop a code of conduct and perhaps a unified specification. This will have a major impact on buyers' behavior. It can be expected that buyers will become far more likely to deal directly with the origin and to be far more aware of the differences between processors, both in terms of quality and contract reliability.

A trade association for importers is being discussed, stimulated by a perceived need for representation in times of major contract defaults. This could develop into an organization with more positive aims.

In the section on processing developments, the spread of technology and particularly Vietnamese technology, has been discussed. This is a major factor and will contribute to buyers' understanding across origins, again causing them to be more likely to deal with origins than intermediaries, as is the case at present. Also, if managed well, this could stimulate development of shelling facilities in Africa. However, buyers still resist African product, following experiences with poor quality in the past.

In Africa, the African Cashew Alliance (ACA) has continued to grow as a trade association and an advocate for shelling cashews in Africa. The year 2009, was a major watershed because the Gates Foundation funded major research for Cashews in Africa which will allow the ACA to grow and assist the development of cashew production across national boundaries in Africa.

3.4 Demand in the main markets: conventional/organic/fair-trade

Concentrating on markets where there are changes to report, the following assesses developments over the past year and impact of the recession in the main destination markets for cashew nuts.

3.4.1 India

India has emerged as the largest consumer and continues to grow as sectors of the huge population attain a level of income that allows them to indulge their taste for cashew nuts. With improving distribution and marketing channels, this development is likely to accelerate. Over the last 10 years, consumption in India has grown enormously from an estimated 30,000 mt per to today's estimate of 130,000 mt (which some say is much higher). This makes India the largest importer, sheller and consumer of cashew nuts in the world.

Current growth rates are in the region of 15-17%, which means India could be a net importer within six years. This is the single biggest factor in the market today.

Indian demand has grown, based on prosperity for some, and improved standards of living for others. A wide range of Indians use cashews at some time during the year as the product is not only sold as an up-market snack but has an important place in the market for sweets. This means that pieces and broken in India are far more important than elsewhere. As a result, prices for pieces are higher in India, and imports have even taken place, despite the \$0.35 per lb import duty.

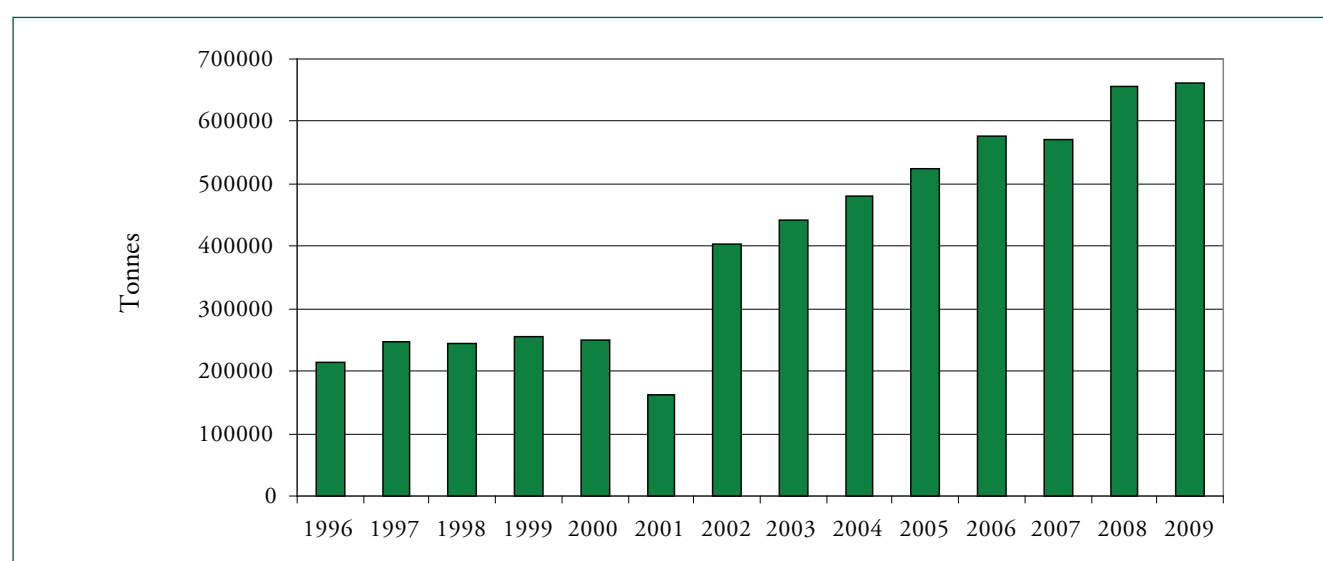
Consumption has also grown with the expansion of the retail system, particularly supermarkets, which give rise to impulse purchases of snacks and sweets, as well as bringing consumer prices down. Another crucial factor for the development of the trade within India, has been regularization of the VAT (sales tax) which has allowed trade between states to become easier. Looking to other products for validation, Indian groundnut consumption as kernels (as opposed to oil stock) has doubled in the past three years to 1.2 million mt. The trend is very much up.

It is difficult to overstate the importance of developments in India. Planting and production cannot keep up with expansion of demand – a tree planted today will not reach production maturity until 2017, by which time India is likely to be a net importer of cashew nuts.

As a result, India's appetite for in-shell cashew nuts will continue to grow. Between 2002 and 2008, imports grew from 400,000 mt to 655,000 mt, and show no signs of stopping there.

The market operates through a series of traders and big buyers who handle shipment and advance payment to the cashew shellers. The corporate players are Cadbury, Britannia, Haldiram, and Amul.

Figure 3.2 Imports of in-shell cashews to India



Sources: *Ingredient Sourcing Solutions, Trade*

Cashew kernel prices in India: It is widely known that prices in the Indian domestic market are significantly higher than export prices. The following table demonstrates this difference in 2008 and 2009. From this and discussions, it appears that the domestic market is not as volatile as the export market so the premiums widen when the market for exports is weak.

Table 3.1 India: domestic vs export prices

Prices in US\$ per lb	March 2008	March 2009	Sept 2008	Sept 2009
WW320				
New Delhi Market	\$3.04	\$3.02	\$3.91	\$3.40
Export FOB	\$2.90	\$2.15	\$2.90	\$2.65
Premium	5%	40%	35%	28%
Fancy Splits				
New Delhi Market	\$2.52	\$2.41	\$2.99	\$2.99
Export FOB	\$2.20	\$1.30	\$2.20	\$2.15
Premium	14%	85%	36%	39%

Source: *Cashew Bulletin*, CEPCI

Taking into account the above lesson, a prospective Cambodian sheller should remember that although India is a competitor, it may someday become a customer for cashew kernels as well as in-shell. Whether this happens or not, in the years to come, India will exert a huge influence on the direction of the cashew industry.

Organic India: There was little or no change in the Indian organic potential in 2009. The exporters are more interested, and state governments have a growing interest in organic production, but development is slow. Maharashtra State is the most likely to introduce an organic farming policy but the discussion has been ongoing for some five years. On a positive note, the National Agriculture and Process Food Development Agency has appointed certification bodies but costs are high for farmers, at about \$325. There is a perception that the wealthier sector of the population would be prepared to pay the premium for organic cashews, but the marketing channels are few. There appears to be a perception that organic production will reduce productivity, which is a problem in a country where food security is such a major concern.

Fair-trade India: Although it remains a minor factor in India, 2009 has seen the development of cooperation between the Fairtrade Alliance of Kerala, a small farmers' group, and Liberation Foods of the UK.

3.4.2 United States

The US snack food market is developing rapidly, despite the recession. Sales of snack foods are forecast to grow by 20% according to NPD Group in their report 'A look into the Future of Eating'. Breaking it down into sectors, the market for salty snacks has done well in the recession, with sales of items like potato snacks, popcorn and

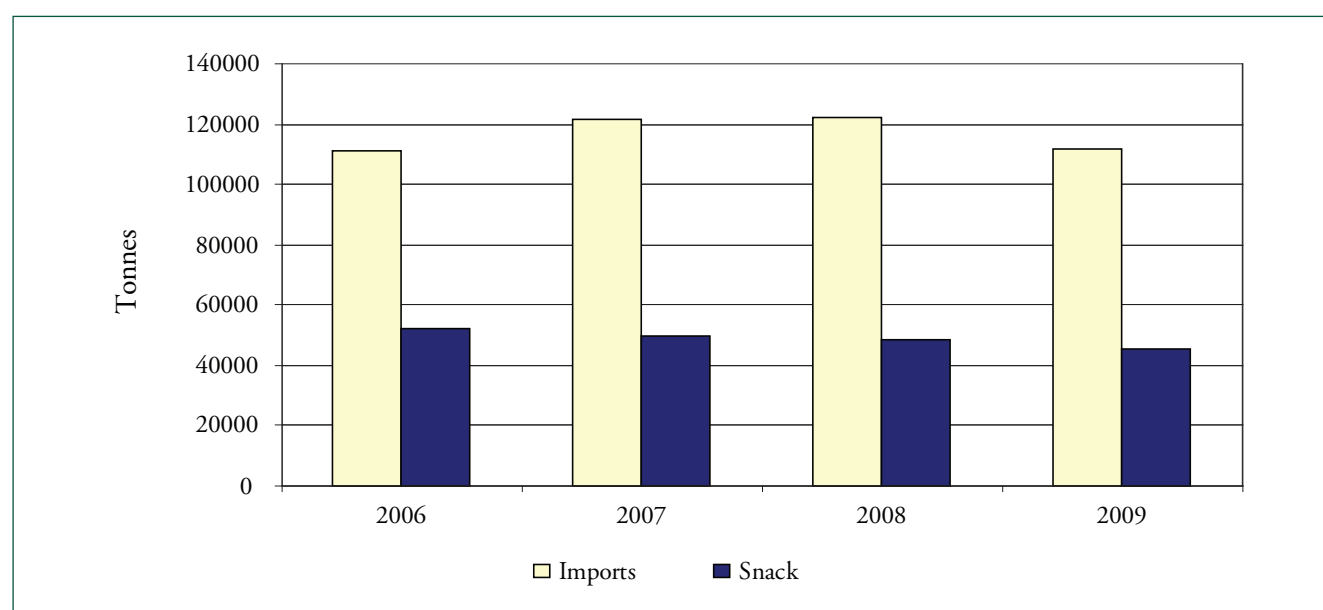
cheese snacks all up by about 20% over the past two years. The long term future of salty snacks and snack nuts is probably secure and a return to modest growth rates next year would not be a surprise. Taking 12 months to October 2009, retail sales of snack nuts compare well with the previous period. Over 12 months sales were up 1.3%; 6 months sales were up 2.5%; and 3 months sales were up 3.2%.

As mentioned, US imports of cashew nuts for the first ten months of 2009 were similar to the 2008 figure, with a drop of only 0.5%, and this was likely made up in the last two months of the year. Changes were observed in US buyers' buying patterns, with less forward buying and fewer promotions. To December 2009, there were no significant bankruptcies in the sector. Cashews held approximately 20% of the US snack nuts market. Sales in this area had fallen by approximately 12% over the previous four years, during which time high prices prevailed, and almonds share had grown significantly from 11% to 18%, based on heavy promotion of health claims.

To October 2009, cashew sales had recovered with 12-month sales down only 1.1%, 6-month sales down just 0.1%, and 3-month sales up 5.6%. The recession appears to have stimulated cashew demand. This may be because cashews have very limited food service sector sales. They are bought mainly for consumption at home. It has been suggested that cashew sales increase in a recession as consumers reward themselves with a luxury rather than eating out.

Initially it appeared that it was business as usual after a sharp decline in the last quarter of 2008 and some modifications to buying patterns and behavior. However, efforts to explain a discrepancy between import figures and snack food sales figures, showed a major change in the US market, which could be good news for cashew shellers.

Figure 3.3 Cashew imports vs cashew/mixed nut sales combined



Sources: US Customs, Trade

Figure 3.3 measures cashew snack nut sales, combined with mixed nut sales, as against total imports of cashew nuts. Mixed nuts are compared because cashews comprise a high proportion of mixed nut sales. It demonstrates that despite a fall in snack nut sales, imports of cashew nuts continued to rise for 12 months before November 2009. The cashews must be used in some other sector of the market besides snack foods. In 2009, it turned out, that use of cashews greatly increased as an ingredient in snack bars, cereals and other applications. This has been confirmed by US processors.

This explanation fits very well with the fact that India's market share of US imports has fallen, while Brazil's share has risen. India is not competitive for broken nuts due to their domestic market, but Brazil has large quantities of broken nuts to sell due to damage in their automated processing. This will have a major impact on shellers who can provide 'batch' ready, good quality cashew pieces. It appears that the US has discovered, or rediscovered, cashew pieces – this time as an ingredient rather than a cheap snack.

Organic and fair-trade: BakeryandSnacks.com recently reported that Packaged Facts, a US market research firm, had reported that health considerations are important for consumers and that organic snack food sales were continuing to grow as a result. There are few figures available for 2009 as yet, but market participants report solid sales of organic snacks, although as reported earlier, the US organic market remains small. It appears that organic sales in the US remain a niche market.

The organic sector may be negatively impacted in 2010 by a recall of organic hazelnuts by Wholefoods, following a salmonella scare. Earlier in 2009, a similar, although more severe salmonella outbreak in peanuts, decimated sales for a number of months.

Fair-trade sales of cashews are not a factor in the US market. The small players which do exist such as Just Cashews and Liberation continue to make inroads on a small scale. Overall, ethical sales were up by 15% during 2008, but the growth rate for 2009 will likely be in single digits.

3.4.3 Europe

United Kingdom

The UK snack nut is undergoing major changes. The Intersnack Group from Germany has entered the market and is expanding by buying a number of companies (most notably, Percy Daltons Famous Peanut Co. Ltd, one of the largest and oldest in the sector). Intersnack also owns a number of other smaller companies in the UK and now has a significant market share in competition with Planters and KP Foods. This consolidation in the industry is likely to reduce the number of buyers and put pressure on the large number of UK-based merchants/traders. Recent reports indicate that at least one large trader has been rescued from insolvency in the past year, another has gone bankrupt, and a large processor has experienced losses for the first time in many years. There is little doubt that the UK market is under severe stress as a result of consolidation, pressure on prices from supermarkets, weakness of the UK's currency, and general high price levels for edible nuts (especially almonds, cashews and peanuts). It was difficult to estimate demand for all 2009, as figures were not yet available. Reports suggest though that volumes were down.

Organic sales growth stalled in the UK retail sector in the first half of 2009, with growth reduced to 1.5%. At the end of the year, it was difficult to quantify the impact on organic sales of a small market share item such as cashews, however, importers of organic and fair-trade cashews reported that demand had remained stable throughout the period, despite rising prices and the publication of a major study which suggested that organic products do not enhance health. These claims have been disputed by a range of commentators and market participants. A number of new fair-trade cashew products have been launched, notably the brand 'Harry's Nuts' which have proved to be very successful so far.

Fair-trade sales in the UK grew by 43% in 2008 to £700 million. There were major developments in the confectionary sector, notably with Cadbury and Nestle. One fair-trade importer indicated that it was taking time for packers to get their products into the supermarkets, so growth would be slow in this sector. In the edible nuts sector as a whole, the fair-trade and organic trade is handled by smaller companies. This presents greater hurdles compared to when a major brand such as Nestle launches a fair-trade product. However, enquiries are holding up and growth is expected to continue.

Fairtrade Standards for Edible Nuts were reviewed with the update from February 2009 available at http://www.fairtrade.org.uk/includes/documents/cm_docs/2009/a/annex3_2_12nuts_and_oilseeds_spo.pdf

Germany

It appears that the German market has suffered less than elsewhere during the recession. Demand for edible nuts has undergone some changes in buying patterns, as outlined above, but overall demand seems to have fared well, or at least less badly than in the UK or the US, for example.

As elsewhere, the worst of the recession was felt in the first half of 2009. Turnover was down 4% in the period due to falling prices, although volumes were up 5%. This followed 15% growth in 2008 over the organic food sector in Germany. The second half of the year has seen a stabilization of prices, and trade sources expected sales to recover to single digit growth for all 2009. Organic prices in terms of the premium over conventional, have remained stable although some volatility was noted by one source which may be of some concern.

Netherlands

A very similar pattern emerged in the Netherlands market over 2009, as in other countries. Initial forward purchasing interest during the early part of the year gave way to a more cautious approach as supermarkets deferred longer-term purchasing decisions. As a result of rising prices, the Rotterdam market for wholesale product spent most of the year below origin prices, but also due to strained finances. Dutch banks, as elsewhere, suffered, and trade finance became scarce. Only in the last few weeks of 2009 was the 'spot' market again showing the customary premiums. It appears that Dutch trade houses have weathered the worst of the recession and that the Rotterdam market will continue to dominate the trade in landed goods within the European Union.

The German/Dutch Intersnack Group continued its expansion and exports from the Netherlands look buoyant at the end of 2009, although domestic demand was, as would be expected in the circumstances, less resilient.

Commentators on organic sales in the Netherlands summed up the year by saying that sales remained steady with some growth expected at relatively low levels. However, new projects which might have increased the profile of both organic and fair-trade cashew nuts were shelved until the uncertainty has passed. It could well be that these projects will once again emerge if there is a continued recovery in the Netherlands and Germany in 2010, as commentators are predicting. However, a certain frustration is evident from some in the Netherlands trade because marketable quantities of organic cashew kernels are not available on which to base development.

3.4.4 Middle East

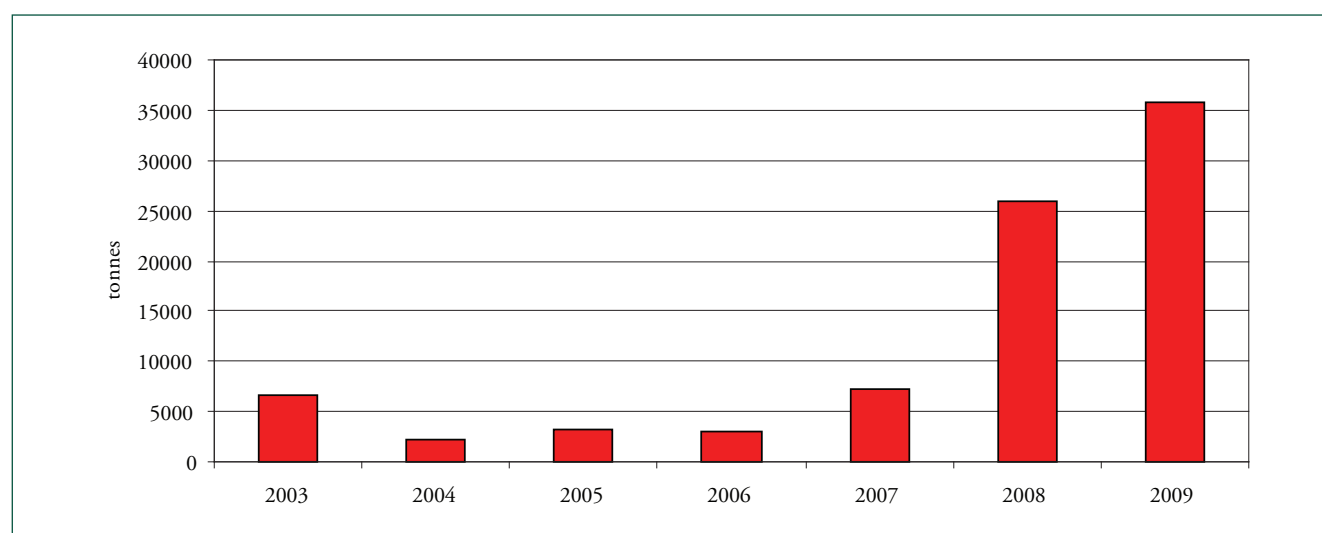
The Middle East market appeared to be stable in 2009, with no major impact from the recession, according to trade sources in India. Vietnam did not increase its share of the Middle East market over the year.

3.4.5 Asia

China

Statistics are now showing that the cashew market in China is growing rapidly, although this may have been ongoing for some time, although not reflected in the statistics. It has been difficult in the past to reconcile Vietnamese exports and Chinese import statistics for cashew kernels. Growth since 2003 has been strong, and continued throughout 2009.

Figure 3.4 China – cashew kernel imports



Sources: UNComtrade

Domestic production in China accounts for only about 2% of demand, according to figures from the Cashew Export Promotion Council of India. Vietnam continues to provide in excess of 95% of imported product. Growth is likely to continue in the main consuming cities of Shanghai, Beijing and Guangzhou, and the current recession is unlikely to change this.

Looking across the spectrum of edible nuts, it appears that the Chinese appetite is growing for this range of products. Spectacular rates of growth have been seen in almonds and pistachios while shorter term growth can be seen in hazelnuts. It appears that the outlook for demand, in both the short term and the long term, is good. It is also interesting to note that the impact of consumer packs from the US has been significant. It may well be worth approaching the Chinese market as a destination for consumer-packed roasted and salted cashew kernels.

Cashew imports in China are subject to import duty ranging from 6% to 15%, although some countries are exempt. The market could be of particular interest to a Cambodian exporter as it is priced very well compared to other export destinations.

Table 3.2 Snapshot of cashew kernel prices China vs. International FOB – early December 2009

\$ per lb	WW240	WW320	DW
China	\$3.15	\$2.95	\$2.52
International	\$3.05	\$2.85	\$2.30

Sources: *Ingredient Sourcing Solutions, Trade*

A look back over 2009, suggests that these premiums are not unusual for the Chinese market but that there is a seasonal factor built in during the run up to Chinese New Year.

Longer term, China will be a major consumer, but it may emerge as a producer too. At some point in the future, China could become a processor, competing for Indonesian, Cambodian and African in-shell cashews. It could also emerge as a grower of cashews, as there are areas of suitable climate. Either of these is likely only if demand continues to grow, but for some time to come there will be opportunities for sales to China.

Australia

Australian imports to the end of 2008, at 14,697 mt, matched 2007 figures. There is little evidence, either anecdotal from the trade, or statistical, to suggest there has been any dramatic change in 2009. Overall, Australian food imports to the end of October 2009 grew at 6.2% for unprocessed food and 16.55% for processed food. The recession appears to have had little impact.

Japan

Japan's 2009 import statistics on cashew kernels to end November 2009, from the Japanese Ministry of Trade, showed 5,229 mt, down 4.9% compared to the same period in 2008. Imports continued to be shared between India, which had the largest share at 4,548 mt, and Vietnam at 681 mt. The Japanese trade seems to have followed a similar pattern to previous years. It is not an area in which major growth is anticipated, although new processors who can offer quality product and a patient approach, will have an opportunity.

CNSL will continue to be of interest for Japan. The long-established Cashew Company Ltd. Of Saitama City, is a potential buyer <http://www.cashew.co.jp>.

3.4.6 Summary of impacts of the global financial crisis on the cashew market

Impact on cashew markets in general:

- Reduced availability of, and more expensive funding, in India (short term).
- Recourse to the domestic market in India for faster turn of cash flow (may have longer-term implications).
- Acute funding difficulty in the course of the year for some Vietnamese processors (short term).
- Marked reduction in inventory holding in the US (may have medium term implications).
- Reduced inventory holding in Europe (short term).
- Traders/importers have reduced unsold inventory and are more likely to sell their stock at a discount compared to levels which may be obtained at origin to replace it (this may have long-term implications).
- Some traders will be forced to withdraw or reduce activity. The trade is full of rumors of company failures (risk of failure will most likely occur in the first quarter of 2010).
- Pressure on Brazilian processors because currency factors make their business more difficult (this problem is short to medium term, but has the potential to reduce Brazilian growing of cashews if it persists for a number of years. It also makes the possibility of imports of African in-shell, which is currently banned, more likely as these nuts are traded in dollars and bear less foreign exchange risk).

Impact on organic and fair-trade cashew markets:

- Fair-trade sales continue to be strong, despite the recession. This may be due to low levels of penetration at this stage.
- US market demand seems to be more susceptible to recession.
- UK market reports are positive for 2009, both on fair-trade and organic product. There is some suggestion that demand would grow further if more product were available. Some major UK brands are switching to fair-trade sourced ingredients.
- Continental Europe has seen new projects shelved, but core demand remains healthy, although down somewhat.
- Healthy food is one of the strongest growing sectors, and is forecast to be a growing trend for the coming decade.
- No change in fair-trade minimum prices, meaning that the premium over conventional prices was less than in the years prior to 2008.
- Updated Fairtrade Standards: February 2009 covering production and financing.
- Transfair USA will certify FLO Certified Products in the US.
- The issue of fair-trade pricing for broken and off-grade cashews has not been resolved as yet.



Chapter 4. The Cashew Trade: Structure and what Buyers Want

4.1 Structure of the cashew market at destination

Cashews are imported primarily through specialist importers which cover approximately 70% of the market in Europe, 60% in the United States and probably 95% in countries of the Middle East and Japan. The market remains a physical market with no opportunity to hedge and no financial instrument to alleviate risk. Importers do typically run an open position sold or unsold. This means that they will have purchased goods which they have not sold as a way of managing the risks associated with the type of contract default referred to above. They may also have goods purchased and unsold as part of a speculative position. Sometimes importers will make the sale first and buy in later, expecting prices to fall. The closing out of these positions often exaggerates market price moves when they occur. The market is characterized by poor reporting, poor statistics and often lack of integrity, especially, although not limited to, suppliers in India and Vietnam. In many ways the market reflects the product processing – low technology, good margins and poor information systems.

In the 1980s and 1990s, there was an informal trading market in Europe that traded contracts for cashews which were rarely delivered as physical goods. This was known as the ‘paper market’ referring to the papers used – contracts, invoices etc. In some respects, it filled some of the functions of a futures trading exchange. The market afforded importers an opportunity to manage their risk. Since the final demise of the paper trading market in the 1990s, the importer’s function is essentially to manage the suppliers (execution and especially quality), carry the origin risk, finance the product, and, if necessary, break it up into smaller lots for distribution through a warehouse system. The more of these functions the importer fulfils, the better margin the importer would expect to make, although that is not always the case. Price speculation, although sometimes present, is less likely.

At one time the market could boast a large number of large trader importers, but today this has reduced to a handful. The emergence of Olam as the one large multi-purpose entity in the market trading in-shell, kernels and shelling, is the major development of the past few years.

Importers are usually active in a range of items across the tree nuts, peanuts, dried fruit, seeds and spices fields, often specializing in one or the other. Companies may, for example, be an internationally significant player in almonds, but only a local player in cashew nuts.

There are a number of large snack food buyers, especially in the US who will source multiple full container loads of product from the origin producers directly. Companies such as Planters (Kraft Foods), Ann's House of Nuts, and the Nut Company (the Netherlands) have the ability to buy direct from exporters. They will often temper their origin buying with purchases from traders as part of their risk management strategy.

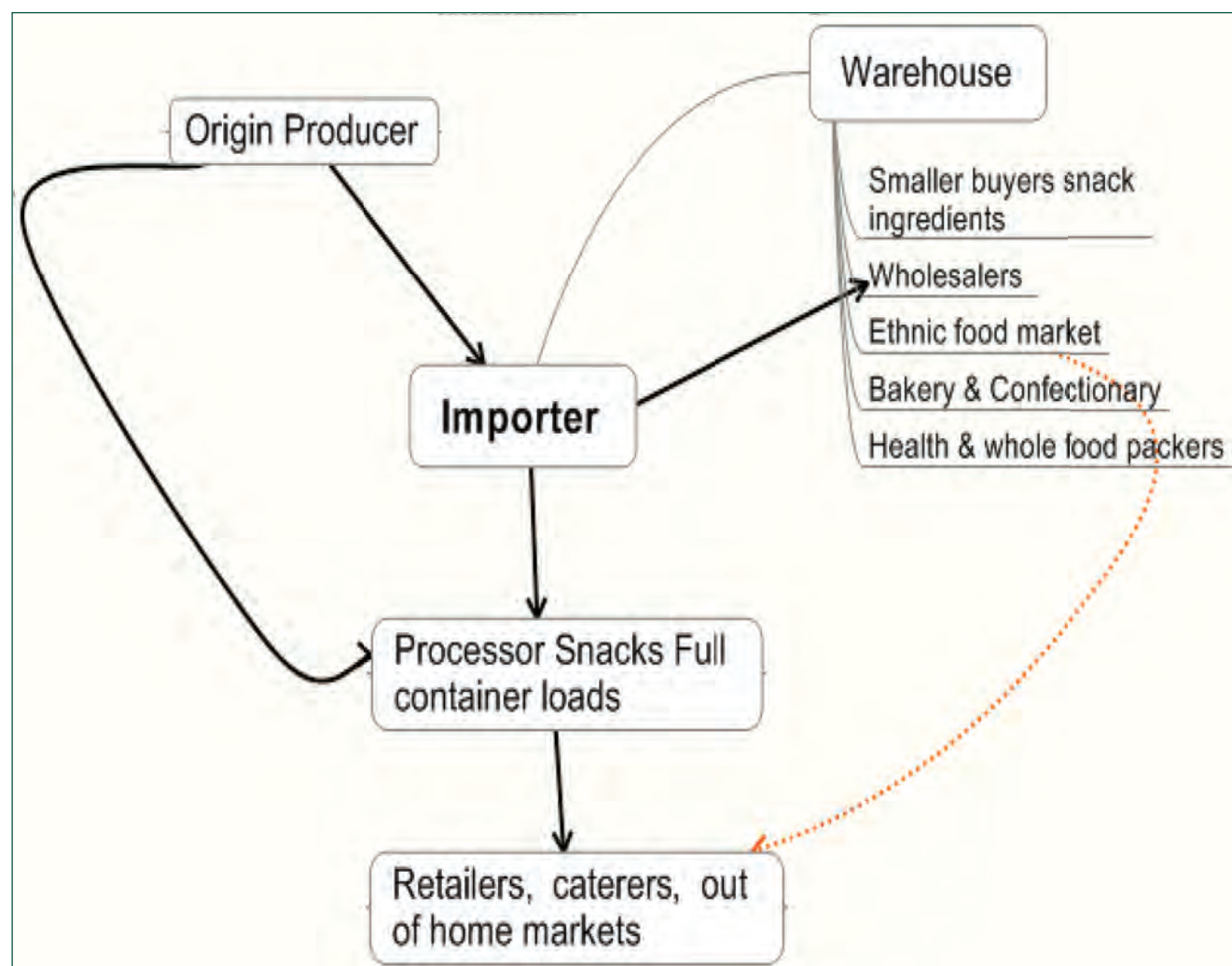
Importers will supply to a range of customers:

- Snack food roasters and packers.
- Health food and whole food packers.
- Bulk wholesalers.
- Produce wholesalers.
- Food ingredients manufacturers.
- Bakery suppliers and large bakers.
- Confectioners.

In the case of cashew nuts, the market is very much a snack food market with in excess of 80% of the product consumed roasted and salted. The organic market to a large extent reflects the above, but the organic importers are not usually the mainstream nut importers. They tend to be specialist organic importers who import a range of organic products.

Fair-trade importers usually deal directly with supermarkets and commonly have their own brand. They will also market their own brand to wholesalers who are interested in offering an alternative to their customers.

Figure 4.1 Structure of the cashew nut market, organic and conventional



Gross margins
 Agent/Broker 2%
 Importer 3.5-7%
 Packer 15-25%
 Retailer 30-40%

4.2 What buyers want - results of buyers' survey

It is possible to sell cashew nuts using an ad hoc, day-to-day approach, selling a container to an importer 'here', and a speculator 'there'. However, this approach is: risky; does not allow a business to develop in a planned and predictable fashion; often prevents the capture of premiums for premium products; and prevents the building of long term relationships. This approach can have serious repercussions in the event of problems with shipments; it can damage product development and make financing of the business difficult in the long term.

The development of a range of customers, based on long-term relationships and understanding, is the best the way forward. Buyers purchase for many reasons and price may not be the most important. Factors such as interpersonal relationships and liking for a particular country influence buyers, but there are certain basics which cannot be compromised. The nut business still has plenty of opportunity for the development of personal relationships and these can be very valuable in identifying barriers and making clear what is negotiable and what is not.

4.2.1 Rules of behavior

Contractual fidelity: A supplier must provide the product contracted at the time specified, of the quality specified, and at the price specified in the contract. If suppliers are not happy with contracts, they must address the problem as soon as possible. The cashew market has been beset by a series of supplier contract defaults as market prices rose. This was worst in Vietnam, but Indian suppliers also broke contracts. Contract defaults have serious consequences for buyers as they cannot easily reschedule their commitments further down the supply chain - either to food processors or to supermarkets. They will have to buy product to keep them going and may hold the supplier who breaks a contract responsible for any extra costs and associated losses.

In the past, defaults by suppliers (which resulted in claims for financial losses) were followed by buyers retaliating and rejecting shipped goods which they had purchased above the market price. This degenerated into a series of arguments and recriminations as each side sought to recover their losses. The damage to relationships will never be repaired. New suppliers must assess not only their buyer's ability to honor contracts, but also their attitude to disputes and defaults.

The events of 2008 created a good opportunity for a new supplier who can demonstrate willingness to honor contractual commitments. This will only be proven by experience, of course, but buyers are more willing to talk to new suppliers, especially if they are not from India or Vietnam, countries where suppliers recently broke contracts. Reliability is not assured in the cashew business; it is a competitive advantage and commands a price premium.

Sell (and deliver) a quality specification: Develop a specification, adopt an international specification or take the buyer's specification, but be prepared to clearly show the quality of the product that will be shipped.

Pricing policy: Buyers need to know their suppliers' pricing policy. This will help to make a 'commodity' type relationship into a genuine long-term relationship. The buyer needs to have a fixed absolute price for any given purchase, but would also like to know the relative price levels if, for example, the buyer was to increase volume or buy different grades. Pricing policy can inhibit growth or be a growth initiator. Pricing policy should not just be a question of following the commodity market as this will lead to customers switching to a new supplier even for the minimum price difference of a penny a pound. A good relationship on this aspect can reduce the risk of losing a customer when competitors approach them with lower prices.

Product development cooperation: Vendors must be prepared to address new product ideas or initiatives from their customers. If the supplier can bring new initiatives, all the better.

‘Don’t sell to those we don’t know?’: Buyers do not want to see their supplier’s product sold to less reputable buyers in the market. The buyer will have invested time and money working with a supplier and possibly promoting the supplier’s brand. If a supplier needs to dispose of product then this should be done in a market that does not compete with the supplier’s main customers.

Consistency: buyers would like to know where they stand and what to expect.

4.2.2 Quality

EU buyers:

- A 100% reliable organic certification, certified by an acceptable body. Importers of organic product, importing from non-EU countries which are not recognized in Article 11 of the EU Council Regulation 2091/91/EEC must get an individual permit.
- Quality in conformity with international standards such as the AFI Standard or the CEPC (Cashew Export Promotion Council of India) Standard. Individual buyers may have their own specifications.
- Standard cashew packaging – flexi packs, preferably back flushed with gas, 2x11.34 kg net weight in an outer carton, strapped.
- Quality and Aflatoxin-free Certification. A chemical residue certificate may be asked for too.
- HACCP is a minimum requirement, but ISO or BRC certification may be demanded as certification for the processing plant. Suppliers will be able to sell into the market without these certificates, but it is an advantage to have them, and in future they will become a requirement. It is important to bear certification in mind from the beginning of factory construction when, for example, choosing product containers, analyzing contamination within the process, and managing separation of shelling from peeling and grading, etc.
- Traceability – this is a hot issue in Europe. Buyers realize it is difficult to achieve full traceability for cashew nuts, but a supplier who can offer full traceability will have a competitive advantage. Cambodian origin cashews, shelled in Cambodia, will have an advantage over both Vietnam and India’s cashews, where over the season, indigenous cashews are mixed with imported cashews, making traceability much more challenging.

US/Middle East buyers

- Overall, the emphasis on certification is less in the US.
- Quality is every bit as important, but buyers will be more prepared to work with suppliers who may have a genuine problem. If a buyer has experienced quality problems with a supplier, he or she will expect the supplier to make up for this by offering a lower price in future. The buyer will also be more likely to switch to an alternative supplier.
- All production plants must register with the FDA under the Homeland Security Act and must have a US agent who is the first point of contact.

- The correct presentation and formulation of documents can help to avoid detention of cargo for inspection by the FDA or USDA. Detention can be expensive, not only for the cost of the inspection, which must be borne by the buyer/seller, depending on their contract, but also for the cost of demurrage as the container could wait in a queue for some days.

Buyers usually require the following documents:

Commercial invoice
 Original bills of lading and copies
 Certificate of Origin
 Certificate of quality and weight from a first class cargo superintendent
 Aflatoxin Free Certificate in accordance with EU legislation (For EU)
 Phytosanitary Certificate
 Certificate of fumigation for the empty and stuffed container

And sometimes:

Microbiological free certification
 Roast test certificate, attesting to the roast color and characteristics

4.2.3 Product risk

Buyers who effectively put their name to a supplier's product require that the supplier has in place suitable systems to manage the risks associated with production. A product recall or a problem with infestation can quickly undo years of work and call into question a relationship built up over years. Buyers may also require that suppliers have a suitable insurance policy to cover the product risk, although usually a policy covering the goods in transit is enough. It is important to have a suitably accredited and trained cargo superintendent service to certify shipments.

Buyers may require a factory audit prior to purchasing. This will entail the completion of a Supplier Audit Questionnaire or a visit to the supplier by a member of the buyers' quality assurance team to carry out an audit. Audits are usually required by UK buyers and some in Continental Europe. American buyers, with one or two exceptions, tend to prefer testing of individual shipments.

4.2.4 Reputational risk

It is becoming more and more likely that buyers will audit their vendors as part of their corporate social responsibility policy. Buyers will be interested in issues such as labor practices, human rights and environmental impact. This is part of a swing toward genuine corporate social responsibility, but also reflects the value of brands and the possibility that a valuable brand might be damaged by a supplier's behavior e.g. recent television 'exposes' of the garment trade in India.

4.2.5 Negotiable aspects

- Price: Price constitutes about 30% of a buyer's decision.
- Terms of payment: Importers usually pay against presentation documents on collection or by letter of credit. Manufacturers often look for credit terms.
- Delivery times: Postponement/acceleration of deliveries.
- Adapting supply to buyers' need, either in terms of customized grading, packaging or delivery time.

4.2.6 Buyers' wish list

- Product development cooperation.
- Generic product promotion.
- Proprietary market intelligence.
- Support with research and especially health claims.
- Distinctive features of the product.



Chapter 5. Fair-trade Cashew Market

The fair-trade system is about trading as directly as possible with producer organizations and ensuring that all participants comply with fair-trade standards. These standards guarantee fair and sustainable terms of trade for producers in developing countries. (The Fairtrade Foundation, London).

5.1 Markets and consumption

Ethical, natural, organic, healthy, and fair-trade are concepts that have become influential in recent years, not only within the 'aid' or NGO community, but in mainstream business and consumption too. How products are sourced, their environmental impact, and treatment of workers and growers are all issues which have entered the daily thinking and influence decisions of consumers.

Both 'ethical' and 'natural' are highly abused terms, but fair-trade is a well-developed system, with formal structures for the achievement of these objectives, including administrative/promotional bodies in each country, with an independent certification body that is responsible for the implementation of standards and policy. In 2006, fair-trade sales worldwide were estimated at \$2.28 billion.

Fair-trade has experienced dramatic growth rates in recent years. The retail value of worldwide sales grew by 50% from 2006 to 2009, to a total \$3.43 billion. This was limited in its geographical spread, with 91% of sales being in Western Europe and North America.

Table 5.1 Fair-trade sales, all products

Country	\$million 2009	Growth over 2008
US	\$1,063	+7%
UK	\$1,121	+14%
France	\$360	+13%
Switzerland	\$225	+7%
Germany	\$320	+26%
Canada	\$242	+66%
Netherlands	\$107	+41%

Source: OTA

Notable absentees from the list are Japan and the Scandinavian countries, which together account for less than a 4% share of fair-trade sales. In terms of per capita consumption and market penetration, the UK and Switzerland top the list.

The boom in fair-trade has been the result of its move to the mainstream. It has moved from 'world shops' and 'Oxfam' shops to supermarkets. This has been a seismic shift in the fair-trade market, bringing a range of brands in the popular items, and an element of price competition which has, in some cases, damaged the original fair-trades. There are many examples - in the Netherlands, supermarket sales of Fair Trade Original moved up from \$1.25 million in 2006, to \$2.98 million in 2007. British supermarkets have switched to fair-trade bananas and fair-trade coffee, as has almost 4% of the US coffee market. Many supermarkets today will stock a range of fair-trade items, offering their customers an 'ethical' alternative.

Costco, Sams, Trader Joes, Starbucks, and McDonalds are all examples of mainstream companies with fair-trade sales in the US. In Europe, Sainsbury and Tesco in the UK, Albert Heijn and Jumbo in the Netherlands, and Migros in Switzerland, amongst others, all stock fair-trade products.

This change has brought demands for quality, traceability, packaging, and logistical management which were not present previously in the fair-trade sector. It has also strengthened the fair-trade market for mainstream, high volume products such as coffee. The fair-trade importer has lost control over the retail price of the products, with supermarkets adding their usual margins ranging from 25-40%. Given that the bulk of the 'on costs' (transport, packaging, distribution) occur after the first processor has exported the goods, the price received will often look like a small percentage of the retail price. However, growth rates have been spectacular and fair-trade minimum prices remain for the most part above conventional commodity prices. Fair-trade items have flourished, whether or not they are priced above the products supermarkets stock around them (e.g. bananas), and it is not always the case that the fair-trade item is more expensive than the conventional (e.g. coffee).

In the food sector, coffee, tea and bananas are the success stories, with cocoa, rice and vanilla following. Coffee has grown from a 0.2% share of the US market in 2000, to 3.8% in 2007 and a remarkable retail sales figure of \$837 million. For edible nuts, Brazil (Para or Amazonia) nuts, cashew nuts and peanuts are notable, but lesser-volume items.

Today fair-trade products are part of the consumer market stratification – it could even be termed a brand which can be seen throughout the West in supermarkets as well as in ‘world shops’ and charity shops. The spectacular growth in volume has been largely due to this move to the mainstream retail supply chain, and as long as it continues within the certification process, growers and primary processors can benefit.

In summary, fair-trade:

- Is structured within standards and certification processes.
- Is limited to North America and Western Europe.
- Is in the mainstream of retailing.
- Has dramatic sales growth rates.
- Has a modest overall market share.
- Coffee, tea and bananas are the success stories.

5.2 Fair-trade cashew nuts

The import of cashew kernels under fair-trade programs is still in its infancy. There are a number of projects coming on line each year, such as the Indonesian export to the UK for ‘Just Cashews’ and the Duc Phu cooperative delivery to the Netherlands in August 2008. In addition, UK fair-trades are cooperating with a growers’ group in Kerala, India which will be in a position to supply larger quantities.

However, to put the market in perspective, the US import of conventional cashews at retail prices is about twice the value of the entire total of all US imports of fair-trade products (coffee, tea, bananas, fresh fruit, crafts, cotton, etc). This market share is reflected throughout Europe. Fair-trade cashew nuts have a very small share of the cashew market, estimated in the region of 0.5%. This is somewhat surprising, given that edible nuts and the sister product, dried fruit, were at the forefront of the natural food, health food movement which started the 1970s. Many of the larger packers in Europe today started out as market traders 30 years ago. These companies went ‘mainstream’ and it could be said that the fair-trade movement represents a second wave in this sector.

Before going further, it must be pointed out that early in research for this study, the European Fair-trade Association noted that there are no official statistics for fair-trade products. There is no separate import record so the trade must rely on, and are grateful to, the national fair-trade organizations for supplying their own figures or estimates to help get an idea of the market size. In the US, the figures kindly provided for sales of coffee, tea, etc. by Transfair are reliable, but they too have no figures for cashew nuts.

It is fairly clear that imports are growing and growing quickly, but from a very low base. The UK is the market leader for cashew nuts, although there is some activity in each of the main European countries. It does appear, however, that there is a split with organic product being more likely in Germany and the Netherlands, and fair-trade being a stronger brand in the UK and Switzerland.

It is estimated that the European market is small – probably in the range of 350-450 mt of kernels – and 0.5% of total cashew imports. This is for fair-trade certified only, and does not include product imported under ‘ethical’ schemes such as the ‘hand in hand’ program of Rapunzel NaturKost Ag of Germany, which will be discussed later.

This estimate is based on individual discussions with the main fair-trade importers in each country, some of whom had figures to offer and some of whom did not. In many cases, the importers work with producers from non-mainstream supply countries such as Honduras, Sri Lanka, El Salvador, and Burkina Faso, which made it possible to cross check the import figures.

The US is the largest cashew importer in the world. Transfair, the US certifying body, does not have a standard and has not certified any cashew import project as yet. It is difficult to define the ‘fair-trade’ market because fair-trade products shipped to the US probably derive the premium price more from the organic premium than from the fair-trade premium.

There has been growth in fair-trade cashews where the move to mainstream distribution has begun, but it remains underdeveloped. This may be as much due to the limited supply, as to unwillingness on the part of supermarkets to take up the product. In order to view a new product as viable, supermarkets may require a volume which will justify their efforts. This volume is not currently available in the fair-trade channel. This is in part due to the current Fair-trade Standard for cashew nuts.

5.3 Fair-trade standard – cashew nuts

Problems with the fair-trade standard for cashew nuts have been recognized by the fair-trade organizations in Europe. As far back as 2006, the matter was discussed at a meeting of the Fair-trade Federation in the UK. The Max Havelaar organization of the Netherlands was asked to work on the development of a fair-trade standard.

The primary problem is that the fair-trade minimum price, as laid out in the Fair-trade Labelling Standards Organization International ‘Fair-trade Standards for Nuts & Oilseeds’, March 2006, does not allow for the different grades which are inevitably produced as part of the cashew nut shelling process. The prices do not allow for any differentiation between the value of WW320 and Small Pieces, for example. These grades clearly have a very different value in the conventional markets, and clearly have a different value to supermarkets and consumers, as discussed above.

The Fair-trade Federation in London confirmed that the system, as currently set, requires fair-trade importers to pay the same price for all grades. This effectively builds into the cashew sector, a massive premium far beyond the fair-trade premium for other products.

The argument for setting one price is that it costs the same to produce a kg of LWP, as it does to produce a kg of WW320. This is probably true in a small-scale cottage industry setting. However, it does not reward producers who maximize their production of whole grades, as opposed to broken. Furthermore, it does not recognize any value for in-shell cashews which are easier to shell, or for better management practices on the farm which avoid damage, allowing a better outturn of whole nuts.

The concept that the price paid is related to the cost of production is central to fair-trade. The minimum price is set at a level which allows producers to make a fair income and develop a sustainable trade. It is believed that the fair-trade price for cashews has been set too high and that by not taking into account the possible 30 grades of kernels to be produced, the current system is inhibiting the growth of the sector, which can be potentially very successful, as is the case with coffee, tea and cotton, for example.

5.4 The current FLO minimum prices for cashew nuts are as follows:

FLO minimum pricing

Worldwide FOB

Conventional Fair-trade \$3.30 per lb/\$7.27 per kg, plus 10cents/lb

Organic Fair-trade \$3.50 per lb/\$7.72 per kg, plus 10 cents/lb

Table 5.2 Premiums paid for fair-trade cashews in 2009

FOB origin \$ per lb	Market high	Market low	Fair-trade	Minimum Premium %	Max premium %
Cashews WW320	\$3.60/lb	\$2.10/lb	\$3.40/lb	-5%	62%
Cashews LWP	\$2.30/lb	\$1.45/lb	\$3.40/lb	46%	135%

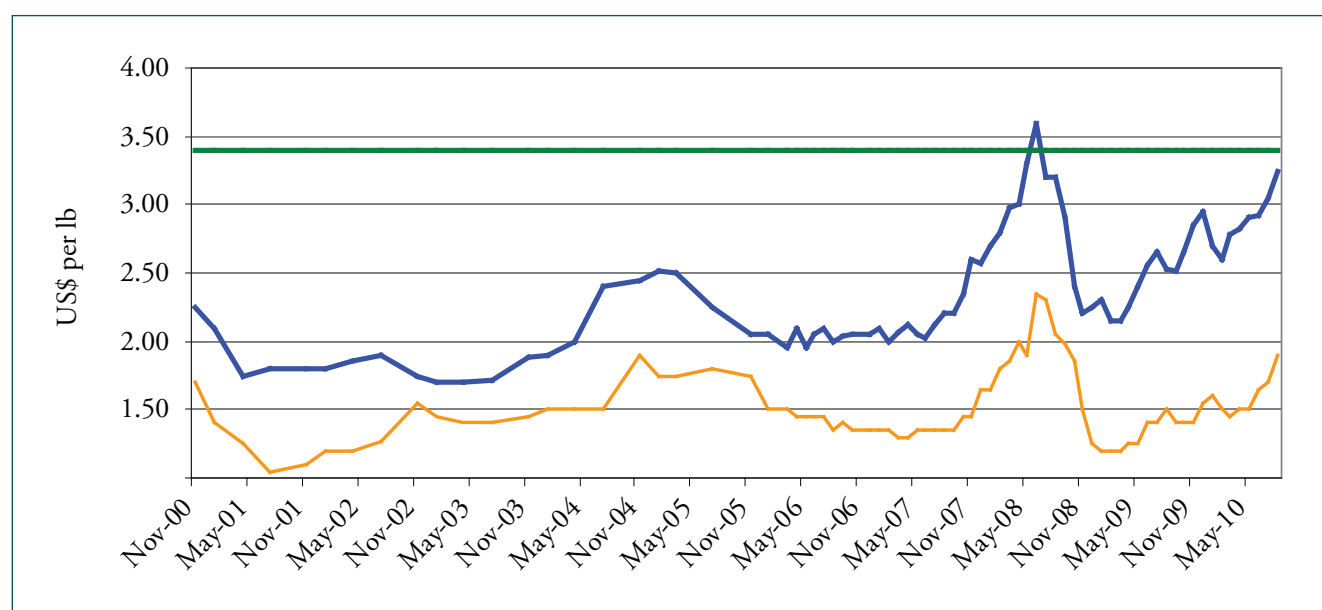
Sources: EFTA, Ingredient Sourcing Solutions, Trade

Table 5.3 Prices paid for fair-trade Amazonia nuts, 2009/2010

FOB Origin	Market high	Market low	Fair-trade	Minimum Premium %	Maximum Premium %
Amazonia nuts per lb	\$2.45/lb	\$2.00/lb	\$1.24	0	0

Sources: Source: EFTA, Ingredient Sourcing Solutions, Trade

Figure 5.1 Fair-trade price vs WW320 & LWP Price



Source: EFTA, Ingredient Sourcing Solutions, Trade

5.5 How does the fair-trade premium compare to the market price over time?

It seems clear that there is an intrinsic problem with the current fair-trade standard which overvalues cashew pieces as opposed to cashew wholes. Fair-trade importers will have to take a serious financial loss on the sale of the broken cashews which they must then recover on the whole grades. This, in turn, makes the whole grades more expensive at a wholesale and retail level, making them less attractive for the consumer and hindering the development of the fair-trade cashew sector.

Thus the price level set for wholes is questionable. For most of the past ten years, cashew prices have been further below the fair-trade price than fair-trade prices set for products such as coffee and tea have been below their fair-trade price. Outside of the fair-trade sector, cashew production has experienced a boom based on the market price. There is a question as to whether the high level of price premium for fair-trade is inhibiting the growth of the fair-trade sector in a way that was not experienced in coffee, for example, which has boomed.

5.6 Developments on fair-trade standards

The Fair-trade Federation and the European Fair-trade Trade Association have indicated that standards are being discussed. They believe that a price for broken will be introduced. One of the difficulties is that the cashew sector is part of a larger project which covers fruit products so it may take some time. For any sizeable enterprise entering the fair-trade-sector, it would be better to know the results of these discussions on changes before committing to join.

Once standards are put in place, fair-trade cashews will grow substantially. If cashews were to experience the same kind of growth that coffee has experienced, the market could be in the region of 15,000 mt of kernels within ten years.

5.7 Fair-trade cashew producers

When one looks at the global spread of the number of fair-trade certified organizations in the producing countries, one finds that 13 of the top 20 countries are in South or Central America. Only four are in Africa and three in Asia. This may be explained, in part, by the success of coffee and handicrafts as fair-trade items, and in part by US support for fair-trade in the Americas.

This geographical spread is reflected in the cashew producers, despite the fact that Central America is not a major cashew producer, and South America has only one substantial producer, Brazil.

It appears that there are few fair-trade cashew projects in the major cashew producing countries. It is not clear why this should be the case, other than perhaps because of the success of fair-trade coffee in the Americas. Importers of fair-trade cashews seem to be working with marginal countries which may be a reason for the slow start in the fair-trade cashew sector.

Fair-trade cashew projects are exporting from:

El Salvador	(2) eg Aprainores
Honduras	(3) eg La Suerenta
Burkina Faso	
Sri Lanka	Dambadeniya Village
Indonesia	Lambusango
India	
Mozambique	
Vietnam	Duc Phu
Brazil	Coopercaju

The Indonesian, Indian and Vietnamese fair-trade sectors are new to the market, with first shipments made only in 2008. The size of the sector is further confirmed looking at the exports of these smaller countries. In 2007, El Salvador exported 214 mt of cashews, of which 183 mt were in-shell to India. The balance is the fair-trade export to Europe and the US. Honduras exported a total of 22 mt of cashew in 2007, down from 84 mt in 2006. The Lambusango project in Indonesia made its first export in 2008 – a 2 mt shipment for ‘Just Cashews’ of the US – however this had to be shipped to the UK because although the project has fair-trade certification, its organic certification had not come through in time. The first shipment from the Duc Phu Cooperative, assisted by MDI, was a small consignment shipped to a broker in the Netherlands in August 2009, however, it is not clear if this was sold within the fair-trade sector. It may have been sold as conventional as the market was above the fair-trade minimum price at the time.

The picture that emerges for fair-trade is of very small enterprises, usually cooperatives, processing on behalf of farmer groups exporting small quantities of shelled cashews. In markets where fair-trade cashews have entered the mainstream such as the UK, the products tend to be exported in bulk and roasted/salted and packed at destination in order to fulfill the quality requirements of supermarkets.

In markets where the product has not entered the mainstream, the cashews tend to be roasted at origin and retail packed for direct distribution. It appears that this trade has more in common with the handicrafts trade than it has with the food business. Fair-trade cashew producers are split between the handicraft type producer, and the food producer.

There is little evidence that a genuine food producer type, fair-trade organization exists in the market. If such an entrant, fair-trade certified as well as HACCP or BRC certified, were to offer fair-trade cashews in bulk or first class consumer packs from a quality manufacturing establishment, it seems likely that they would be supported by importers or retailers.

5.8 Fair-trade markets

5.8.1 United Kingdom

The UK market is by far the most developed of the fair-trade markets for cashews. The product has entered the mainstream and is growing. However, it still has only a small market share in the region of 0.5%. The past year has seen significant growth, and over the past five years, the market has increased from 5 to 120 mt. This growth has been driven by the entry of fair-trade cashews into the mainstream. The UK has a significant market for fair-trade products such as coffee, bananas and tea. Some 80% of fair-trade and organic products are marketed through the supermarket chains, often in their own branded packs. In effect, fair-trade has been taken up as a ‘brand’ by UK supermarkets and is seen as much easier to brand than concepts such as ‘natural’ or ‘healthy’.

Table 5.4 UK fair trade imports in tonnes

UK	2004	2005	2006	2007	2008	2009 est
Imports	5	15	30	57	130	150

Last year Sainsbury, the major supermarket chain, decided to convert their cashews sold in the produce department to fair-trade, giving a significant boost to demand. The surplus referred to earlier would seem to have been taken up by this.

The import sector in the UK is consolidated. There are many marketers of fair-trade cashews, but these are primarily sourced through a few import organizations which often cooperate together. In effect, the fair-trade nuts 'community' is very small, although growing.

Cashew pieces remain a problem. Twin Trading/Liberation Nuts, the only exclusively fair-trade nut company stated that the pieces are sold into the conventional market and 'we just take the loss'. The change in standard might well change this, but it would not of itself create a market for cashew pieces.

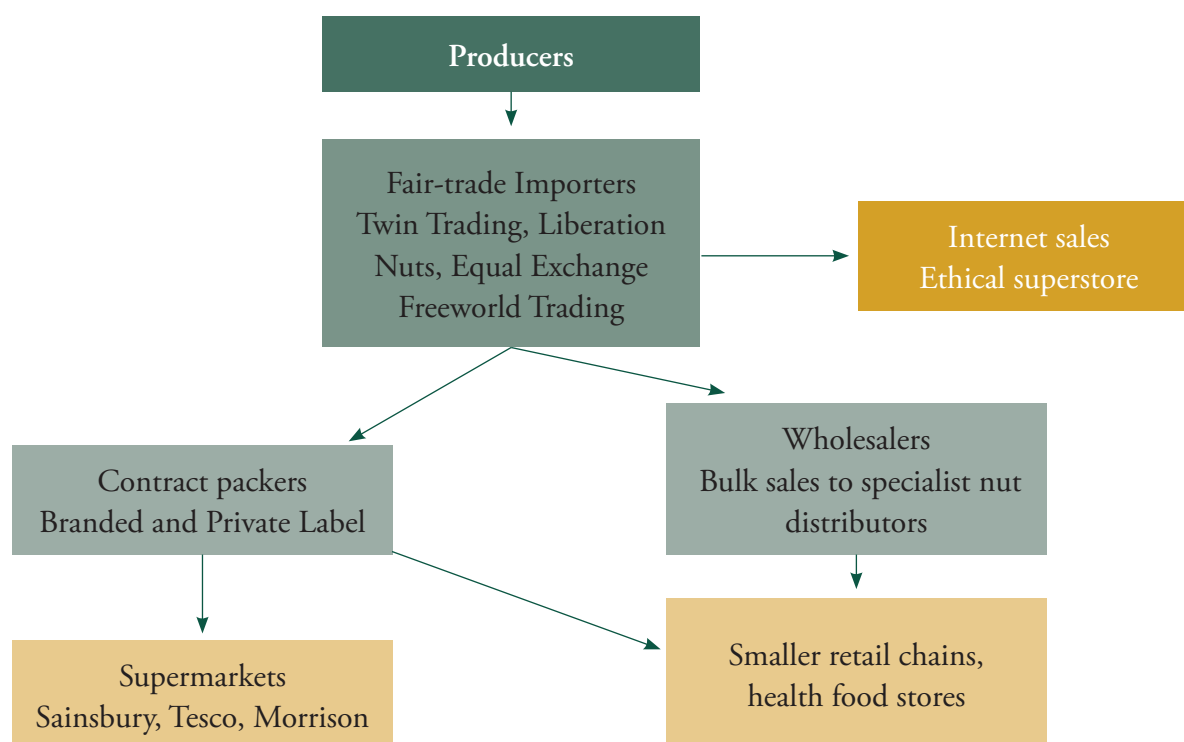
The vast bulk of fair-trade cashew nuts offered in the UK are roasted and salted whole nuts. These are mainly WW320, although some WW240 are offered. Some brands also offer large pieces which are used for mixes and cooking. There is some evidence of food ingredient usage in the UK. Cashew Butter is offered by Bioan Cashew Butter and cashews are included as ingredients in energy bars.

As mentioned already, UK supermarkets are interested in promoting fair-trade products. Sainsbury, Morrison's, Tesco, Marks & Spencer, and Safeway all confirmed that they offer fair-trade cashew nuts. The range is narrow, however. For example, Sainsbury offers five fair-trade nut packs out of a total range of 127 items. One of the five is in the produce department, which is a significant sector. In general, the supermarkets are buying packed nuts from the importer who arranges roasting and packing by an independent company.

Independent retailers such as Spar are supplied by distributors who often import conventional and organic products themselves, but buy fair-trade from the fair-traders. Examples of such companies are Sun Cottage, Tropical Wholefoods, Suma Foods, and Community Foods.

There is no evidence that the traditional UK nut importers have taken any interest in fair-trade, unlike organic, which they see as an alternative product line.

Figure 5.2 Fair-trade supply chain



Source: *Ingredient Sourcing Solutions*

UK Companies contacted:

Liberation Foods/Traidcraft: Has partnerships in Africa and newly in India (Fair Trade Kerala Alliance) for cashew nuts. Importing WW320 and WW240 grades, as well as pieces, although pieces are difficult to sell. They have outlets for newly-launched cashew butter, which will absorb pieces (they hope!) They have been innovative with cashews, producing mixes of nuts, including a Peanut/Cashew mix which is salted or chili flavored. The products are sold in Waitrose and Sainsbury. They source from Mozambique and India. They are very positive on fair-trade and interested in new projects.

Twin Trading: Twin trading is a partner in Liberation but has a much more negative outlook. They have two suppliers and do not need any more. They have to sell the pieces and broken in the commodity market and take the loss. There is, in fact, no market for pieces. They have made inroads with the big supermarkets and have seen a growth in demand. They have no information on the total imports to the UK, and agree that there is little in the way of fair-trade business for cashews on the continent. There are some imports of packed product from Germany – Gepa may be the supplier. They have LWP and SWP available as broken. They feel that it would be very challenging to attempt to market 500 mt of fair-trade cashews in Europe. Organic certification would help, but it would still be difficult.

Fairtrade Foundation: Numbers and standards are discussed elsewhere.

Equal Exchange: Partners with Liberation in India. They have their own line of cashew products – fair-trade and organic. They import from El Salvador under the Montecristo brand which is a small seasonal co-op which produces cashew kernels, and a packed cashew butter which uses the broken and pieces.

Suma Products: Wholesaler for a range of food ingredients. Cashews are a small item. They buy from Equal Exchange.

Essential Trading: Importer/cooperative, offering a range of fair-trade and organic ingredients. They are currently buying from other importers, but would be interested in developing a partnership with a direct supplier. Turnover is £12-20 million and they carry 6,000 lines, including a full range of nuts. They do not import cashew nuts but work with the importers, including fair-trade importers.

Freeworld Trading: They have been involved in the fair-trade and organic sector for 3-4 years. The market has grown and they are satisfied with their development. In 2008, they found a slowdown in fair-trade sales and growth in organic. In 2009, they found that sales in both ethical sectors held steady. They believe that it would be difficult to place 500 mt in the UK fair-trade market, and that the organic market offers a better alternative. UK premiums are in the range 20-25% for certified product. All suppliers must have HACCP certification as a minimum. They would prefer to have ISO certification.

R.M.Curtis: Major supplier to the catering trade as well as producing their own cereal bar. Surprisingly, they have no interest in organic product. They say the demand is mainly from supermarkets and that the catering trade is not interested in paying the premium for organic or fair-trade products. They have been helpful and have supplied quality documentation.

The Co-op: A major retail chain. They have their own responsible trade policy and are interested in fair-trade items. They pride themselves in having a wide range of this sort of item as part of their corporate social responsibility. They are the only supermarket chain actually importing responsibly-sourced products.

Oxfam Fairtrade: They have some projects on nuts (walnuts for example). They are sourcing their cashews from Honduras via Gepa in Germany. They also buy products from other fair-trade importers like Traidcraft, for example.

Infinity Foods: SE UK Wholesaler. A large range of products, but they are primarily interested in buying from importers.

5.8.2 Germany

The German ethical market appears to be small in size, although German consumption of conventional cashews is the highest among European countries. German supermarkets have not taken up cashews as a product in the organic or fair-trade sector. Germany uses some cashews as food ingredients and this means there is a market for broken and pieces which are a major problem elsewhere. Stephan Beck of Gepa stated that they were importing from small projects in Sri Lanka, Honduras and Burkina Faso. Some of these are not Flo certified as yet.

German companies contacted:

Rapunzel AG: A buyer of 400 mt of organic cashews per year. Presently they have partners in India (Aachal Industries) and Tanzania. They are interested in working with new suppliers, either as organic or within their ethical sourcing 'hand in hand' program. They are interested in buying broken grades LWP, SWP etc. for industrial use. They are primarily interested in organic.

Gepa: Largest fair-trade organization in Europe and a buyer of fair-trade or 'ethically sourced' cashews. Interested in talking to new suppliers of fair-trade cashews. The Honduran import is of roasted and salted material in a 100 g pack.

DWP Mensch & Zukunft eG: A smaller organization, currently importing fair-trade cashews from Mozambique. They are interested both in organic and fair-trade product.

5.8.3 Switzerland

The market does not show great potential on first look. It is relatively small and although fair-trade, has a high penetration of products such as coffee. Cashew nuts do not seem to be as likely to sell in any great volume. Comments in the last annual report of Claro, the fair-trade company, are worth noting. Growth in their sales was a healthy 146% but this was largely accounted for by export sales, and chocolate, in particular. The annual report states that the traditional food products, coffee, tea and cocoa were stagnant, with overall growth in the fair-trade market in Switzerland at 1.2%. Switzerland has a very high level of fair-trade penetration. The fair-trade food sector has achieved 0.33% of the market, but this is regarded by Claro as a saturated market.

A look at fair-trade coffee imports confirms that market growth is not present in Switzerland. Imports have risen by less than 2% in each of the last three years.

Table 5.5 Swiss fair-trade dried fruit and nut imports

Year	Tonnes	Comment
2002	13	Covers import of cashews
2003	23	Brazil nuts, dried mango
2004	18	Dried pineapple
2005	17	
2006	41	56% of the import was organic
2007	97	
2008	90	
2009	92	Nuts and dried fruits

Source: Max Havelaar, Swiss

The total import has grown more than seven times in six years, but the market remains very small. Compared to a product like fair-trade honey which has only doubled since 1994 to a total 422 mt, nut sales do show more encouraging growth. There are sales through supermarket chains and through a network of 'World shops'.

Swiss companies contacted:

Claro fair trade: They would be interested in discussing cooperation, but volumes of cashews are small. They are currently working in Mozambique. They have been very successful but find the Swiss market crowded and their export business is becoming more important. They are working with Coopercaju in Brazil.

Gebana: Sales of Sri Lankan, origin-packed cashews

Max Havelaar

5.8.4 Netherlands and Belgium

With high consumption of edible nuts, this area acts as a distribution centre for much of Europe on a range of products. In volume terms, the market appears to be more interested in organic certified product than in fair trade at this time, although fair-trade activities exist. The market has a number of specialist importers but conventional importers are also present and treat organic as a premium product line. Fair-trade is present but less so than in the UK or Switzerland.

Sales do seem to be beginning to break through into the supermarket mainstream. Fair Trade Original, the marketing organization, reports that sales to supermarkets grew to \$2.98 million in 2007, more than double the previous year. Fair-trade Original brands are available in supermarkets, having been taken up by 'Jumbo'. However, there is some suggestion that the entry of the big brands into the 'ethical' sector has caused more price competition and may have damaged the position of the original fair-traders. This will not apply directly to edible nuts. Ahold, the retailer which owns Albert Heijn, among others, has entered the sector and improved the sales by modifying their approach. This is a sign that fair-trade is entering the mainstream in the Netherlands and this bodes well for sales.

Sales of organic and fair-trade items face stiff price competition in the Dutch market.

Dutch and Belgian companies contacted:

Tradin Organic: A large trader of organic products as ingredients for industrial users. They have their own social project farms. They also have a project in Vietnam which is developing organic cashew nuts. They would be interested primarily in whole nuts. They provided some price information that is quoted elsewhere in this report. They are receptive to the idea of working with new partners in Cambodia.

Catz International: One of the largest importers of cashew nuts in Europe – primarily conventional material. They hear that the organic cashew sector is growing quickly, but have not found this themselves. They have an organic project and are not interested in making any further commitments.

Doit: The sales and purchasing departments assisted with questions on the general market. They are a large supplier to the bakery and food processing industries. They buy mainly whole cashews but a few small pieces and large white pieces. The managing director expressed enthusiastic interest in working with a supplier of whole organic cashews for the Dutch market. It looks as if a major Dutch supermarket is about to move into organic snack products which could mark a massive development for the organic cashew business in Europe.

Global Trading & Agency: A trader/broker is representing the Zambique brand from Mozambique. They have two problems: 1) Getting their operation in Mozambique fair-trade certified. Although they believe that they have fulfilled the requirements, there has been inordinate delay; 2) They sell broken cashews (conventional). They are not a likely partner as they are fully committed in Africa, but are an interesting contact. They say they have imported small quantities of Vietnamese cashews that are fair-trade certified. This appears to have been successful due to the very high market prices ruling at the time.

European Fair Trade Association: General discussion on the statistics and position in the market.

Fair Trade original /Max Havelaar: Discussed above.

5.8.5 France

France is a major fair trade country with 10% of the global sales. Max Havelaar France indicated that they have a range of 175 types of fair-trade categories, with 1941 products, and sales value of \$273 million per year. This has been rising quickly – they had a range of only 74 items in 2004 and 113 in 2005, rising to 175 in 2007. Fair-trade products are available through a range of specialized stores, major supermarkets, and over the Internet. Fair-trade is certainly ‘mainstream’ in France, with a 7% share of the coffee market giving a good indication. A number of organizations have Internet sales operations too.

France, however, is a low consumption country for cashew nuts. Imports are just under 7,000 mt, or one twelfth of the UK annual total, for example. Fair-trade cashew demand is likely to be small, but there are some good signs.

French companies contacted:

Max Havelaar/Fair-trade Original: See above in the Netherlands section.

Solidar Monde: Fair-trade importer with a wide range of products marketed through the Biocoop and Artisan du Monde range of specialist shops. They import cashews from Honduras but the volume is low, rising from 1.9 mt in 2002 to 9.4 mt in 2005, and declining back to 5 mt again in 2008.

Menguys: Nicolas Cormeuil. Menguys is a family business dealing with edible nuts and dried fruit. The company supplies supermarkets throughout France. They have started importing from the Fair Trade Kerala Alliance, a group which processes spices, cashews, tea and other products in Kerala, India. Menguys speaks highly of the quality received. Menguys is a fairly large user of cashews and could be a potential partner.

The Kerala Cashew Alliance product is also marketed by AlterECo France, an offshoot of the American organization. The Kerala Alliance has received support from Traidcraft and Equal Exchange in the UK.

The French market too is interesting in that there are a number of diversifications – cashew & raisin chocolate from Alter Eco, honey and cashew or cocoa and cashew biscuits made in France and Italy, respectively, but fair-trade, using cashews from Honduras. There is also a range of cereal and nut bars made in France and marketed under the Oxfam name.

Prices R&S 125 g €2.60

5.8.6 Italy

Table 5.6 Italian fair-trade cashew kernel imports in tonnes

Country	2004	2005	2006	2008 est	2009 est
Italy	1	15	20	15	15

Source: FLO Trade

The Italian market for fair-trade products is healthy and growing. However, as the figures show, imports of cashew nuts are small. The Italian market would not be a major consumer of cashews even in conventional form, so one should not expect major growth on the fair-trade side.

Italian companies contacted:

Altromercato: They have cashews coming in from Brazil, but in small volumes.

5.8.7 Sweden/Norway/Denmark/Finland

Scandinavia is a very small market for nuts. Fair-trade cashews are available from Sackeus, but these are purchased from Traidcraft, UK or Oxfam.

Scandinavian companies contacted: Sackeus

5.8.8 The rest of Europe

The other countries of Europe all have some sort of fair-trade organization and could be markets in the long run, but are so small in ‘cashew’ volume terms for now, that they would be of no interest for the purposes of this study.

5.8.9 United States

The US is the world's largest market for fair-trade products. Major volumes of a number of food items have crossed into the mainstream in recent years. Growth rates are high and the ranges are stocked by supermarkets and specialist retailers alike.

Transfair, the US certifying body reported that they have not certified any cashew projects as yet, and are not aware of any US demand for cashew certification. The Fairtrade Federation was unable to offer any information on the position of fair-trade imports to the US.

There are imports of fair-trade cashews to the US, but these are imported not as a result of their fair-trade status, but due to their organic status. It seems that although mainstream supermarkets have taken up organic nuts, they have not yet taken up fair-trade nuts. The reason is fairly clear. The US is a market for approximately 125,000 mt of cashew nuts each year. It is diverse and presents logistical challenges. The consultant who undertook this study estimates that the world's entire fair-trade cashew production would not cover 1% of the US conventional cashew market. It would not be viable for US retailers to take up such a small item. In addition, the US is a major producer of edible nuts and therefore buyers are not dealing with importers.

There are, however, some substantial fair-trade companies in the US who could be partners. The problem is that without availability of significant volume, supermarkets will not accept fair-trade cashews, and without the supermarkets, there is no incentive for growers/importers to produce such volume. The volume may not arise until a major US buyer takes up the idea of fair-trade cashew nuts, despite the risk.

Just Cashews is a small, charitable organization importing cashews from Honduras. The volumes are small but limited by supply, rather than demand. They do import fair-trade cashews but the fair-trade aspect is academic. Their interest, and that of their customers, is in organic product.

US companies and associations contacted:

Transfair: Certifying body

Fair Trade Federation: Association

International Commodity Trading: Commodity broker

J.B.SanFilippo & Sons: Major packer

Alter Eco: Fair-trade

'Just Cashews': Nut importer

5.8.10 Japan

Contact was made with Global Village and attempted with a couple of other companies that may have an interest in fair-trade nuts. There is no indication of any market for fair-trade cashews in Japan at this time. The buyers are traditional and usage is primarily for snack food.

5.8.11 Australia

During the study it was not possible to contact an importer or supplier of fair-trade cashews in Australia. There is a fair-trade movement in Australia and the country is a reasonably large importer, with increasing fair-trade sales in recent years. Thus it could be a suitable market in the future.

Alter Eco may be a suitable candidate to approach in Australia.



Chapter 6. Organic Cashew Market

6.1 Evolution of the organic cashew market

The development of the organic food market is a story stretching back to the 1960s when demand first emerged for sustainable agricultural products grown without the use of agro chemicals. 'Organic' is not a characteristic of the product, but a method of production. The market started to move into the mainstream in the 1990s and today trade is close to \$30 billion worldwide, and still growing. The Organic Trade Association of the US anticipates growth rates of 18% per year until 2010.

The organic food market is a small but growing sector of the food market (approximately 3%), but it is more than a niche market. Over the past decade, the land under organic production has risen from 5 to 31 million ha, in 120 countries. Whereas in the past organic products could only be found in health food or specialist stores, today they have moved into the mainstream and can be found in supermarkets throughout the world. In the US, almost 40% of organic sales are through mainstream supermarkets. Organic food production is big business, especially for fresh food such as fruit and vegetables, but also for a range of dried foods and food ingredients, as well as dairy and meat.

The main markets for organic foods are Europe, the US and Japan. Rising demand has come from the rising desire for healthy eating, and to a lesser extent, rising concern for the environment. Today governments and corporations are beginning to see the advantages of organic food production and in many cases, aid agencies and NGOs have seen the opportunity to develop agriculture in less developed countries via the organic model. However, they have not yet taken it up in any meaningful way.

In recent years, the idea of a healthy lifestyle and natural food has grown both in North America and Europe due to genuine health concerns, and corporations' use of these concepts as marketing tools. There is no certification process or other requirement for use of terms such as 'natural', 'healthy' or 'whole food', so as consumers become more aware of their food consumption, they look for substantiation of producers' claims. Organic certification is one of the few claims which can be verified independently by one of the many agencies that certify organic production.

Organic food consumers are willing to pay a premium for certified organic foods. Growers receive a premium for their product, and it is likely that throughout the supply chain, each player makes a better margin on an organic product than on conventional ones. Many companies have joined the organic 'band wagon', increasing the profile and demand for organic products. This move to the 'mainstream' is illustrated by increasing interest from supermarkets, the takeover of organic manufacturers by multi-nationals, and the development of organic products by some of the large food companies.

There are a wide range of organic certification bodies, and governments have legislation in place covering organic food production and trade. The necessity for strict checks and certification measures has increased in recent years, as the global trend toward organic food has created unprecedented demand. Concerns have been voiced too about the future of organic production. If the market becomes a mass market, then sustainable methods and environmentally responsible policies must be adapted to support large volume production. For example, questions such as how to monitor organic and non-organic production from the same farm need to be addressed.

It is essential that any venture into organic exports is fully and properly certified, in conformity with legislation of the destination country, as well as the country of origin. Producers and processors need be able to demonstrate 'one step back' traceability through the sourcing and production line back to the grower.

Within the nuts business, organic production is becoming increasingly more important. However, as often observed, edible nuts are a small part of the overall food business. The entry into organic production and marketing has been late and disjointed. Considerable strides have been made, with large-scale operations now functioning. Organic almonds from California are available and have become an important niche market. Giuseppe Calcagni of Besana, Italy, reports that Italian organic hazelnut production will rise to 20,000 mt in the next five years – 15% of national production. Organic pistachios, Amazonas, peanuts, raisins, pine nuts, and macadamia nuts are also to be found in European retail outlets. Many of the organic nuts on sale in Europe are produced in Europe, primarily in the Mediterranean countries. Imports of organic nuts from outside the EU are small, with the exception of Californian almonds. European producers report that prices for organic nuts are about 20-30% higher than conventional nuts.

According to the Italian market leader in production of organic almonds, Fratelli Damiano Co., the premium for organic nuts is a result of the lower yield under organic practices and fertilization, the cost of certification, and of processing without chemicals. It is also a function of the fast development of organic production, which in many cases, has led to supply/demand problems and mis-matches. Generally, the problem has been lack of supply, not of demand. In recent years, acute shortages have arisen on items such as organic vanilla and organic milk.

Buyers, and especially supermarkets, become wary of promoting a product which, if successful, may be insufficient to supply their needs. Producers, encouraged by growing demand, increase production to a point where the market is unable to absorb the volume produced, and the product is finally sold in the conventional market without the organic premium. This is to be expected in the early days of development of a new product or brand. It is especially so for products which deteriorate quickly.

Whereas organic and non-organic production is often seen side by side, but separated on the same farm, the structure of the trade is far more exclusive. There are a number of specialized organic food importers to be found in each country. They may cover a wide range of fresh and dried foods as well as food ingredients. Specialized nut importers may have some involvement in organic food stuffs but it is often customer driven, rather than mission driven. In some cases specialist organic importers will work with or buy from an edible nut importer but the 'organic' responsibility usually lies with the organic company.

The requirements in terms of quality, logistics, packing, and reliability are the same for organic as for conventional product. Therefore, the organic producer will always have the safety net of the conventional market regardless of developments in the organic sector.

Unlike fresh fruit, vegetables, meat, and coffee which have shown rapid growth rates in the organic sector, organic cashews have not as yet been taken up by supermarkets across Europe as an organic line. However, there are signs of substantial change with four of the big five UK supermarkets now offering organic lines and the major German discounters offering organic nuts (although not cashews as yet).

Previously, major buyers were reluctant to promote organic cashews because:

- Supply is often seen as erratic and unreliable.
- Small quantities are often offered, making logistics and management difficult.
- Quality is perceived as unreliable.
- In some markets (e.g. the Netherlands) the consumer is not willing to pay the premium price. This may be due to the fact that edible nuts are seen as 'healthy' anyway and are, of course, expensive.

All of these problems have been overcome in the fresh fruit and vegetable markets where European organic consumption continues to grow at a fast rate (last quoted as 23% per year). The organic cashew industry must reach a critical mass so that buyers can be confident that if they successfully promote a retail item, it will be available in increasing volumes as their requirement grows.

Overall, the outlook for organic foods is good. Consumers are prepared to pay the premiums, large retailers are supporting the development, and the traditional 'health and whole food' sector is still playing an important role.

The European market for organic cashews is dominated by Germany, the Netherlands, France and the UK. Between them, these four account for 75% of sales of organic cashews, just as they do for conventional cashew nuts.

The organic market remains a small but growing sector. There is no authoritative figure on the size of the market as customs authorities do not distinguish organic from conventional imports. However, a compilation of trade estimates put the market in the range of 2,000-2,500 mt per year. This suggests that organic cashews are in the range of 3-3.5% of the total import.

It has been difficult to obtain an estimate of the US market size. The most informed opinions estimate the market in the range of 3,000 mt per year. This suggests that organic cashews are in the range of 3-3.5% of total cashew imports – a market roughly in line with the overall organic market share.

With imports to other markets negligible, the world market is estimated to be approximately 5,250 mt per year or about 2% of the world import trade. Stakeholders' comments indicate that growth will continue in the range of 10% per year. In some areas, growth is dramatic, doubling annually, albeit from a low base.

6.2 Organic cashew production

The growth in organic cashews in recent times has been facilitated by a growing supply. Like a number of products grown in Africa and Asia, cashews are organic by 'default' in that the natural evolution of cashew production did not require, and farmers could not afford, agro chemicals.

It is estimated that 70% of world cashew production is organic, but only a tiny fraction of that is certified. The area which remains organic by default is declining as chemicals and fertilizers are introduced. Reasons for the lack of organically-certified cashews differ from one producing country to another, and include the following:

6.2.1 Brazil

Chemical fertilizer is widely used and organic production would not be viable on large plantations. There are some organic plantations and small growers in Brazil which export product. During the study, larger factories such as Iracema indicated that organic did not make sense for them. They used to shell organic but changing the factory from conventional to organic for certain periods of the year was not economically feasible. Organic production in Brazil will remain an activity for smaller shellers.

6.2.2 India

- While most of the production is, as previously mentioned, organic by default, there is little in the way of organic certified growing or shelling. The Indian government only initiated the National Programme for Organic Production in 2000. A year later, an accreditation body was set up which appointed four commodity boards as accreditation agencies. So far, only one of these bodies has invited accreditation applications. Furthermore, there is no system in place for domestic product. Accreditation by foreign companies is expensive and while there has been growth in organic activity, it is small relative to the size of the country.
- Cashews have traditionally been a low yielding crop. In India, yield averages 800 kg per hectare. Emphasis has been on increasing production, both by additional planting, and improvements on yield for existing trees on conventional land. A move to organic production may be seen as reducing yield for an unproven market. Indeed a farmer who could improve production from the lowly average of 800 kg per year, to the very achievable 1,000 kg per year, could improve farm income by IRS7,000/\$175, which is significant in a country with per capita income of \$730 (2009 Central Statistics Office of India). The usage of agro chemicals has grown significantly in recent years to improve yield.
- The domestic market takes approximately 40% of India's shelled cashews, but has no demand for organic product.

- Indian cashew factories shell 550,000 to 585,000 mt of imported cashew nuts each year. This product is imported from as far afield as Guinea Bissau, Indonesia and Madagascar. It would be impossible to shell this product within an organic certified framework. To do so would mean that Indian shellers would have to take responsibility for certification of growers in Africa. This would have to be handled back up through the supply chain, and the supplier could change customer at any time, despite the buyer's investment in certification and branding.
- Without a domestic body to certify, organic production is an expensive operation.
- Indian cashew shellers have historically been investment shy. They are now faced with rising labor costs and are likely to be forced to invest in more technology in their factories. As a result, they are unlikely to be interested in investing in organic production.
- A check on the availability of organic cashews from India shows that there are four producers: Achal Industries, Krishnan Cashew, Ajanta, and Zantye Cashew. Achal produces 100 mt per year and is tied to European importers for their sales. Zyntyte is also committed to an importer. Ajanta Cashew has organic cashews to sell.

6.2.3 Vietnam

A quotation from an ITC report sets the scene:

- “According to IFOAM & FiBL (2006), in Vietnam, there are 6,475 ha of land under organic management. There are currently 1,022 organic farms registered in Vietnam. In Vietnam, the use of chemical fertilizer has increased dramatically since 1980. Government policies have favored the use of chemical fertilizers, with the goal of promoting food security in the country. Organic agriculture is limited in the country, and there is no official government program supporting the sector. Organic agriculture is at its initial phase, and efforts for simplifying organic certification in the country are underway. The organic products are mainly rice, tea, maize, wheat, legumes, and shrimps. There is no evidence of a domestic market for organic products, and production is mainly exported.”
- According to Mr Vu Thai Son, an independent broker and responsible for export promotion with VINACAS, the Vietnamese cashew shellers association, there are no organic cashews available in the market and there is no body to certify organic production.
- There are some projects in Vietnam which produce organic cashews in small quantities. Tradein, the European organic trader is operating an organic sourcing operation in Vietnam. The product is fully certified and the factory holds a HACCP certification. Jorn van den Dop at Tradein, in Amsterdam, spoke of the Vietnam project but expressed an interest in additional supplies. Some American buyers are also sourcing organic product in Vietnam, again in small volumes, but reputed to be of good quality.

6.2.4 East Africa

- Developments in Tanzania have been positive for organic cashew production.
- Olam International and Premier Cashew both have shelling plants with organic capacity.
- In November 2008, Olam was in a position to offer WW320 and LWP, with organic certification, at prices 35% and 70% over conventional cashews. Olam is regarded as a reliable packer in the industry.
- Premier Cashew has a capacity of about 6,000 mt in-shell. It was established with EPOPA (Export Project for Organic Products from Africa) assistance. It is not clear what proportion of production is organic certified.
- There is no export of organic cashews from Mozambique as yet. Africa Cashew Development, a Dutch investor/developer, indicated during the study that a project is under development, but it is far from ready.

6.2.5 Organic cashew production from other origins

Outside of the main countries, organic production is small scale. Co-ops include Apriones in Honduras and Coopercaju in Brazil. The Swisscontact project on Flores Island, Indonesia, produces 450-500 mt in-shell per year, but with no local shelling opportunities. For a number of reasons, much of this product is sold into the conventional market and the premium forsaken. In Indonesia, the premium for in-shell organic cashews can vary from 20% to 35%.

6.3 Supply/demand balance for organic cashews

Based on interviews conducted for this study, estimates of world demand, and a survey of producers, it appears that the market is in a 'short', to 'stretched', position. Ironically, although most of the world's production is organic, it seems unlikely that it will be certified as such, despite growing demand. It is more likely that agro chemicals will be introduced to meet demand for conventional cashews. In this scenario, it seems likely that in future, the organic market will experience more shortages than previously seen. This could be positive as well as negative. On the one hand it could allow top prices to be made for existing production, while on the other hand, it could discourage further expansion by the retailers.

6.4 Overview of European market for organic cashews

European imports of all cashew nuts have risen sharply in recent years. This is likely to continue with development in the new EU accession states, and later in the rest of Eastern Europe and Russia. The following is a summary of the comments made by buyers interviewed in the Netherlands, Germany, the UK, and Switzerland.

The European market for organic cashews (called biologic or bio in some European countries) is dominated by Germany and the UK. The Netherlands and France also import, and these four account for 75% of sales of organic cashews, just as they do for conventional cashew nuts. Switzerland is also an important, although small, market. The markets of the Mediterranean and Eastern Europe are showing signs of growth both in edible

nuts as a whole, and in organic products, but they still remain small. Scandinavia has a well developed organic market, but edible nut consumption is low per capita, and growth is sluggish.

In recent years, there has been major development of supply sources. India, Vietnam, Tanzania, Brazil, Honduras, and Burkina Faso have all commenced export to Europe. A wide variation in quality is reported, with accounts of poor quality from Burkina Faso, and good quality from Vietnam and some of the Indian exporters such as Aachal Industries in Kerala. Growth in the organic sector is predicted to continue and from time to time serious shortages of product will arise. It is rare for there to be a surplus of organic cashews in the marketplace.

If a supplier of cashew nuts can offer a sustainable quantity and of suitable quality, it seems likely that the supplier will find import partners willing to cooperate on a long-term basis.

6.4.1 Germany

The organic food market in Germany is the most developed in Europe, with sales of approximately \$4 billion per year, about a 3% market share. Originally stocked by Tegut, organic products have now reached the broad range of supermarkets, including the discounters Aldi and Lidl. However, it appears that there is now a somewhat disjointed organic food market in Germany, perhaps due to a conflict between the traditional specialist retailers and the mass marketers.

The edible nut market is served by a range of importers. Some specialize in dealing with the multiples (major retailers), e.g. Rapunzel and others, which operate primarily through the health food, whole food, and bio shops. Hamburg is the main port of entry, and a number of edible nut/dried fruit importers are based there. The Hamburger Waren Verein is the trade association of the German industry for dried fruit, nuts, and honey, among other items. In recent years, they have taken steps to ensure harmonization of import regulations for organic products. They will also facilitate an arbitration service for dispute resolution. This demonstrates that the organic trade is moving more to the mainstream in Germany.

The German market has developed uses for cashews in chocolate, biscuits and other products, which means that there is a demand for pieces and broken that may be absent elsewhere. It is an important market and should be part of any marketing strategy.

There are a number of importers which specialize in organic dried fruit and nuts – Rapunzel, Farmgold, Ernst Georg Gock, InterNaturales, Horst Wahlburg, and Zwecker & Co.

6.4.2 United Kingdom

The UK is the largest European market for savory snacks. It is a very import market for cashew nuts, importing approximately 85,000 mt per year, and experiencing steady growth. Although not as large as the German market for organic produce, the UK is experiencing more dynamic growth. This is primarily because the supermarket chains took up organic products early in the cycle. Some 80% of organic foods are sold through the large supermarkets,

with a total value of \$3.5 billion. The snack market, and the whole foods market combined, account for about 2% of organic sales and cover a wide range of products, including cashew nuts.

The fast development in the UK market has meant that the structure of the trade is not as clear as in Germany. There are many types of organizations involved such as fair-trade organizations, ingredients companies, charities, and aid organizations, as well as some of the traditional edible nut importers.

The supermarkets, possibly with the exception of Co-op, are not interested in dealing with producers unless the volumes are large and finished products. However, a range of organic products can be found throughout British supermarkets (see retail listings below for a sample of the products and prices).

6.4.3 Netherlands

Despite its high consumption of edible nuts and the fact that it acts as a distribution centre for much of the rest of Europe, it seems unlikely to be an important consumer of organic cashews. However, it will continue to be the centre of trade for logistical and cultural reasons.

Following an upsurge of interest in organic edible nuts from supermarkets (in particular Albert Heijn), the market for organic snack nuts has stopped growing. Dutch consumers in general, who are great lovers of roasted snack nuts, have not taken to the premium organic nuts with any enthusiasm. As a result, the consumption of organic nuts has dropped away. It is difficult to explain this as Dutch consumers have taken to other organic products. Perhaps the prices of organic cashew nuts were just too high or organic cashews were introduced at a time when conventional cashew nut prices were low due to the price war between Dutch supermarkets.

However, the Netherlands is important as a centre of trade. The market has a number of specialist importers, but conventional importers are also present and treat organic as a premium product line. Companies such as Tradin International are actively sourcing organic cashew nuts from Vietnam and Africa. Catz International has a partner in India. Volumes are modest within the Netherlands but these companies are supplying throughout Europe.

6.4.4. Sweden, France, Italy, and Belgium

Research shows that organic cashews are available and sold through supermarkets. However, volumes are limited as these countries are not traditionally large consumers of cashew nuts. Most of the product comes in through an importer in another country (the Netherlands, the UK or Germany).

6.5 United States

In the United States, consumers buy organic food because it is seen as healthier (Organic Monitor 2005) as opposed to Europe, where a complicated mix of concerns about health, the environment and altruism motivate consumers. Overall demand for organic products continues to grow, driven by the activity of major retailers such as Kroger Group and Safeway, as well as by the development of specialist retailers such as Wholefoods

Market and Greenwise (Publix). Demand for organic edible nuts has followed the general organic food trend by moving up year on year.

Cashew nuts are seen as a 'healthy' product. The Food & Drug Administration of the US has approved the following health claim "Scientific evidence suggests, but does not prove, that tree nuts, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease." This, although not as conclusive as nut producers would like, has allowed marketing claims to be made and nuts are now commonly marketed with labeling such as 'natural', 'healthy' or 'low in saturated fat' attached. Research continues on edible nuts and more conclusive health claims are expected. Health claims have shifted demand for edible nuts from the traditional older consumer of the 1980s. Now the typical consumer is a female young adult who also buys the product for her family to snack on.

The American market is the largest in the world for cashew nuts. Approximately 5 million cartons are imported every year or about 7,200 container loads. It is dominated by a number of importers and packers. The top five packers, including Planters, cover about 70% of the market. These packers supply branded or private label packs to the retailers, but none of the top five supply organic cashews. The CEO of one major packer, who preferred not to be named, stated that "Companies like Wal-Mart will not pay a price that allows us to either introduce an organic production line or to close down a packing line, prepare it for organic packing, pack and then switch back to conventional."

US demand for cashew nuts has shown strong growth over the past ten years. Only once since 1990 has demand fallen year on year. This followed the phenomenal growth of 2004. Organic cashews are following that trend, although again the figures are difficult to find as US customs does not separately record organic imports. A range of importers of both conventional and organic product confirm the accuracy of the estimate given above (3% of the entire market).

Cashew demand in the US is affected by sales promotions. Promotions such as 'Two for five dollars', 'One wholes & one broken' are common when prices are low. This does not mean growth every year because American demand can temporarily stop when prices rise, and promotions become uneconomic.

The US organic cashew market is less rigid in structure than the European market. Conventional importers are likely to present organic cashews as simply another product line. In Europe, on the other hand ethical and environmental concerns are core factors driving organic cashew demand. This means that in the US, organic imports are more of a 'business' and less likely to be complicated with fair-trade/ethical policies, as is the case in Europe.

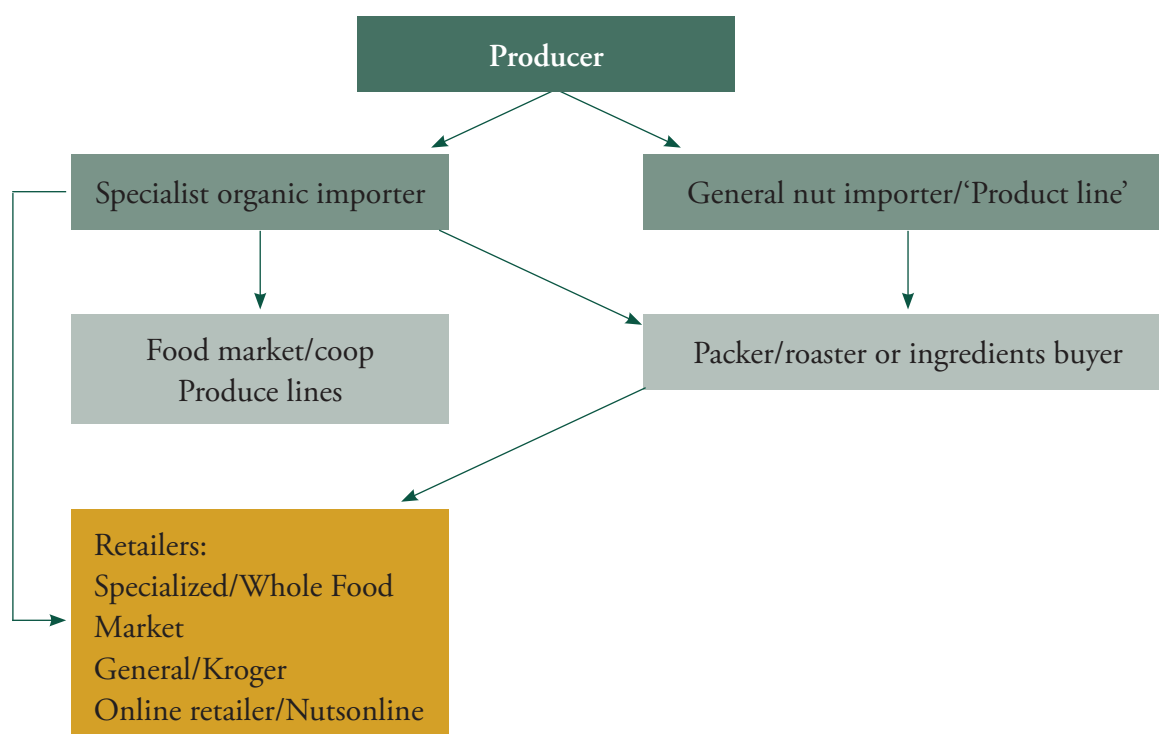
That is not to say that specialist 'organic' importers do not exist in the US; they do and often with policies covering ethical business practices. As a rough guideline, the purely organic importers are more likely to be located on the West Coast, whereas the conventional 'product line' importers are more likely to be located in the New York/New Jersey area – home of the nut trade in North America.

The market is estimated in the region 3000 mt. Imports come from a wide range of countries of varying importance, from small scale in Honduras, to full container loads from Tanzania. The overall impression is that

growth is steady, although not as fast as for other organic products. It has been suggested that growth has been hindered by a lack of supply, and in particular, by buyers' reluctance to invest marketing effort when successful creation of demand might lead to a shortage of product.

Organic importers tend to be small in market share, with the largest probably having no more than 10% of the organic import market. This type of importer ranges from small, specialized companies such as 'Just Cashews' which have a lot in common with fair-trade importers, to the other extreme, Hershey Imports, a straightforward business which deals with organic products and is part of a much larger group.

Figure 6.1 Market structure for US organic cashews



Source: *Ingredient Sourcing Solutions, Trade*

Examples of specialist US importers:

HP Schmid: 'Organic Planet' – importing from a range of countries, packing and distributing. A specialist seed and grains importer.

Global Organics: imports a range of organic products, concerned with good practice and development issues. Buys a few containers a year from Vietnam.

Hershey Foods: part of Unfi ingredients group. Imports about 275 mt per year from Brazil.

Organic Partners: organic sourcing agents. Specialist sourcing service for organic products (imports and domestic sourcing).

Multiple Organics: imports a range of products for sale from their warehouses on both the East and West coasts.

‘Just Cashews’: a small importer working with a coop in Central America.

Examples of conventional US importers who also handle organic nuts

American Eagle Foods: a major importer of nuts.

Setton Foods: Traditional importer, covers a wide range of products, including organic products.

Bedamco: Importer of organic and conventional products (no cashews at present).

Conventional US importers not involved in organic cashews:

J.F.Braun & Sons

Red River Foods

Speciality Commodities

Sunland Commodities

Star Snacks

Ultra Trading

These and other companies supply the large buyers of multiple container loads of cashews. Their customers cover a wide range, but the top five, Kraft Foods (Planters), Nutcracker Snacks (Ralcorp), Ann’s House of Nuts, Original Nut House, and J.B. Sanfilippo, dominate the market.

Current market in the US: Cashew prices have been falling. Consumer confidence is low, having been badly damaged by the financial crisis. According to importers, organic demand has not been as badly affected as conventional demand. Some importers’ estimates of their demand indicate normal levels. Price premiums are holding, although the overall level of price is down.

6.6 Australia

Australia is the second largest importer of kernels in the Eastern hemisphere after China. The market for conventional cashews has experienced rapid growth in recent years. Organic foods are important in Australia, with sales in the region \$300 million per year. Australia is a major producer of organic food and has the largest area in the world under organic production. Production of organic food will grow at rates in the range 10% per year, according to the government agency, Rural Industries Research and Rural Development. Conventional supermarkets have taken up and promoted organic food products and have their own brands. A network of independent organic retailers also exists.

Nut consumption in Australia is developing quickly, with the Australian Nut Industry Council promoting health benefits via health professionals. Australia is a producer of a range of nuts, including almonds, macadamia, walnuts, hazelnuts, and even cashews in small quantities. Cashew production may increase in the future as the crop is well suited to the north of the country.

Cashew imports are predominantly from Vietnam. This is due to quality, ability to certify product at origin, and partnerships with Vietnamese producers. India is at a disadvantage due to the presence of the khapra beetle, which requires special import procedures. 'The Nut House', a company packing and roasting nuts, is a venture of Nhat-huy, the Vietnamese processor. Import procedures are stringent in Australia, with fumigation prior to shipment required using methyl bromide or phosphine. According to the Australian Quarantine and Import Service, this limits organic imports.

The market has a range of importers, packers and specialist organic companies. It appears that the conventional edible nut trading companies such as MWT Foods and GB Commtrade do not venture into the organic market.

Quality standards and certification are very important to the Australian market. Factories which can certify quality and have HACCP or similar certification can do well. There is no reason why a new factory supplying cashews similar to those already imported from Vietnam, should not do well too. However, the conventional market is limited in size and the organic market is small, limiting opportunities to obtain the organic premium.

Possible conventional Australian partners:

MWT Foods: importer

GB Commtrade: importer

Select Harvest: packer of branded products

ABW Foods: packer

NSM Wholesalers

Royal Nut Co.

Gourmet Nut Company

Possible organic partners

NuVit Organics: many organic products including cashews

Organics only: organic sales but no cashews as yet

Santos Trading: small but committed organic

6.7 Japan

Japan is one of the most important markets for organic food in the world, and is the largest Asian market. Imported products must meet Japanese National Standards. High growth rates are being experienced. It is a modest importer of cashew kernels, receiving about 6,000 mt per year, 90% of which come from India. Trade sources indicate organic cashews are not an important factor in Japan. They have been tried but were not taken up by consumers. This fits with commentary on the Japanese organic industry, which suggests that the primary Japanese motivation for purchasing organic food is food safety. It is likely that cashews and nuts in general are regarded as 'healthy' and therefore food safety concerns may not apply. Given the traditional nature of the Japanese importer, and the long time usually taken to develop a relationship, it seems that the effort necessary to break into the Japanese market will probably not justify the returns in the short term.

6.8 Markets for organic in-shell

India: Feedback indicates that Indian shellers have no interest in paying a premium for organic cashew nuts in-shell. Kernel imports, which have occurred from time to time for conventional product, may one day become an influencing factor in the market.

Brazil: Import of in-shell is currently banned.

6.9 Organic cashew pricing and premiums

Organic cashew prices move with the market, although their volatility appears to be less pronounced. Prices seem to move up and down more slowly than in the conventional market. In some of the prices quoted below, it appears that the high level of premium (in excess of 40%) may be due to a slower response to falling prices in the organic sector than in the conventional market.

The almond market can give some pointers on premiums for organic edible tree nuts. Organic almonds from California have been making very high premiums for some time, probably related to the high promotion of almonds in general. Organic Almonds from California have made prices in the range \$11 per kg, which is double the average price for conventional almonds.

In the Netherlands, Tradin Organics indicated that the organic premium was just less than 25% over existing conventional pricing. Premiums have been sustained as a result of competition for product – not surprising though given the conventional market's strength.

In Germany, Rapunzel indicated a range of prices dependent on quality, but they found that in the very high priced conventional market, organic premiums had dropped back to 10-15% in the middle of 2009. Indeed, at one time in the panic of the open market, organic cashews were briefly trading at a discount to conventional.

Freeworld Trading in the UK estimated premiums in the range 20-25% over conventional prices.

In the US, it appears that prices are more fluid and more likely to be negotiated. Brokers report a wide range of price premiums, ranging from as low as 10%, to as high as 40%. The retail prices set out later in this report indicate a wide variation in the organic premium, which may reflect the highly stratified nature of the US snack nut market.

Indicated pricing as of 7th October 2008

WW320 organic certified Cashews

Basis Cfr Europe

Indian Top quality	\$8.36 per kg = 25% premium vs. conventional
African low quality	\$6.52 per kg = 10% premium
Vietnam top quality	\$8.00 per kg = 20% premium

Basis ex Warehouse Rotterdam

WW320 organic certified 7th October 2008

Tanzanian medium quality: \$9.59 per kg = 44% premium vs. conventional.

Indicated pricing as of 14th November 2008

WW320 organic certified Cashews

Ex warehouse US bulk

Central American medium quality: \$10.58 per kg = 68% premium vs. conventional

Indicated pricing as of 18th November 2008 – Olam Industries

Basis FOB

WW320 Tanzanian good quality: \$6.68 per kg = 29% premium vs. conventional

LWP Tanzanian good quality: \$4.69 per kg = 45% premium vs. conventional

Indicated pricing as of 19th November 2008 – Tanzanian sheller

Basis FOB

WW320 Tanzanian good quality: \$6.90 per kg = 31% premium vs. conventional

Indicated pricing as of 19th November 2008 – Brazilian broker

Basis FOB

WW320 Brazilian good quality: \$7.27 per kg = 37% premium vs. conventional

P1 Tanzanian good quality: \$4.85 per kg = 37% premium vs. conventional

The prices mentioned above are actual quotes from suppliers. It is impossible to obtain a statistical price history as there is no customs or trade association record of prices. This is common in cashews. Even the price history record used in this study for conventional cashews is the result of the author's collecting and recording data for many years from a variety of sources.

The quotes above tend to confirm information from trade sources such as Olam, Rapunzel and Doen, among others.

In summary, the organic premium, although not fixed, is paid in the range 20-40%, but tending toward 25-30%. Anecdotaly, the level of premiums reduces as the overall market price rises.



Chapter 7. Small-scale Production

Small-scale production is present in one form or another in every cashew shelling country. The production of cashews is by no means technologically sophisticated and even some of the bigger plants would not be described as large in the context of the food industry as a whole. Small-scale production means localized shelling, usually in villages where the nuts are shelled or graded for sale directly to the consumer or to a merchant/consolidation operation who sells on.

The study found that small-scale shelling/grading has developed in different ways:

1. Under the patronage of a large packing plant or exporter who consolidates the product for sale. From the processors' point of view this can reduce the capital investment required and remove the 'dirty' part of the process from their factory. From the village processors point of view this can offer additional income. It may not offer the security that employment at a shelling plant would provide, and can allow processors to avoid paying statutory benefits that employees would be entitled to.
2. Small-scale shelling is often focused on the domestic market where individual small-scale businesses operate during the season as an alternative to selling in-shell nuts. This is often a traditional 'cottage' industry, sometimes the remains of the original shelling method before the large processing plants were built. Sometimes it developed as a consequence of geographical factors such as isolation from the main shelling areas.
3. Small-scale shelling has also evolved through local initiatives to add value focused on niche markets such as organic or fair-trade. In these cases, support from NGOs is often the catalyst for the development.

7.1 Some examples of small-scale shelling

7.1.1 Panruti Region, Tamil Nadu, India

Cashew shelling is a major activity in many villages in Panruti. The nuts grown there are of good quality and can command a premium as in-shell for export from the region. The region is far from the major shelling centers.

The whole family is employed in harvesting cashews on the small farms, while women specialize in the shelling. Cashew shelling in Panruti is a small-scale operation. The sheds where many workers work are often an extension of their houses. Each worker can shell about 30 kg, or peel about 20 kg each per day. The shelling process starts with steam cooking similar to that found in Mangalore; the shell is cracked by striking the nuts with stones. Breakage levels are low. Grading is more specialized, but an experienced worker can grade 80 kg per day.

There are hundreds of small cashew units in the area. They are grouped into networks, with each network being associated with a trader who has no shelling facility but both sells the kernels produced and procures in-shell nuts outside the Panruti season. The processor has the option to buy the in-shell and sell to any trader/buyer or to take the in-shell and return the kernels to the trader.

Panruti processing continued evolving for a number of years into its current form. The product was not as well shelled or graded as the cashews from the big factories of Kerala. There were domestic and export sales, but at discounts due to lower quality. Over the past ten years, a number of facilities have opened which take the product from the small shellers and select and re-grade it, thereby reducing the discount at point of sale. This has created access to the international market.

In the past three years, a few of the small shellers have invested in better equipment and developed their facilities so that they now can sell at full market price for export to Singapore, the US and Europe.

7.1.2 Comextra Majora Model

Comextra is a cashew shelling plant located at Makassar, Sulawesi, Indonesia. The factory is a fully developed cashew shelling operation, with a large capacity. It is approved by a number of major buyers and has a HACCP certification. It was built with the intention of taking in-shell cashews and shelling, grading and packing for export. The production is of good quality. The consultant who undertook this study has purchased container loads from the factory in the past, as have companies such as Kraft Foods and Ann's House of Nuts in the US.

Some years ago, the factory discontinued any shelling operation (as opposed to grading & packing) and commenced a program to have the nuts shelled in the villages where the cashews originate. There has long been a tradition of village shelling in Sulawesi so the skills were available. To build capacity at village level, the company supplied equipment such as hand cutting machines, plastic bowls, buckets etc. Whole kernel count is high (estimated at 80% plus). Both the broken and wholes are purchased at price differentials. The nuts are shelled and stored in the plastic crates supplied by Comextra Majora. The buyer collects the shelled nuts on a regular basis.

The village groups are further facilitated by the fact that the processor buys their in-shell cashews at harvest time and stores locally for shelling. Shelling is a fairly slow process, but the in-shell can be stored up to a year.

Today Comextra does not shell any nuts but takes in high moisture shelled product with the testa intact. Peeling, heating, grading and packing are done at the plant to internationally accepted standards.

Benefits to the exporter:

- The 'dirty' process is removed from the factory.
- There is a reduction in labor requirements at the factory. Fewer employees are required. The villages work on a 'piecework' basis or selling the semi-processed kernels outright.
- Freight costs are reduced as only approx 30% of the weight is removed from the villages, as semi processed product is trucked to the factory. The remaining shell is used in the villages. This model is particularly suited to countries where the growing areas are remote.
- The suppliers of in-shell cashew nuts have a stake in making sure of a good outturn so they will dry and store the in-shell nuts properly.

Benefits to the village:

- Value addition and extra earnings.
- Cashew becomes a year round activity.
- Development of skills and skills/technology transfer to the villages.
- Shells remain in the villages for use as fuel.

Note: In Indonesia the cashew nuts are often shelled by the cold cut method, i.e. without steaming or roasting beforehand. This is facilitated by the thin shell of the nuts, and makes the process of village shelling much easier.

7.1.3 Organic shelling on Flores - value addition in a niche market

Flores produces about 25,000 mt of in-shell cashew, which is just over 1.5% of world production. On Flores current certified organic production is in the region of 450 mt in-shell.

The Swiss NGO, Swisscontact, reports that in 2006, 125 mt of in-shell cashews were sold as organic in-shell from organic production of about 240 mt. The premium for in-shell organic was about IDR2,500 per kilo in November 2006, and was about 45% of gross return. On an in-shell basis, the earnings in terms of the organic premium were gross \$28,000, less the cost of certification/ICS at IDR700 per kilo, which equates to \$9,700, giving a net gain of \$18,300 or about 25% for the 2006 season. (Swisscontact, Flores personal presentation Nov 8th 2007).

There are three buyers of organic in-shell: PT PMA (Jakarta), Big Tree Farms (Bali) and Nusa Primai (Flores). On the export side, 39 mt of shelled kernels were sold to Big Tree Farms in 2006, which is equivalent to 156 mt in-shell. These went on to the US and Germany. In Germany, the kernels were marketed under the brand name Flores Farm. Organic production is often a good way to enhance value addition.

However, the consultant who undertook this study is not sure that cashew is the right product. Work with the farmers on crop management and development of better husbandry is much needed for cashews. As yield is usually at very low levels, quick and meaningful increases should be possible. Perhaps work in that area would have better long-term results.

During the study, farmers indicated that most of the organic nuts were sold as conventional. If the crop is 450 mt as forecast by Swisscontact, then certification and ICS will cost IDR700/kg, a total of IDR315 million, or approximately \$35,000. That means that farmers must sell 126 mt with full organic premium before any extra value is added. Farmers who invest in organic certification must sell the product as organic, with an organic price premium, in order to cover their investment.

Organic production is a good way to add value on a local level for small-scale projects, but it must be combined with export quality shelling. It could be village shelling, but it must be packed in an export quality packing facility if orders are to grow beyond a 1-2 mt level each time.

The local shelling takes two forms. First, farmer groups organize village based shelling operations. These give farmers additional income, generating work usually in the afternoon. The product shelled in the villages was collected regularly by the buyer and taken to the buyer's packing plant for grading and cleaning for export. The operation was low volume, but produced good quality kernels.

The other system in operation on Flores was that of small shelling plants such as Nusa Prima. This factory, based in a village away from the cashew growing area, has a small capacity but still employs 400 local women who are paid every two weeks, and work throughout the year. Other than working in the cashew factory, there was little in the way of work for women in the area and most of the women are married to farmers.

The factory is of good quality, well managed and with advanced heating and cleaning facilities. The product is of excellent quality. The main problem for the factory owner is marketing. He produces small quantities and transport is expensive. He has little knowledge of the international market and is, to some extent, at the mercy of the buyer.

The operation has introduced skills and technology which were formerly lacking. It offered employment to workers who otherwise would have had no opportunity to work.

There were problems with procurement of the right ovens and other equipment for use in the factory. Although the in-shell cashew market on Flores is relatively efficient, there was little knowledge about the international market for cashews, which meant there were significant barriers to sales.

Whereas Nusa Prima is focused on export, another local enterprise focused on the domestic market. This was a small-scale operation which had the cashews shelled by the farmers' group which grew them. The nuts would arrive at their plant to be cleaned, roasted, salted and packed in retail packs for the domestic market.

7.1.4 Developing a local shelling industry⁷

Local village based shelling is an integral part of the Indonesian cashew industry. It is not only a source of income for poor rural communities; it is also a valuable resource that can be harnessed as an integral element in the development of cashew shelling. The geographically disjunctive production, and the cost of evacuation, means that it is likely to be better to conduct as much of the process as possible (shelling, peeling, and packing) close to the producing areas.

Cashew shelling needs skilled labor. In Indonesia this labor is already at work - shelling cashews. In order to establish a viable industry, this workforce needs to be integrated into a processing system that does not require the level of high capital investment seen in Brazil or Vietnam, or 40 years of development, as in Kerala. This can be done by integrating the village based shelling into a system of regional grading and packing centers which will produce product to international standards. These grading and packing centers should be of sufficient quality to pass customer factory audits. This aspect should be made easier by this separation of the 'dirty' part of the process from the final grading and packing.

It is also important to make cashew shelling a year-round activity. In order to do this, village sellers would sell their product to the packing/grading centers during the season. Outside the season, the packing centers would have to carry inventory of in-shell product that would be released to the local units for shelling on a toll basis, with the kernels returned for grading and packing. Toll processing means that the owner of the in-shell nuts pays a fee to have the product processed and owns the kernels outturn. Combining cashew growing with shelling can make cashews a year-round activity.

The use of village based shelling ensures a more even spread of the benefits of value addition, while offering the commercial partner a low level investment entry and managing the requirements of customers for food grade facilities.

The consultant who undertook this study believes that local shelling can be used as the foundation of the process using the current 'cold cut' shelling method to maximize whole grades. It must be formalized and prepared for development and integration.

Local or village based shelling accounts for about 5,000 mt of in-shell cashews annually. The initial objective is to upgrade the quality of this product and to double the overall shelling volume.

It is essential that the Indonesian domestic snack nut and confectionary market be firstly assessed and then developed to ensure that the shelling industry has an outlet for smaller quantities in the beginning, and in the longer term, for small pieces or wholes that do not find an export market.

Packing and grading centers should be established with a view to taking the pre-processed kernels from the village shellers, and drying, grading and packing to international standards for export or for the domestic market. These facilities will require drying, packing and fumigation equipment.

⁷ Prepared by P. Jaeger and J. Fitzpatrick for the Smallholder Agriculture Development Initiative (SADI)

Local village shelling operations could be developed by utilization of community grants to upgrade their shelling environment to allow for better hygiene, storage of the raw material, drying of the raw material, and transportation to a packing center. Small changes at this level can have major benefits. In the future, some of the small shellers will develop their own shelling, and eventually, shelling businesses.

Location of packing centers in areas which are suitable for the collection and the onward shipment of the product, (for example, in Maumere or Bau Bau).

7.2 Advantages of small-scale/village-based shelling

- A more even spread of the benefits of value addition.
- The level of capital investment is reduced.
- In areas where the raw material is remote from the packing or export centre, the saving in freight by moving only 30% of the weight, can result in significant savings in transport costs.
- The involvement of growers in shelling means that raw material is often better handled post harvest than it otherwise would be, resulting in benefits to the growers and packers.
- Small-scale shelling can lead to the development/enhancement of a national domestic market serviced by small shellers and packers. This can be an outlet not only for whole cashews, but also for pieces and off grades.

7.3 Challenges of small-scale/village-based shelling

- In circumstances where local shelling has not developed or local shelling is not suitable or efficient, its introduction will require significant training and investment in the people who will shell the nuts. From the cutting method to food hygiene, each stage must be developed if the system is to be sustainable.
- A system which relies on remote shelling must have controls in place which allow for full traceability of the product in order to comply with the standards demanded by export buyers. Generally, compliance with these standards brings better sales prices.
- Transporting shelled material requires that containers are suitable and that the transportation method will not lead to excessive breakage.
- As cashew kernels are a valuable item which can be easily transported and have a long shelf life, theft is always a problem.

7.4 Prospects for small-scale processing and Cambodia

Buyers of cashews would, in general, prefer nuts shelled in a modern self contained shelling and grading plant, with separation of the raw material and shelling, from peeling and grading. If no such facility is available, or as an interim measure while a facility or facilities is/are being built, localized shelling might be an answer to creating value addition.

This study did not find evidence of village shelling operations in Cambodia. Given the relatively recent arrival of cashews and the history, it seems likely that the nuts have always gone to Vietnam for shelling. Therefore, extensive training and support would be required.

It does appear that the growing areas are diverse and there might be good reason to consider village shelling in the more remote areas similar to the Comextra model above. As the Cambodian cashews appear to be similar to the Vietnamese cashews, the cold cutting method so favored in local processing, may not be efficient. This would have to be thoroughly investigated, both from the outturn point of view, and regarding health and safety, given the damage that cashew shelling can cause to workers' hands.

If small-scale processing is to be encouraged, it is also important to encourage good post harvest practices. The in-shell cashews should be dried and stored properly in dry conditions and protected from pests to ensure long shelf life. The nuts should be stored in jute bags or bulk rather than polypropylene bags, which are known to encourage the nuts to sweat.

Finally, processors (as opposed to in-shell traders) should be seen to pay higher prices to growers for better quality, thereby rewarding growers for improvements in product quality. Large and easier-to-shell nuts should be identified and premiums paid for these. It is only by rewarding quality that growers will be encouraged to develop their produce and that they will appreciate the relevance of education in good husbandry.



Chapter 8. Marketing Strategy for Cambodia

Cambodia has good quality in-shell cashew nuts available which are currently exported to Vietnam for shelling, thus losing a major opportunity to add value. The development of a new shelling plant in Cambodia would enable value added through local shelling and open the doors for building a shelling industry. It would also create competition for in-shell nut exports, enhancing their value too.

Global market recap

- The cashew market is growing and looks set to continue doing so.
- Cambodia is located close to a number of regional markets which can provide outlets.
- Organic cashews command a premium.
- Organic cashews are in demand, and there is little chance that large volumes of certified organic cashews will suddenly become available.
- The main destinations for organic cashews are the US and the EU (UK and Germany, in particular).
- Buyers are interested in new sources and origins of cashews, especially following the bad performance of suppliers in recent years.
- Quality, reliability and traceability are crucial for success.
- There is a market for cashew pieces and broken.

8.1 Development of shelling

The focus of this report is primarily on marketing, but it is also essential to touch briefly on the development of processing. The development of a domestic processing industry is essential. This can be tackled in a number of ways – the industrial model, the small-scale or ‘cottage’ industry model, or a combination of the two. The establishment of a least one quality processing unit is essential in order to build a positive brand image for Cambodian-grown cashews.

The progression of the industry varies from country to country: some have developed indigenous processing and some of have not. No multi-national processor/sheller has emerged and therefore there is no international shelling structure. Indian or Vietnamese shellers have remained active only in their own countries. Unlike commodities such as cocoa or sugar, importers have, for the most part, remained just importers, and roasters have remained just roasters.

The exception is Olam, which has developed processing of cashews in a variety of countries, but this has been a relatively recent development, and in the long term, their processing strategy remains to be seen. The only other venture in processing by a multi-national company was the purchase some years ago of Iracema in Brazil, by the US company; Planters Lifesavers Inc. Planters divested this company in 2006, selling it on to an investment group which included Bond Commodities Ltd. of London. Outside of Olam and Planters, there has been little activity in international shelling investment.

There have been rumors that Olam is considering setting up a processing facility in Cambodia, but as of March 2010, this had not been substantiated, and given Olam's presence in Vietnam, it seems unlikely the company would shell in Cambodia unless attractive incentives were offered. Olam has driven some hard bargains in African countries. It is more likely that an indigenous or at least Cambodia-focused group will invest in the sector. Mekong Rain Natural Foods, a group with local agricultural and management experience, is currently seeking investors for the development of a shelling plant in Cambodia. The consultant who undertook this study believes that if ventures embrace principles of ethical investment, organic production, and environmental protection, that funding is available for such ventures even in the current economic climate.

A full investigation of the prospects for a shelling investment in Cambodia is recommended. This has the potential to add value of \$30-40 million per year, based on current production.

8.2 Product to emphasize in marketing

It is important to identify the product to be exported in order to give direction and planning. The export of organic shelled raw cashew kernels in bulk packs is recommended for the following reasons:

- Export of cashew kernels enhances value addition and brings the Cambodia industry further down the value chain in capturing more of the total value.
- Bulk packs are standard and can be sold in any of the prospective markets.
- The packaging and logistics for bulk packs are the same as for the conventional market. Therefore, if the organic market cannot take up the goods, there is a ready market in the conventional market.
- The export of roasted cashews in bulk or consumer packs presents problems which would be difficult to manage in the initial stages of the business.
 1. The long voyage to destination markets reduces shelf life on arrival.
 2. There are tariff barriers in some markets e.g. EU.
 3. Roasted pieces are more difficult to sell than raw pieces.
 4. Buyers of roasted product tend to be further down the chain and expect credit terms.

5. Buyers prefer to roast the product in their own country. Different markets like different types of roasting – light, dark, lightly salted, salted, etc.
 6. Roasting and packaging of roasted products requires additional capital investment. Suitable packaging may be difficult to source.
 7. How would returns be handled?
- The availability of organic product is a competitive advantage. The organic product commands a premium, and there are potential partners ready to discuss sale of significant quantities.
 - Why not fair-trade? A deferral is recommended for marketing cashews as fair-trade, at least for the first year of any new shelling venture. Currently, the fair-trade market would be unlikely to absorb even 500 mt of kernels, and especially the broken/pieces, because full standards have not yet been set for fair-trade cashews. Operation within the current standard would make the venture unworkable. In the longer term, fair-trade will become practical. A road map for fair-trade certification should be undertaken now, the deferral sought and a strategy implemented at the appropriate time.
 - For the time being, roasted cashews should be aimed at domestic or regional markets, where transit times are short, and quality control/assurance procedures are less demanding.

8.2.1 Emphasize strengths

Develop Cambodia's cashew sub-subsector as follows:

- Organic certification is a must for organic exports. This should be developed to the requirements of customers and with agencies acceptable to them. Most of the organic importers contacted for this study would help their suppliers gain certification.
- The unique selling points of Cambodian cashew nuts are likely to be that the product is organic, traceable, processed in a new, approved factory, and is supplied by a reliable principal.
- Quality certification is essential. A HACCP program is essential from the start, even if certification takes some time. If an ISO certification can be added, every market in the world will be open to the cashew kernels. Buyers will take the certification as a badge of quality and a competitive advantage will be gained over suppliers in India and Vietnam who have lost credibility due to failure on the part of some suppliers to honor their contracts.
- One of the international quality standards should be adopted from the beginning. AFI is suggested because it is acceptable both in Europe and the United States.
- Work with growers to develop quality raw material. Husbandry projects, proper drying, and proper storage are crucial to enhance quality. Allowing the nuts to fall, rather than picking them, is also important.
- Brand the product and develop the brand. The branding of cashew kernels has been neglected by producers in most origins. The design of a logo and a name that will work in various markets can be the difference between a premium and an ordinary price.
- Develop full traceability of the product, with first-class record keeping. Use batch numbers so every load can be traced back and any query on quality can be quickly answered.

- Research the logistics and work with a good freight forwarder. Make it easy for customers to handle the documentation presented for payment. Present them with information about the shipment in a timely manner with details of when the goods will arrive. This will allow them to plan, and allow the exporter to insist on payment against presentation of the documents.
- Reliability of supply cannot be emphasized enough. Never, ever default on a contract.

8.3 The most suitable trade channels

The long-term objective should be to export a first class roasted, organic cashew in consumer packs for sale in supermarkets around the world. This would capture maximum value addition and set Cambodia apart from other origins. This is an ambitious goal and needs to be taken in steps. The first step should be the marketing of bulk, raw cashew kernels to long-term partners who might facilitate the development of the cashews into a finished consumer product.

It is essential to work with a European organic importer and regional importers. Research indicates that a presence in the US market would be a constructive step. Also this study found that suitable partners are likely present in the US.

Given the volumes envisaged, it is important not to attempt to access the market through too many channels. Multiple channels would dilute the volume available, making it difficult for partners to make a reasonable return on the support they would be expected to offer the shelling venture. Working with an organic partner on both sides of the Atlantic is recommended. One will service North America and the other Europe. The objective will be a 5-7% share of both markets in order to market about 450 mt of organic kernels.

8.3.1 Why use an importer/distributor?

- The study looked at various supermarkets and direct retail contacts, but found that they are too slow to pay, too difficult, and too likely to change their mind. The Coop in the UK may be one exception which could be examined.
- However, the consultant who undertook this study strongly believes that working directly with retailers or consumers is something to consider for the future.
- Working with an importer/distributor gives access to supermarkets, roasters, processors, bakers, as well as the full range of potential users.
- An importer/distributor is better placed for pre-financing and /or joint ventures.
- In the event of a slow down in organic sales, an importer can access the conventional market if necessary.
- An importer would be more likely to pre finance, or pay against shipping documents.

8.3.2 Partner with specialist organic importers because they are:

- Further down the value chain, closer to the packer or retailer, allowing for a better capture of value addition.
- Likely to be knowledgeable on certification issues.
- Better disposed to a transparent, open, long-term relationship with exchange of market information and pricing.

- More likely to support the venture with inputs than conventional importers, and less likely to change supplier on the basis of short-term gain.
- More likely to understand the benefits of quality, traceability, etc.
- More likely to pay the correct premium for organic products.
- More likely to concentrate on marketing organic products, rather than a wide range of different types of product.
- Less likely, given their overall approach to business to make false claims or renegotiate contracts – a fairly common occurrence among conventional nut importers.

8.4 Key markets to target and why

8.4.1 Europe

- With organic, certified, traceable product, a supplier delivers something that competitors in Africa and India cannot – certification and traceability. These are in demand in Europe.
- It is an established organic market, with an established price premium.
- There is a market for whole and broken nuts.
- Partners, if not fair-trade, may have alternative ethical sourcing systems.
- Freight costs from Cambodia are lower than to the US.
- The markets of Eastern Europe, including Russia, can be accessed in the longer term.
- Diverse markets are within a day's truck drive so that in the event of problems, the cargo can be sold into an alternative market.

8.4.2 United States

- It is a sensible risk management strategy to have more than one buyer. It is also constructive to have a presence in the two large organic markets – the US and Europe.
- The US market seems to be growing more quickly.
- On first impression, the US market is more price sensitive than the European market, although it will take time to prove this.

8.4.3 Markets in the Asian Region

It would be a mistake to neglect prospects for developing sales in regional markets.

The same long-term approach should be adopted, but the function of these buyers in the overall business plan may be different.

The function of the regional market will be to:

- Avoid dependence only on Western organic outlets, although ideally Asian buyers will become organic buyers as time goes on.
- Allow quick transit sales in the event of a cash flow requirement from inventory. Establish a foothold in the region because, in the longer term, it is likely that these markets will grow and become more important than the markets of the West.
- Allow opportunistic trading from time to time.
- Have outlets close at hand if, for example, the environmental impact of shipping long distances becomes an issue with customers. Ideally, of course, one would ship everything to a nearby customer.

The Asian regional markets so far identified are:

1. **Thailand:** Imported 1,775 mt in 2007, mainly from Vietnam. Roasters such Khoa Shong could be ideal partners for limited volumes, without financial commitments.
2. **Singapore:** A small market in the region (1,000 mt per year) but a market in which organic is becoming significant.
3. **China:** This market cannot be ignored. Tree nut consumption is rising, although some studies suggest cashews may not take off as quickly as walnuts or almonds. However, as time goes on, it may become a very important market.
4. **Australia:** a difficult market, but with a taste for Vietnamese cashews. It could be an outlet and may, in certain circumstances, become a major outlet.

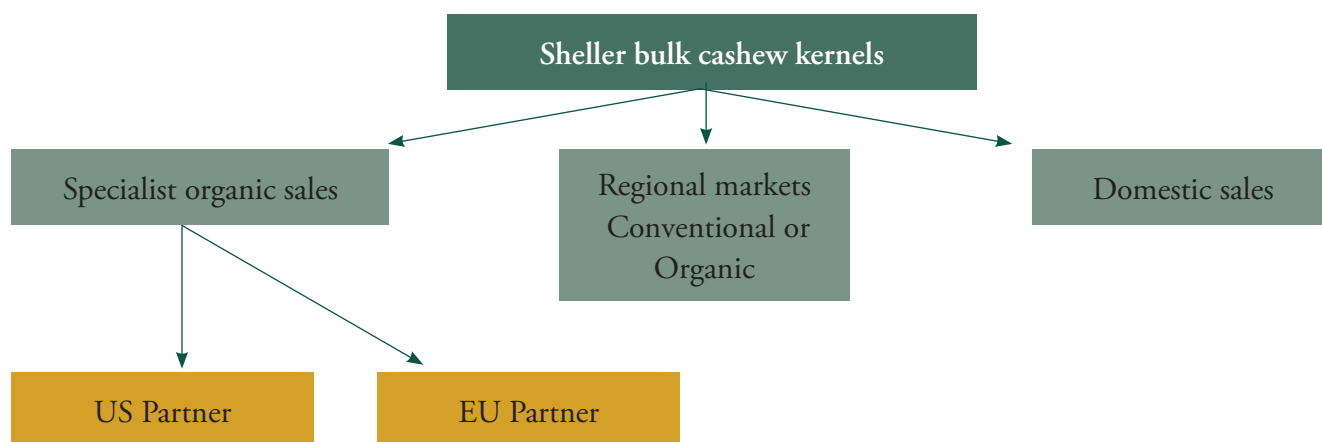
8.4.4 The domestic market

The domestic market should not be ignored, but this study is not in a position to recommend how that might be handled.

8.5 First steps in developing a marketing strategy

1. Assess potential organic partners in the US and Europe by e-mail contact, followed by meetings with them. Have a prospectus or brochure for the shelling venture ready as these potential partners may also be prospective investors.
2. Decide on a ranking of preferred partners and ask the most favored for a commitment to an understanding of working together and building the relationship.
3. Assess the regional market partners and decide with which potential buyers to open discussions.
4. Join the International Nut Council as the first step in brand building.

Figure 8.1 Trade channels



8.6 Marketing strategy review

It is worth reviewing and assessing the strategy first developed toward the close of 2008. 2009 was a year in which Cambodia made valuable strides in the world market:

- Cambodia has successfully commenced the export of in-shell cashew nuts to India. This adds a new destination to the already established market for in-shell in Vietnam. This also marks the entry of Cambodian cashews into the world market, and provides the Cambodian exporter with access to information and a more global perspective. This addresses one of the weaknesses identified in the original SWOT diagram for the Cambodian cashew industry. Until such time as all nuts grown in Cambodia are shelled there, shelling in both India and Vietnam will maximize value addition and benefit the industry from grower to processor.
- The sale of in-shell cashews to India has potential to reward growers with better prices for quality, whereas previously, price differentiation between qualities was limited to the price premiums for larger nuts.
- A Cambodian sheller has recommenced processing on a small scale for the domestic market. As has been pointed out, the strength of the Indian industry is its domestic market. Vietnam's strength is the Chinese market on its doorstep. The development of a domestic market in Cambodia, allied to the development of regional markets, is essential.
- Vietnamese processors have stated their intention to establish cashew operations in Cambodia. It is unclear whether this includes processing, but seems to be limited to post-harvest assembly and drying of in-shell stocks for export to Vietnam.
- IFC has continued its support to farmers and farmer groups in improving cashew production. This is clearly of vital importance.
- At least one prospective processor in Cambodia has developed contacts with organic marketing companies in Europe, allowing an exchange of information and the development of a marketing chain in readiness for the first exports of organic cashew kernels.
- An Indian trade delegation from CEPCI has visited Cambodia on a fact finding mission.

8.7 Lessons for Cambodia

- The overall outlook for demand looks positive, with growth set to continue at a slow pace in the US, a moderate pace in Europe, but at a high pace in India, China and other Asian countries.
- During a recession, cashew buying patterns change, but overall demand may continue, despite sharp falls in consumer expenditures in developed countries. The US market is the most susceptible to these changes. In the US, cashew demand can collapse and then make a come back within 8-12 months. Prospective exporters must bear in mind the importance of inventory control in the event of a sharp economic downturn. Purchasing policy at harvest time must take into account developments in the US, and customers in that market must be followed closely.
- Cashew prices are buoyant, even in recession. This can continue as a function of diversified demand as countries such as India, China and in the Middle East become more important markets. Diversification of sales is thus essential.
- Lower inventories and fewer forward sales appear to be features that are here to stay.
- Choose partners carefully as the recession may have a long-term impact on companies' ability to fund their activity and on their integrity when it comes to honoring contracts. Close cooperation with a partner in the market place is essential in this environment.
- In a market characterized by low levels of contract integrity, a good reputation is crucial, especially in a crisis, and this can mean the difference between making a forward sale or not, and making the target price or not. In a market which lacks a futures exchange, having risk management strategies based on marketing and hedging of purchases is important.
- In the longer term, target India and China as markets.
- The US demand for pieces is increasing because demand for cashew pieces in snack bars and other processed products has mitigated their fall as a snack food.
- Globalization – from in-shell marketing to processing technology and all points in between the industry is becoming global in all aspects. It is important to be a part of this trend.
- Ethical sales are on the increase, despite the recession. Organic sales have experienced mixed results across different countries, but the trend remains positive.
- Fair-trade cashew sales have developed, but unlike fair-trade cocoa and coffee, development remains slow. The 'fair-trade' brand is growing in Europe, but there has been no formal progress on the development of pricing for grades of fair-trade cashews, other than WW320. Over 2008 and 2009, cashew kernel prices were closer to the fair-trade price than ever before.
- Cashew processing technology is available at more affordable prices than ever before. Technological developments must be closely followed to take advantage of them.
- Despite technological advances, cashew processing will remain a labor-intensive industry.

The impact of the recession on the cashew market has been primarily through changes in buyers' approach, and shellers have refocused on markets that were less affected. This has given rise to an acceleration of the globalization process. Overall, the industry has not suffered to the same extent as other industries. Demand has stayed buoyant after an initial short lived collapse, with prices steady and production stable. This is largely due to a coincidence of factors, including the underdeveloped nature of the business, and the smaller-than-average crops experienced over the period of the recession. The nut, known in some places as 'the devils nut', demonstrated more divine than devilish qualities in 2009.

8.8 Review and modifications of the strategy, based on developments in 2009

1. The **basic strategy** of concentrating on the development of a processing industry remains valid. Bulk organic product remains the most likely area of success in the medium term, with roasted product to follow in the long term. The selection of a partner for the Western Europe market, and another for the North American market, with a target of 5-7% of the bulk market, still seems advisable.
2. As pointed out in late 2008, the development of a large enough volume of organic product sales will be a challenge, so the conventional market may be a destination for part of Cambodia's shelling outturn. While the idea of partnering closely with a specialist importer remains valid, it may be important to assess whether the partner would be receptive to marketing part of the organic product as conventional. It could be advantageous to partner with an importer of both conventional and organic product, if one can be found, or partnering with two importers who are prepared to cooperate with each other. There are a number of examples such as Free World Trading in the UK which is stronger on the organic side, or Catz International in the Netherlands, which is stronger on the conventional side. As previously outlined, in view of the impact of the recession, and likely problems for a number of importers, a careful selection process should be adhered to in selecting an importer. Perhaps initial development on a consignment basis would overcome the objections that a potential partner might have regarding the need for full loads, pre-payment, or the risk of low returns, based on low start-up volumes.
3. **Organic premiums:** Premiums remain good, although they are under more downward pressure than at the end of 2008. This is a short-term impact of the recession rather than the result of greater supplies entering the market. While organic production remains a topic of discussion worldwide, particularly among development agencies, there has been little or no progress on organics in the major producing countries (India, Vietnam and Brazil). It also continues to seem unlikely that large quantities of certified product will suddenly enter the market.

4. **Quality:** Buyer requirements have risen, as a couple of highly publicized food scares have caused a greater emphasis on inspection, especially for conducting the more sophisticated tests that identify microbiological contamination. Greater emphasis should be placed on the development of an independent inspection service with knowledge of cashews. Certification is emerging as being as important as product quality. A re-assessment of the specifications to be adopted for the Cambodian cashew industry might prove to be fruitful. The specifications most used are the AFI Specification and the CEPCI Specification. The differences between the two relate to when and where quality is judged to be final, and to levels of breakage. Brazil has a different, although equivalent grading system, but is similar in all other aspects. In Vietnam, some grades are produced which fit into neither AFI nor CEPCI specifications. These grades can cause problems as cases have emerged where Vietnamese certification agencies are prepared to certify product, but have no real specification against which to measure it. One Vietnamese inspection company maintains that LP is a second grade, but the trade sees it as a first grade equivalent of LWP.
5. **Traceability:** Since food industry technology now allows consumer reports to be collated, a few complaints can result in a major recall, which can be costly for all involved. In such circumstances, being able to show the process, origin and handling history of a product is essential.
6. **Labeling:** Labeling of product by origin, which has been important in a number of countries for some time, is continuing to present problems for new entrants to the US market. It is important to make an early marketing drive to promote Cambodia as a likely origin, as changes in packaging, and therefore labeling, may only be possible once a year. If suppliers from a new origin get the timing wrong, they could be excluded for 18 months simply because their origin is not mentioned on the label of a major packer.
7. **Processing technology:** The evaluation of processing developments is an important part of a processing project. In 2009, technology emerged which may well make it possible to mechanize the 'dirty' side of the process: i.e. from roasting/steaming to peeling. This should reduce the number of scorched kernels and improve volumes, although the process is likely to remain a labor intensive one for the foreseeable future. Elsewhere in this report developments in mechanization have been summarized, and further progress should be reviewed periodically.
8. **Regional markets:** As discussed in reviewing the market in 2009, China has potential as a growth market. All of the other likely regional partners – Thailand, Singapore and Australia – may also provide opportunity. However, given recent developments, China may prove the easiest market to develop and may well offer the best chance of starting an export oriented roasting and packing operation.
9. In addition to joining the INC, and perhaps more importantly, the Cambodian industry should ensure that it is represented at the evolving World Cashew Organization which is being discussed by representatives of CEPCI, Vinacas, Sindicaju and ACA. It will be important to have a say in the development of unified marketing and unified product specifications. In the longer term, absence from this organization could well be seen as a mark of inferiority by customers and consumers. Membership is a step towards building a strong brand.
10. **Competition:** Outside of India, the competing origins have been weakened by changes in buying patterns and difficulties in finding financing as a result of the recession. As previously discussed, Indian processors/shellers are less impacted due to the health of their domestic market. Over 2009, while the absolute position of the Cambodian cashew sector has not changed, relative disadvantages have moderated. This is because the industry is in its infancy. The lessons of the recession should be remembered for the future.

In 2009, Vietnamese shellers, in particular, have suffered from lower prices for kernels than was the case in 2008, and also higher prices for imported raw materials, and higher costs for materials and labor within Vietnam. Indian shellers have suffered from rising costs and lower availability of labor as well in 2009 – factors which were building for some years. The high level of interest in mechanization in India is indicative of rising costs there. While lack of funding may be a short term factor, the shortage of, and rise in the cost of labor, are more likely to be long-term trends for both major producers.

The African cashew shelling industry has continued to take small steps. Better and more processing in East Africa has not so far been matched by developments in West Africa. The major injection of cashew development funding from the Gates Foundation will help, but initially will likely provide better returns for growers who sell in-shell cashews to India and Vietnam for processing. Longer term, the cashew has the potential to assist many small growers in improving their standard of living, and African origins are likely to emerge as competition.

Outside of processing, the industry has still only one multi-nationally active organization, Olam International of Singapore, although many multinationals are active in the processing and packing of finished cashew products. Olam continues to be very successful and their policy and activity must be considered by any new entrant to the cashew processing business. Other traders and importers have found circumstances in 2009 more difficult, and casualties of the recession can be expected, primarily due to difficulty in raising or maintaining credit lines.

Cambodia as a location for cashew nut shelling and processing has not lost any competitive advantage over 2009. However, time has passed during which significant value addition facilities could have been developed, which would have had a positive impact on all the stakeholders.

Figure 8.2 SWOT Analysis: Cambodia cashew market development/increasing production and grower returns (December 2009)

Internal factors drawn from conversations with Andrew McNaughton and the ADI Report. External factors from foregoing market analysis.	Strengths • Good raw material – outturn • Good raw material - size • Climate • Products growing on good land where yield can be improved • Traceability of indigenous production • Proximity to new technology in Vietnam • Low cost labor force, stable cost • Availability of organic products • Location proximity to Vietnam for RCN sales/competitors Indonesia & Africa • No bad reputations with buyers • Low raw material cost • No trade barriers • Experience of small-scale shelling • Support for farmers	Weaknesses • No value addition capture • Proximity to Vietnam - competition for shelling • Lack of a skilled workforce • Long inefficient value chain with 47.5% profit margins • Business environment • Lack of finance/high interest cost • Lack of market information • Lack of crop data/location data • RCN pricing does not encourage quality • No outlet for organic in-shell
Opportunities • Capture of value added • Growing demand - tightening supply/demand balance • Growing organic demand • Vietnam as an outlet for RCN while the industry grows • Support for extension and husbandry projects • Proximity to growing markets • Factories can be built with required quality systems • Proximity to Vietnam technology and skills transfer • Warehouse warrant/financing system for growers/merchants • Buyers desire for new suppliers • Sales of RCN to India • Stock and sell in Europe	Threats • Lack of value addition capture • Other crops replace cashew • Intervention of Vietnam buyers to source in Cambodia to shell in Vietnam • High energy costs • Lack of finance • Market price volatility.	Strength/Opportunity Strategy Development of a domestic shelling industry with linkages to diverse international markets to create better returns for growers, rewards for quality and competition for RCN which will rationalize the domestic value chain. Weaknesses/Threats Strategy • Shelling plants • Grower support • Finance system/Warehouse warrants • Market information systems • Workforce training

Annex 1. Cashew Kernel Price History, FOB Origin

	W180	W210	W240	W320	W450	SW	FS	FB	LWP
Nov-96	2.75	2.52	2.50	2.35	2.30	2.30	2.05	2.00	1.53
Jan-97	2.76	2.63	2.58	2.51	2.30	2.25	2.15	1.95	1.60
Apr-97	2.80	2.71	2.50	2.53	2.30	2.01	2.10	1.90	1.26
Jul-97	2.60	2.59	2.54	2.43	2.25	2.11	1.92	1.66	1.51
Nov-97	2.92	2.70	2.53	2.40	2.05	2.18	1.95	1.75	1.60
Jan-98	2.90	2.55	2.51	2.26	2.05	2.06	1.85	1.75	1.55
Apr-98	2.80	2.58	2.65	2.34	2.15	2.06	1.85	1.70	1.55
Jul-98	3.39	3.27	2.81	2.45	2.25	2.39	2.00	1.96	1.85
Nov-98	3.70	3.45	2.83	2.45	2.30	2.10	1.70	1.78	1.72
Jan-99	3.95	3.70	2.95	2.50	2.35	2.45	2.00	1.85	1.85
Apr-99	4.10	3.87	2.97	2.70	2.66	2.56	2.30	2.19	2.40
Jul-99	3.90	3.95	3.10	2.99	2.85	2.92	2.82	2.75	2.80
Nov-99	3.26	3.35	3.20	3.08	3.00	2.60	2.96	2.85	2.29
Jan-00	3.30	2.80	2.85	2.75	2.45	2.30	2.65	2.60	2.05
Apr-00	2.80	2.75	2.68	2.60	2.40	2.37	2.15	2.15	1.91
Jul-00	2.85	2.65	2.45	2.35	2.33	2.33	2.21	1.80	1.70
Nov-00	2.88	2.60	2.63	2.25	2.26	2.20	1.70	1.80	1.40
Jan-01	2.68	2.48	2.35	2.10	2.02	1.93	1.62	1.60	1.25
Apr-01	2.90	2.45	2.35	1.75	1.94	1.80	1.63	1.45	1.04
Jul-01	2.85	2.50	2.35	1.80	1.50	1.30	1.41	1.35	1.10
Nov-01	3.15	2.60	2.30	1.80	1.40	1.28	1.40	1.40	1.20
Jan-02	3.20	2.60	2.30	1.80	1.40	1.30	1.37	1.35	1.20
Apr-02	3.10	2.65	2.30	1.85	1.43	1.43	1.38	1.35	1.26
Jul-02	3.60	3.50	2.40	1.90	1.65	1.60	1.60	1.55	1.55
Nov-02	3.30	2.85	2.25	1.75	1.55	1.60	1.60	1.60	1.45
Jan-03	3.15	2.70	2.20	1.70	1.45	1.55	1.50	1.45	1.40
Apr-03	2.85	2.50	2.05	1.70	1.52	1.50	1.45	1.42	1.40
Jul-03	2.91	2.50	2.12	1.72	1.54	1.53	1.55	1.50	1.45
Nov-03	3.00	2.55	2.10	1.88	1.65	1.65	1.66	1.55	1.50

	W180	W210	W240	W320	W450	SW	FS	FB	LWP
Jan-04	2.90	2.55	2.10	1.90	1.75	1.70	1.70	1.65	1.50
Apr-04	2.80	2.50	2.14	2.00	1.82	1.75	1.65	1.60	1.50
Jul-04	3.00	2.70	2.60	2.40	2.30	2.25	2.25	2.25	1.90
Nov-04	3.00	2.75	2.50	2.45	2.30	2.25	2.30	2.25	1.75
Jan-05	2.90	2.70	2.60	2.52	2.43	2.40	2.35	2.30	1.75
Mar-05	2.85	2.70	2.60	2.50	2.40	2.40	2.30	2.25	1.80
Jul-05	2.80	2.55	2.50	2.25	2.15	2.10	1.90	1.90	1.75
Nov-05	2.80	2.70	2.50	2.05	1.95	1.90	1.75	1.70	1.50
Jan-06	2.80	2.70	2.50	2.05	1.95	1.90	1.75	1.70	1.50
Mar-06	3.00	2.75	2.50	1.95	1.80	1.75	1.55	1.50	1.45
Apr-06	3.15	2.90	2.60	2.10	2.00	1.85	1.70	1.60	1.45
May-06	3.30	3.05	2.60	1.95	1.85	1.75	1.55	1.55	1.45
Jun-06	3.70	3.20	2.56	2.05	1.85	1.85	1.60	1.50	1.45
Jul-06	3.75	3.30	2.60	2.10	1.86	1.85	1.55	1.55	1.35
Aug-06	3.70	3.25	2.45	2.00	1.75	1.80	1.40	1.60	1.40
Sep-06	3.75	3.25	2.53	2.04	1.77	1.80	1.53	1.52	1.35
Oct-06	3.75	3.25	2.50	2.05	1.75	1.80	1.52	1.52	1.35
Dec-06	3.75	3.25	2.55	2.05	1.75	1.80	1.55	1.50	1.35
Jan-07	3.75	3.25	2.60	2.10	1.75	1.75	1.60	1.60	1.35
Feb-07	3.50	3.00	2.55	2.00	1.75	1.65	1.58	1.55	1.30
Mar-07	3.50	3.25	2.58	2.07	1.70	1.65	1.60	1.58	1.30
Apr-07	3.70	3.35	2.65	2.12	1.78	1.78	1.65	1.63	1.35
May-07	3.50	3.35	2.60	2.05	1.85	1.80	1.65	1.63	1.35
Jun-07	3.30	3.10	2.60	2.02	1.95	1.90	1.70	1.65	1.35
Jul-07	3.30	3.10	2.60	2.12	1.95	1.90	1.70	1.65	1.35
Aug-07	3.60	3.05	2.65	2.20	1.97	1.92	1.70	1.65	1.35
Sep-07	3.78	3.30	2.65	2.20	2.07	2.10	1.75	1.70	1.45
Oct-07	3.95	3.65	2.70	2.35	2.20	2.20	1.80	1.80	1.45
Nov-07	4.20	3.90	2.95	2.60	2.50	2.25	2.00	1.95	1.65
Dec-07	4.20	3.90	3.00	2.57	2.55	2.40	2.00	1.95	1.65

	W180	W210	W240	W320	W450	SW	FS	FB	LWP
Jan-08	4.08	3.85	3.10	2.70	2.55	2.55	2.10	2.15	1.80
Feb-08	4.25	3.85	3.20	2.80	2.55	2.55	2.18		1.85
Mar-08	4.25	4.05	3.15	2.98	2.65	2.60	2.25	2.30	2.00
Apr-08	4.30	4.10	3.18	3.00	2.80	2.80	2.30	2.30	1.90
May-08	4.50	4.30	3.65	3.30	3.15	3.10	2.40	2.40	2.35
Jun-08	4.80	4.50	3.78	3.60	3.35	3.30	2.70	2.70	2.30
Jul-08	4.17	4.00	3.38	3.20	3.08	3.00	2.35	2.35	2.05
Aug-08	3.80	3.50	3.40	3.20	3.05	3.00	2.25	2.25	1.98
Sep-08	3.30	3.20	3.10	2.90	2.80	2.75	2.20	2.20	1.85
Oct-08	3.30	3.20	2.75	2.40	2.35	2.40	2.00	2.00	1.50
Nov-08	3.50	3.20	2.70	2.20	2.00	1.85	1.60	1.55	1.25
Dec-08	3.50	3.25	2.70	2.25	2.00	2.05	1.60	1.55	1.20
Jan-09	3.65	3.50	2.75	2.30	2.15	2.00	1.60	1.55	1.20
Feb-09	3.70	3.40	2.55	2.15	2.00	1.90	1.50	1.50	1.20
Mar-09	3.10	3.00	2.60	2.15	1.97	1.95	1.60	1.60	1.25
Apr-09	3.00	2.80	2.65	2.25	2.08	1.95	1.65	1.65	1.25
May-09	3.10	2.80	2.75	2.40	2.20	2.00	1.75	1.75	1.40
Jun-09	3.50	3.30	2.85	2.55	2.28	2.30	1.80	1.80	1.40
Jul-09	3.50	3.30	2.90	2.65	2.40	2.30	1.95	1.95	1.50
Aug-09	3.50	3.20	2.80	2.53	2.30	2.25	1.90	1.90	1.40
Sep-09	3.50	3.05	2.80	2.52	2.27	2.25	2.00	2.00	1.40
Oct-09	3.20	2.95	2.85	2.65	2.40	2.30	2.10	2.10	1.40
Nov-09	3.50	3.40	2.95	2.85	2.55	2.60	2.25	2.20	1.55
Dec-09	3.80	3.60	3.05	2.95	2.60	2.60	2.30	2.30	1.60
10yr High	4.80	4.50	3.78	3.60	3.35	3.30	2.70	2.70	2.35
10yr Low	2.68	2.45	2.05	1.70	1.40	1.28	1.37	1.35	1.04
Average	3.41	3.11	2.66	2.30	2.10	2.05	1.82	1.79	1.51
+/- High	-33%	-34%	-25%	-26%	-28%	-30%	-22%	-22%	-40%
+/- Low	19%	20%	39%	56%	71%	80%	53%	56%	35%
5 yr Av	3.58	3.29	2.78	2.41	2.21	2.16	1.85	1.83	1.53
High 5yr	4.80	4.50	3.78	3.60	3.35	3.30	2.70	2.70	2.35
Low 5yr	2.80	2.55	2.45	1.95	1.70	1.65	1.40	1.50	1.20

Annex 2. Nutrient Profile – Cashew Nuts

Nutrients in 100 grams

Nutrient	Units	Cashews	Nutrient	Units	Cashews
Calories	Kcal	570	Riboflavin	mg	0.20
Protein	g*	15	Niacin	mg	1.40
Total Fat	G	46	Pantothenic acid	mg	1.22
Saturated Fat	G	9	Vitamin B6	mg	0.26
Monounsaturated Fat	G	27	Folate	mcg	69
Polyunsaturated Fat	G	8	Vitamin B12	mcg	0
Linoleic acid (18:2)	G	7.66	Vitamin A	IU****	0
Linolenic acid (18:3)	G	0.16	Vitamin K	mcg	34.70
Cholesterol	mg**	0	Vitamin E		
Carbohydrate	G	33	Tocopherol, alpha	mg	0.92
Fiber	G	3	Tocopherol, beta	mg	n/a
Calcium	Mg	45	Tocopherol, gamma	mg	n/a
Iron	Mg	6.00	Tocopherol, delta	mg	n/a
Magnesium	Mg	260	Total Phytosterols	mg	158
Phosphorus	Mg	490	Stigmasterol	mg	n/a
Potassium	Mg	565	Campesterol	mg	n/a
Sodium	Mg	16	Beta-sitosterol	mg	n/a
Zinc	Mg	5.60	Carotenoids		
Copper	Mg	2.22	Carotene, beta	mcg	0
Manganese	Mg	0.83	Carotene, alpha	mcg	0
Selenium	mcg***	11.70	Cryptoxanthin, beta	mcg	0
Vitamin C	Mg	0	Lutein+zeaxanthin	mcg	23
Thiamin	Mg	0.20			

Annex 3. Cashew Specifications

Approved - April 1999

Specifications for Cashew Kernels AFI Nut & Agricultural Products Section

General Requirements

- A. Each shipment to the US, inspected or released by FDA and cleared by customs, shall be of good quality and be stored in accordance with good commercial practice.
- B. The cashews shall be packed in new, clean, dry, leakproof, lead-free containers with an airtight (hermetic) seal and without internal paper liners. Packaging shall be of sufficient strength to assure the integrity of the product during normal shipment and storage.

The outer container shall be constructed of a new cardboard, free of infestation and visual mold, and sealed without staples, unless otherwise specified by the end user.
- C. Only pesticides approved for use on cashews may be used, and residues must be within the tolerances set by the government of the importing country. No detectable residue is permitted for any pesticide that is not approved for use on cashews in the importing country.
- D. All cartons shall be clearly marked on each end with the following:
 1. Name of the product and trade name or brand name, if any.
 2. Name and address of producer or packer.
 3. Grade.
 4. Net weight.
 5. Country of Origin.
 6. Buyer's name or marks.
 7. Destination.
 8. Other marks agreed to by buyer and seller.
- E. Bill of Lading must list the number of cartons, source of origin, and the marks that are on the cartons.
- F. Excessive breakage is avoided by the control of moisture, and proper storage - packing - handling - and transportation. Fluctuations in temperature and humidity should be avoided also to protect the integrity of the product. At time of pack, breakage should not exceed 5% so that at time of delivery it does not exceed 10%.
- G. All shipments should be inspected prior to loading and shall be carried on conveyances suitable for transporting food products in good condition, i.e. free of odors, insect or mold damage, rodent activity, and all other foreign materials.
- H. The moisture level of the cashews should be 3%-5%.
- I. If a roast test is required in a contract, it should be conducted in accordance with Appendix II.

Quality and Grading

Cashew kernels are classified as: First Quality Fancy; Second Quality Scorched/Color Variation; Third Quality Special Scorched/Color Variation; Fourth Quality; and Dessert.

FIRST QUALITY FANCY cashew kernels have a uniform color which may be white, light yellow, pale ivory or light ash-grey.

SECOND QUALITY SCORCHED/COLOR VARIATION cashew kernels may be yellow, light brown, light ivory, light ash-grey or deep ivory.

THIRD QUALITY SPECIAL SCORCHED/COLOR VARIATION cashew kernels may be deep yellow, brown, amber, and light to deep blue. They may be slightly shrivelled, immature, speckled, blemished or otherwise discolored.

FOURTH QUALITY cashew kernels would qualify as First or Second Quality, except that they have pitted spots.

DESSERT cashew kernels may be scraped, shriveled, blemished or otherwise discolored.

Sizing

Sizing is compulsory in first quality/fancy cashew kernels but is optional for other whole grades.

The quantity of broken kernels or pieces in "whole" kernels shall not exceed 10% by weight.

The quantity of pieces present in "butts" and "splits" shall not exceed 10% by weight.

The quantity of the next lower size grade in "pieces" shall not exceed 5% by weight.

Size Designation	Count per	
	Kilo	Pound
180 (or SLW)	266-395	120-180
210 (or LW)	395-465	180-210
240	485-530	220-240
320	660-706	300-320
450	880-990	400-450

Whole (W)¹

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. This grade may also be designated as "W".

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. This grade may also be designated as "B".

Splits (S)

One half of a cashew kernel that has been split lengthwise, provided not more than 1/8 of this cotyledon has been broken off. This grade may also be designated as "S".

Pieces – See Table 3

Definitions

SERIOUS DAMAGE includes but is not limited to insect, rodent, or bird damage, visible mold - rancidity - decay, or adhering dirt - solder - shell - or mesocarp.

ADHERING MATTER - cashew meal or extraneous matter on the surface of the kernel causing permanent discoloration.

INSECT DAMAGE - is visible damage to the kernel from live or dead insects, mites in any stage of development, insect excreta or fragments - frass - webbing - boring - powdery residue - cast larval casings, and/or the evidence of insects or insect activity in the container.

RODENT DAMAGE - evidence of rodent activity.

BIRD DAMAGE - pieces of feather, bird excreta.

VISIBLE MOLD - mold filaments detectable with the naked eye.

RANCIDITY - is a breakdown of the oils in the kernel giving it an off-flavor or odor.

FOREIGN MATTER - includes but is not limited to shell, mesocarp, stones, dirt, glass, metal, solder, straw, twigs, sticks, plastic, hair, industrial fibers, paper and threads.

DEFECTS include superficial and intrinsic damage which adversely affects the appearance of the lot such as scorching, blemishes, discoloration, immature or shrivelled kernels, kernels with pitted black or brown spots, adhering testa, scrapes, flux marks, and speckles. Defects vary by grade. The presence of kernels of a lower grade are scored as defects.

SCORCHING - a discoloration due to over heating during shelling or blanching.

BLEMISHES OR DISCOLORATION - spots in aggregate in excess of 3 mm on the kernels from causes other than shelling or blanching.

IMMATURE - kernels are underdeveloped and do not have the characteristic shape of a cashew kernel.

SLIGHTLY SHRIVELED - a slight withering of the outer surface of the kernel.

SHRIVELED - a complete withering of the kernel that distorts its characteristic shape.

PITTED SPOTS - black, brown, or other colored spots in aggregate in excess of 1 mm caused by pre-harvest attack on the kernel.

ADHERING TESTA - skin on the surface of the kernel measuring greater than 2 mm in diameter in aggregate.

SUPERFICIAL DAMAGE - deep knife cuts on the surface of the kernel that change the characteristic shape of the nut.

FLUX MARKS - black or brown marks on the surface of the kernels caused by flux dripping onto them when a tin container is sealed.

SPECKLED - a brown stain which appears after removal of the testa on some kernels.

¹An excessive number 7/8th kernels or splits that detract from the appearance of the sampled lot may be the basis for claim.

Annex 4. Packing, Destination Procedures, Duties, and Buyers' Quality Control

Packing and quality control

Standardized packaging, quality assurance, pre-shipment inspection and traceability are important issues for exporters of cashew kernels. Food safety issues and buyers' compliance with their own HACCP, ISO or BRC control systems mean they are compelled to ask suppliers for compliance in these areas. In Europe, this is regulated at the EU level by legislation. In the US, the law is less demanding so individual buyers take responsibility. Experience has shown that US buyers are less likely to demand pre-shipment compliance, but are more likely to reject cargo for problems on arrival.

Traceability

Under EU law, it is required that each link in the marketing chain is capable of identifying where the product came from and be able to ask their supplier to trace back one step in the chain and provide evidence that they have done so. This is regarded as an interim measure until full traceability is introduced. The requirement for full traceability would present all sorts of problems for the cashew industry. It would mean that a sheller would have to be able to identify from which farm each and every carton of kernels came. This would be difficult in any region, but especially difficult for the 40% of cashew production which is exported every year to another country for shelling.

Cashew bulk packing standardized within international specifications

- 50 lb/22.68 kg net weight cartons.
- Containing either 2x25 lb or 1x50 lb vacuum or gas back flushed flexi packs.
- Shipped in sealed 20ft dry van containers, each containing 700 cartons (net weight 15.76 mt).
- Each carton to bear the product name, grade, weight and the name and address of the factory that processed the cashews.
- Variations: Some buyers still prefer 2x25 lb tins instead of vacuum flexi packs. Arabian Gulf buyers prefer 2x20 kg vacuum packs instead of 2x11.34 kg packs.

Import documents & regulations

- All EU shipments must be accompanied by a certificate from a recognized laboratory showing the goods to be within EU tolerance levels for Aflatoxin. The test must be conducted according to the European Union's methodology.
- For shipments to the US, all processing plants must register with the United States Department of Homeland Security via the Food and Drug Administration and appoint an agent. This can be done online. All documents and cartons must bear the processing plant's registration number.
- Certain countries require a Phytosanitary Certificate e.g. Australia, Russia, Greece, Turkey, and Spain.
- There is usually no import duty on raw cashew kernels. China is an exception, levying 6% import duty on cashews from India, while giving Vietnam and Indonesia preferential status.
- Roasted product often attracts an import duty. In the EU, roasted product attracts an import duty of 12%. There are certain agreements which allow import of processed product without payment of duty.
- Buyers usually look for the following documentation:
 - Commercial invoice
 - Original bills of lading and copies
 - Certificate of Origin
 - Certificate of quality and weight from a first class cargo superintendent
 - Aflatoxin Free Certificate, in accordance with EU legislation
 - Phytosanitary Certificate
 - Certificate of fumigation for the empty and stuffed container
- Buyers may also ask for:
 1. Certificate for absence of harmful microbiological activity e.g. Salmonella, E. coli.
 2. 'Roast Certificate' – a certificate from a cargo inspector showing that the goods have an even color and taste after test roasting.
 3. Child Labor Certificate – a document testifying that no child labor was used in the course of manufacturing the product.

Organic imports must comply with the import legislation, but certifying bodies are better qualified to advise on this.

Organic certification bodies include:

SKAL, Netherlands	www.skal.com
OCIA, US	www.ocia.irc
QAI, US	www.qai-inc.com
Ecocert, France	www.ecocert.com
ACO, Australia	www.australianorganic.com.au
BCS, Germany	www.bcs-oeko.com
Soil Association, UK	www.soilassociation.org

Standard terms

There are a number of standard terms and conditions which are employed by importers to make negotiation easier. These also cover dispute resolution (usually through an arbitration service)

A contract of sale must include:

Description:	Origin, grade, size, current crop at time of shipment
Quality:	American Association of Foods Industries (AFI) specification Or Cashew Export Promotion Council of India specification Or buyers' specification
Quantity:	Full 20-ft containers (35,000 lb)
Price:	USD per lb
Basis:	Free on Board or Cost and Freight
Terms:	Association of Food Industries (US) terms, conditions and arbitration Combined Edible Nut Trade Association of London terms Dutch Dried Fruit Association terms Hamburger Waren Verein terms

Pre-shipment inspection

Buyers will usually insist on pre shipment inspection. The inspection generates documents verifying the quality of the goods, conformity with the specification, and the suitability and cleanliness of the container in which they are shipped. The tables which follow summarize each stage regarding controller, location and shipping document. These take the buyers' point of view, and so cover the tracking of the container until its arrival.

Cashew Nuts

Origin shipment inspection

Action	Controller	Location	Documentation
Pre-stuffing			
Empty Container fumigation	Shipping agent	Container terminal	Certificate of cleanliness
Pre loading inspection of container	Independent inspector	Suppliers factory/packing centre	Included on quality certificate
Loading			
Product inspection 1. Specification & weight	Independent inspector Our employee	Suppliers factory	Quality Certificate
Product inspection 2. Sampling for microbiological activity, pesticide residue & aflatoxin	Independent inspector Our employee	Suppliers factory	Independent Laboratory certificates
Product inspection 3 Roast Test	Independent inspector Our employee	Suppliers factory	Roast test certificate
Product inspection 4	Independent laboratory	Laboratory Samples brought by Independent inspector	Absence Micro activity, Aflatoxin Certificate.
Product inspection 5	Government authority & independent inspector	Suppliers factory	Phytosanitary Certificate
Affixing of labels to tins to ensure no substitution	Independent inspector	Suppliers factory	Label number mentioned on of quality
Stuffing of container	Independent inspector Supplier representative Customs Officer	Suppliers factory	
Sealing of Container	Independent inspector Supplier representative Customs Officer Shipping line representative	Suppliers factory	Seal as per blading

Cashew Nuts

Quality Assurance and Security

Pre shipment	During Shipment	Post shipment
1. Vendor Vetting & Approval	9. Container review	14. Seal integrity
2. Product inspection	10. Container stowage	15. Fast movement & delivery
3. Product Testing	11. Vessel tracking	16. Re-inspection
4. Product Analysis	12. Container tracking	17. Shipment review
5. Container inspection	13. Documents validation	18. Procedural review
6. Loading supervision		
7. Joint sealing of container		
8. Customs intervention		

Annex 5. Grade Comparison

Grading comparison across origins

India/Africa	Brazil	Common trade name	Count/sieve size
W 180	SLW1	-	160/180
-	SLW2	-	160/180
-	LW1	-	180/210
-	LW2	-	180/210
W 210	-	-	200/210
SW 210	-	-	200/210
W 240	W1 240	-	220/240
SW 240	W2 240	-	220/240
W 320	W1 320	-	300/320
SW 320	W2 320	-	300/320
W 450	W1 450	-	400/450
SW 450	W2 450	-	400/450
-	W1	-	mixed sizes (210/400)
SW	W2	‘Scorched wholes’	mixed sizes (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)

India/Africa	Brazil	Common trade name	Count/sieve size
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)
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

Notes:

The above table is drawn from the AFI Specifications of October 1997. The sieve sizes have changed from the 1990 specifications, with respect to SP, SSP and G.

X grade is undefined by the AFI.

(T) tacked on the end of the Brazilian grades refers to the dry roasted/toasted product - i.e. SP3-T

P1M and P2M are undefined by the AFI. These grades are the intermediate grades between P and SSP, consisting of mixed pieces.

Annex 6. Cashew Retail Products and Prices

The study looked at retail products in nine countries. The vast majority of cashew products on offer are whole cashews, usually roasted and salted. In the US, one is more likely to find broken with ‘Wholes & Halves’ or ‘Halves & Pieces’ being used as mixes to hit specific price points in supermarkets. Pieces are uncommon in Europe and are usually sold as raw nuts in mixes such as ‘Student Mix’ or ‘Trail Mix’.

Cashews are not sold as constituent ingredients to any great degree. There are products such as cashew chocolate and cashew biscuits, but for the most part, these are low volume alternative items. Cashew butter can be found in most markets and is a low volume item. Sources in the industry indicate that cashew butter products have often evolved as an outlet for small pieces which are sieved off the snack food production lines.

There is one development worthy of specific mention which is the new Ritter product, cashew chocolate. This is an organic product and could constitute an opportunity for the future.

The study looked at 70 prices for product in nine countries, including EU countries, the US, Australia, and Singapore. The prices were obtained by visiting the supermarkets, in the case of the UK and Ireland, and making online enquiries to supermarket websites, or telephone enquiries. The information gleaned gives only a ‘flavor’ of the market and is not presented as either exhaustive or statistically significant. The lists attached are actual prices and can be used as guidelines to the individual markets.

Price indications for retail products

Average of 70 products over nine countries

Type	Average Price \$ per kg	Premium over Conventional
Conventional Roasted	20.69	N/a
Organic Roasted	31.73	53%
Fair-trade Roasted	26.00	26%
Conventional Raw	12.81	N/a
Organic Raw	22.75	77%
Fair-trade Raw	21.54	68%

Sources: *Ingredient Sourcing Solutions, Trade*

Note: See detailed listing at the end of this annex

Given that the normal premium for organic cashews in bulk is in the 20-25% range, it appears that retailers want to attain a significantly higher margin on organic product than is the norm. This is sometimes justified as being necessary to handle low volume specialist items. On the fair-trade side, the study's prices are skewed toward the UK market as it was difficult to find fair-trade product for sale in supermarkets elsewhere. The unroasted cashew price premium is probably a much better indicator of the fair-trade market as this study found more products for sale unroasted than roasted).

One can conclude that premiums for fair-trade and organic cashews are present at the retail level. These are higher than on the wholesale market. The level of these premiums at present may well work against growth in demand.

Sample of outlets stocking organic and/or fair-trade products

Outlet	Number of cashew products	Number of organic products	Number of fair-trade Products
Wal-Mart, US	18	0	0
Nuts Online, US	17	4	0
Ocado, US	14	3	1
Tesco, UK	10	1	1
Sainsbury, UK	10	1	3
Asda, UK	10	3	0
Lidl, UK	2	0	0

Sources: *Ingredient Sourcing Solutions, Trade*

Retail premiums for organic and fair-trade in different countries

Country	Conventional Roasted /Raw Cashews Average price \$/kg	Organic oasted/Raw Cashews Average price \$/kg	Premium %	Fair-trade Roasted/Raw Cashews Average Price \$/kg	Premium
Australia	18.91	38.66	104%	N/a	88%
Germany	21.06	34.01	61%	N/a	
UK	11.20	19.95	78%	21.11	
US	13.21	31.00 Roasted 21.09 Raw	134% 60%		

Sources: *Ingredient Sourcing Solutions Protocol, Trade*

It appears that the premiums which supermarkets charge their customers are much higher than the general wholesale or commodity market premium. This reflects the higher price of the items, but goes beyond that. If one checks premiums for other organic or fair-trade items, one does not find levels as high. The extra cost then is probably due, as supermarkets claim, to the cost of handling specialist items and may reduce as the availability of organic or fair-trade increases.

Examples of marketing costs

Based on an actual UK example of 1 container load

1. WW320 cashew Cfr UK	\$6.17 per kg
2. Cost of landing and delivery to roaster	\$0.11 per kg
3. Roasting cost £400 per one	\$0.70 per kg
4. Packing cost	\$1.50 per kg
5. Cost of product ex works	\$8.48 per kg
6. Packers gross margin	\$1.70 per kg
7. Packers sale price ex works	\$10.18 per kg
8. Retailers margin 35% of sale ox.	\$ 4.07 per kg
9. Retail price	\$14.25 per kg

- Distribution costs not estimated.

Examples of cashew products

Whole Cashews Roasted and Salted - Conventional Organic Fair-trade

Whole Cashews Roasted and Lightly Salted

Whole Jumbo Cashews Roasted and Salted

Cashew Halves and Pieces Roasted and Salted

Whole Cashews Dry Roasted

Cashew Wholes Raw

Cashew Pieces Raw

Honey Roasted Cashews

Cashew and Peanuts Roasted and Salted

Mixed Nuts Roasted and Salted

Cashews and Raisins Raw

Chili Flavor Roasted Cashews

Pepper Flavor Roasted Cashews

Cashew Butter

Cashew and Cocoa Biscuits Organic

Cashew and Honey Biscuits Organic

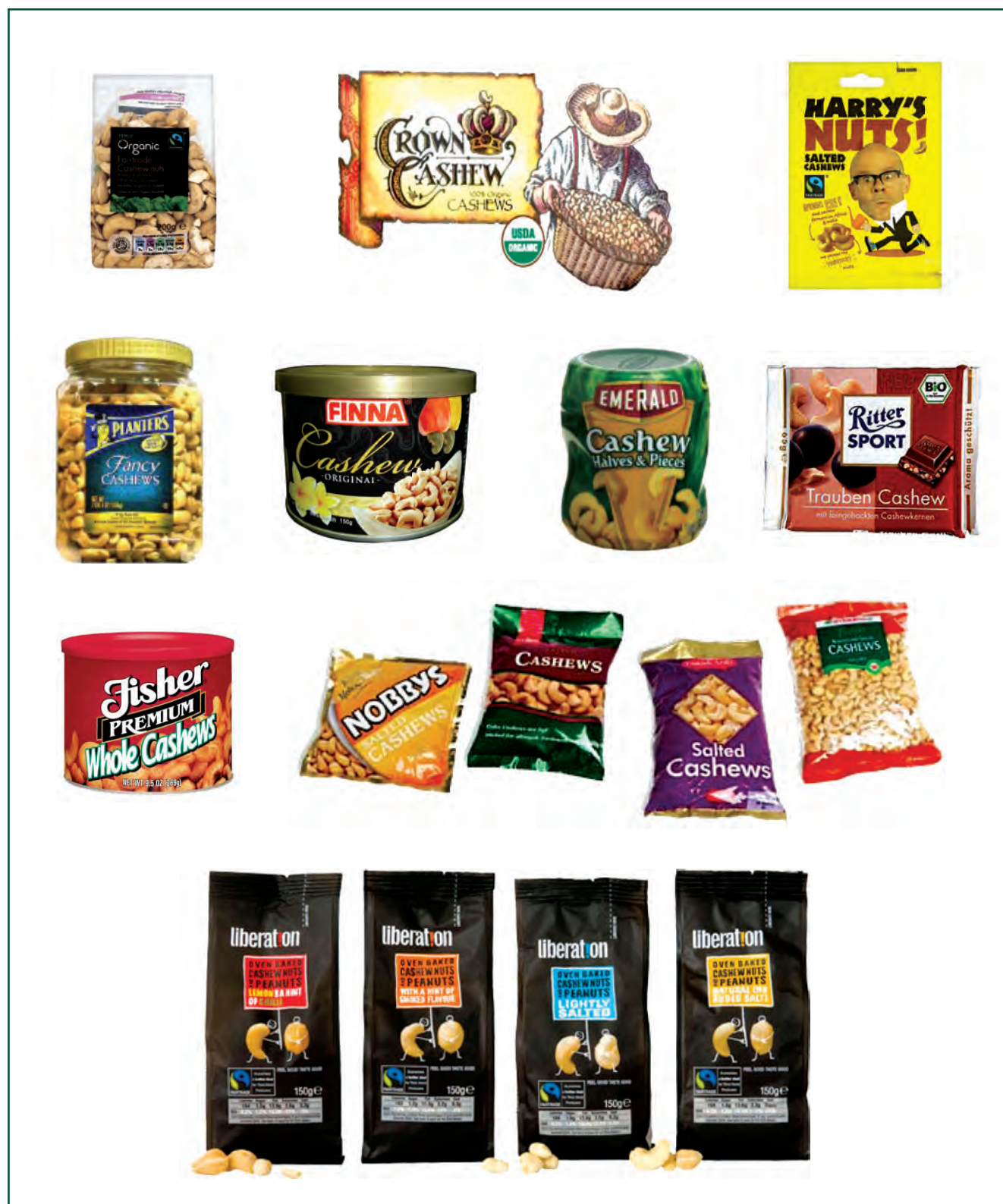
Gourmet Jumbo Cashews

Cashew Brittle

Yoghurt Coated Cashews

Chocolate Coated Cashews

Cashew products from around the world



Cashew prices based on retail price survey

Ranked by Country

Cashew Nuts sample prices

Country	Supplier	Grade	Quantity	Type		Price	Packing	Kgs	Curr/kg	USD/kg
Australia	S. Natural Organic Food	WW320	Wholesale	Organic	Raw	\$173.88	11.34kg	11.340	\$15.33	\$10.09
Australia	Woolworth	Pieces	Retail Pack	Conventional	Roasted	\$12.97	750grms	0.750	\$17.29	\$11.38
Australia	Kitchen Discounts	WW320	Retail Pack	Organic	Roasted	\$10.99	500g	0.500	\$21.98	\$14.46
Australia	Santos	WW320	Retail Pack	Conventional	Roasted	\$7.65	300grms	0.300	\$25.50	\$16.78
Australia	Coles	WW320	Retail Pack	Conventional	Roasted	\$12.00	375grms	0.375	\$32.00	\$21.05
Australia	Organic Way	WW320	Retail Pack	Organic	Roasted	\$12.00	200grms	0.200	\$60.00	\$39.47
Australia	Willowvale Organic	WW320	Retail Pack	Organic	Roasted	\$60.90	1kg	1.000	\$60.90	\$40.07
Australia	Eco Organics	WW320	Retail Pack	Organic	Roasted	\$12.63	200grms	0.200	\$63.15	\$41.55
Australia	ECO Organics	WW320	Retail Pack	Organic	Roasted	\$12.96	200grms	0.200	\$64.80	\$42.63
Australia	Willowvale Organic	WW320	Retail Pack	Organic	Roasted	\$16.35	250grms	0.200	\$81.75	\$53.78
Canada	Hickory Farms	WW320	Retail Pack	Conventional	Roasted	\$16.00	420grm	0.420	\$38.10	\$38.10
France	Coop Biothtic	WW320	Retail Pack	Organic	Roasted	€1.80	120grms	0.120	€15.00	\$18.75
France	Alter Eco	WW320	Retail Pack	Fairtrade	Roasted	€2.60	125grms	0.125	€20.80	\$26.00
Germany	Trade	WW320	Wholesale	Organic	Raw	\$8.00	1kg	1.000	\$8.00	\$8.00
Germany	Bio King	WW320	Retail Pack	Organic	Raw	€3.99	400grms	0.400	€9.98	\$12.47
Germany	Xanazon	WW320	Retail Pack	Conventional	Roasted	€11.70	1kg	1.000	€11.70	\$14.63
Germany	Xanazon	WW320	Retail Pack	Conventional	Roasted	€6.70	500grms	0.500	€13.40	\$16.75
Germany	Xanazon	WW320	Retail Pack	Organic	Raw	€18.70	1kg	1.000	€18.70	\$23.38
Germany	Boinsel	Pieces	Retail Pack	Organic	Roasted	€1.99	100gr	0.100	€19.90	\$24.88
Germany	Xanazon	WW320	Retail Pack	Organic	Raw	€10.10	500grms	0.500	€20.20	\$25.25
Germany	Ueltje	WW320	Retail Pack	Conventional	Roasted	€2.59	125grms	0.125	€20.72	\$25.90
Germany	Khao Shong	WW320	Retail Pack	Conventional	Roasted	€3.99	185grms	0.185	€21.57	\$26.96
Germany	Boinsel	WW320	Retail Pack	Organic	Roasted	€2.49	100gr	0.100	€24.90	\$31.13
Germany	Rapunzel	WW320	Retail Pack	Organic	Roasted	€3.69	125grms	0.125	€29.52	\$36.90
Ireland	Tesco Cashew Wholes Nat.	WW320	Retail Pack	Conventional	Raw	€3.46	300grms	0.300	€11.53	\$14.42
Ireland	Harvest Fare natural	WW320	Retail Pack	Conventional	Roasted	€2.68	200grms	0.200	€13.40	\$16.75
Ireland	Tesco Roasted & Salted	WW320	Retail Pack	Conventional	Roasted	€2.98	200grms	0.200	€14.90	\$18.63
Italy	Altromercato	WW320	Retail Pack	Organic	Roasted	€1.20	50grms	0.050	€24.00	\$30.00
Netherlands	Trade	WW320	Wholesale	Organic	Raw	\$8.36	1kg	1.000	\$8.36	\$8.36
Netherlands	Natural Protocol	WW320	Wholesale	Conventional	Raw	€4.95	1lb	0.454	€10.91	\$13.64
Netherlands	Jack Klijn (Nut Company)	WW320	Retail Pack	Conventional	Roasted	€4.29	150grms	0.150	€28.60	\$35.75
Singapore	Darnest	W160	Retail Pack	Conventional	Raw	SGD 22.00	1kg	1.000	SGD 22.00	\$33.44
Switzerland	Vegi Service	WW320	Retail Pack	Fairtrade Organic	Raw	€3.60	200grms	0.200	€18.00	\$22.50
Switzerland	Just Bio	WW320	Retail Pack	Organic	Raw	SFr. 6.90	150grms	0.150	SFr. 46.00	\$38.33
UK	Dwyfor	LWP	Catering	Fairtrade	Raw	£18.27	2kg	2.000	£9.14	\$15.99
UK	Trade	WW320	Bulk	Fairtrade	Raw	\$9.52	1kg	1.000	\$9.52	\$9.52
UK	ASDA	WW320	Retail Pack	Conventional	Raw	£1.60	250grms	0.250	£6.40	\$11.20
UK	Wholesale/Conventional	WW320	Bulk wholesale	Conventional	Raw	£11.40	11x130	1.430	£7.97	\$13.95
UK	Whitworth	WW320	Retail Pack	Organic	Raw	£1.07	100grms	0.100	£10.70	\$18.73
UK	ASDA	WW320	Retail Pack	Organic	Raw	£1.10	100grms	0.100	£11.00	\$19.25
UK	Suma organic/Fairtrade	WW320	Retail Pack	Fairtrade Organic	Raw	£2.85	250grms	0.250	£11.40	\$19.95
UK	Sainsburys	WW320	Retail Pack	Fairtrade	Raw	£3.49	300grm	0.300	£11.63	\$20.36
UK	Equal Exchange/Fairtrade	WW320	Retail Pack	Fairtrade	Raw	£2.99	250grms	0.250	£11.96	\$20.93
UK	Sunfood Nutrition	WW320	Retail Pack	Organic	Raw	£12.50	1kg	1.000	£12.50	\$21.88
UK	Dwyfor	WW320	Catering	Fairtrade	Raw	£25.34	2kg	2.000	£12.67	\$22.17
UK	Tesco	WW320	Retail Pack	Fairtrade	Raw	£1.99	150grms	0.150	£13.27	\$23.22
UK	Tesco	Jumbo	Retail Pack	Conventional	Roasted	£3.99	100gr	0.500	£7.98	\$13.97
UK	Suma/Pre pack/Conventional	WW320	Retail Pack	Conventional	Roasted	£1.99	250grms	0.250	£7.96	\$13.93
UK	Tesco	WW320	Retail Pack	Conventional	Roasted	£1.69	200grms	0.200	£8.45	\$14.79
UK	ASDA	WW320	Retail Pack	Organic	Roasted	£2.44	200grms	0.200	£12.20	\$21.35
USA	Just Cashews	WW320	Commodity	Conventional	Raw	\$2.75	1lb	0.454	\$6.06	\$6.06
USA	The Nut Factory	LWP	Retail Pack	Conventional	Roasted	\$7.80	2lbs	0.910	\$8.57	\$8.57
USA	The Nut Factory	LWP	Retail Pack	Conventional	Roasted	\$8.00	2lbs	0.910	\$8.79	\$8.79
USA	Just Cashews	WW320	Bulk	Organic	Raw	\$4.80	10lbs	0.454	\$10.57	\$10.57
USA	The Nut Factory	WW320	Retail Pack	Conventional	Roasted	\$11.08	2lbs	0.907	\$12.21	\$12.21
USA	Bergin	Pieces	Retail Pack	Conventional	Roasted	\$13.04	32oz	0.910	€13.04	\$13.04
USA	Almond Bros	Pieces	Retail Pack	Conventional	Raw	\$5.99	1lb	0.454	\$13.21	\$13.21
USA	Costco / Kirkland	WW240	Retail Pack	Conventional	Roasted	\$34.99	2x2.5lbs	2.270	\$15.41	\$15.41
USA	Now Foods	WW320	Retail Pack	Conventional	Roasted	\$5.27	12oz	0.338	\$15.61	\$15.61
USA	The Nut Factory	W160	Retail Pack	Conventional	Roasted	\$15.80	2lbs	0.910	\$17.36	\$17.36
USA	Virginia Favorites	WW320	Retail Pack	Conventional	Roasted	\$18.00	25oz	0.710	\$18.00	\$18.00
USA	Planters	Pieces	Retail Pack	Conventional	Roasted	\$18.01	37oz	1.050	€18.01	\$18.01
USA	Planters	WW320	Retail Pack	Conventional	Roasted	\$19.33	38oz	1.080	€19.33	\$19.33
USA	Bergin	W160	Retail Pack	Conventional	Raw	\$20.19	32oz	0.910	€20.19	\$20.19
USA	Nuts Online	WW320	Retail Pack	Organic	Raw	\$9.49	1lb	0.450	\$21.09	\$21.09
USA	Vicky Lynn	WW320	Retail Pack	Conventional	Roasted	\$27.50	3lbs	1.360	\$20.22	\$25.28
USA	Nutsonline	WW320	Retail Pack	Organic	Roasted	\$12.99	1lb	0.450	\$28.87	\$28.87
USA	Nuts Online	WW320	Retail Pack	Organic	Roasted	\$12.99	1lb	0.450	\$28.87	\$28.87
USA	Emeralds	WW320	Retail Pack	Conventional	Roasted	\$29.01	54oz	1.530	€29.01	\$29.01
USA	Just Cashews	WW320	Retail Pack	Organic	Roasted	\$5.95	6oz	0.169	\$35.25	\$35.25

Annex 7. The Cashew Nut Shell Liquid Market

Cashew Nut Shell Liquid (CNSL) is a by-product of cashew processing. It is the pericarp fluid of the nut, a viscous liquid contained in the honeycomb inner shell of the raw cashew between the shell and the kernel. It is the substance which makes cashew shelling by traditional hand methods difficult as it causes blisters on workers hands. Gloves are sometimes worn for protection in the shelling process, but more often than not, the nuts and hands are coated in ash or some other absorbent material for protection. CNSL has an economic value and can provide many phenolic compounds with far greater versatility than petrochemical phenols. It is traded under tariff heading 13021920.

Summary

- CNSL has a long history of use in the manufacture of brake linings due to its high heat resistant properties and epoxy coatings. Today there are a myriad of uses for CNSL, ranging from automotive brake linings to paints, varnishes and even as boiler fuel. Exports to the US from India go back to the 1920s, with a surge during World War II.
- Having gone through a slump in the 1990s, CNSL demand has proven resilient in recent years, with Indian exports making a major recovery, and Brazilian exports steady and more dependent on crop size and availability, than demand.
- It appears that the outlook for the marketing of CNSL is positive. It has an expanding range of applications due to being a natural phenol (as opposed to a carbon based petro-chemical) and likely price advantages, as oil prices rise.
- The CNSL market is not a commodity market as such, and lacks standardization or any open market information system. It displays many of the features of a specialist ingredients business.
- There are value addition opportunities in refining and further processing CNSL.

Production/extraction

CNSL is only a by-product. The vast majority of cashew shelling factories worldwide do not commercialize the product either, as it is not a by-product of their production method, or because they retain it for use as fuel within their own enterprises.

India is the largest producer of CNSL (estimated at 45,000 mt). Brazil is the largest exporter, with average exports over the years of around 17,000 mt, although within the last few years, this has risen to 35,000 mt per year. Other origins such as Vietnam and Tanzania export volumes that are far behind the two main suppliers, India and Brazil.

By weight, cashew nuts comprise 50% shell, 25% kernel (including testa), and 25% shell liquid. The astringent shell liquid is removed prior to shelling to allow handling of the nut and prevent the liquid from damaging the nut kernel. Kernels damaged by the dark shell liquid will be discolored and may have a serious 'off flavor'. The CNSL is removed either by drum roasting in high temperature oil/CNSL or by steaming, and the volumes

recovered differ. With drum roasting, production is 10-12% of a possible 25%. With steaming, production is 20-25%, as it is possible to use an expeller. The use of a centrifuge following drum roasting boosts recovery levels. CNSL can also be produced from shells by using the 'cold press' method in an extraction unit.

Drum roasting cashew nuts by immersing them in a hot oil bath at 190 degrees Celsius alters the CNSL (converting anacardic acid to cardanol). This is known as 'Technical CNSL' and is better for some applications.

Characteristics and applications for CNSL differ between origins, but these are user specific, and cannot be generalized here.

In India, most factories use drum roasting but some are now moving to the steam process as it produces a better quality kernel. The Mangalore factories that use steam produce 21,000 mt of India's 60,000 mt of CNSL, although their proportion of total kernel production is much lower. Karnataka State factories, which process large volumes of kernels produce about 20,000 mt, and the balance of CNSL production is spread over India's other cashew producing areas. The export of CNSL from India received a significant boost last year following lobbying by the trade. CNSL was included in an export incentive scheme which allows offsetting import duties against export scrip.

Given that India processes approximately 1.1 million tonnes of in-shell cashews per year, potential CNSL production is about 160,000 mt, assuming that half the factories use steaming. However, as many of the processing units are small, seasonal, and based on low levels of capital investment, it is highly unlikely that this figure, or anything close to it, will be realized in the medium term. For India's supply of commercial CNSL to grow, major consolidation of the industry is likely needed, and this would require heavy and widespread capital investment. In addition, rising energy costs reduce the incentive to commercialize CNSL, rather than use it as a fuel.

India has a significant secondary industry refining CNSL into cardanol and other usable products. Indian exports are approximately 75% CNSL and 25% cardanol.

In Brazil, CNSL is produced by all ten processors. Recovery is about 12% of in-shell weight. This gives overall production for 2009 of 38,400 mt, and for 2010, about 32,000 mt are projected. Production is clearly linked to the size of the cashew crop which has varied from 250,000 mt to 320,000 mt in recent years. Exports of CNSL have once or twice reached as high as 35,000 mt (2005), but in recent years have been just under 20,000 mt per year. Producers earn more from exporting CNSL, but it also can be sold to the domestic bio fuel sector, which is well developed in Brazil. There are no signs of difficulty in commercializing the volumes of CNSL produced each year.

Commercialization in other countries is low. Vietnam is capable of producing large quantities of CNSL, given its position as a major sheller. But while interest in CNSL exports, and exports themselves are growing, in 2007 only 21 mt were exported, and in 2008, anecdotal evidence suggests exports were only 600 mt. In total about 65,000 mt of CNSL are produced annually, with commercial sales closely linked to petroleum and petro chemical prices. Tanzania also produces CNSL, but export quantities are small. Trade sources mention Nigeria as an exporter, but there is no hard data to support this.

Uses of CNSL

Insulating varnishes	Water proofing
Epoxy resins	Preservative
Laminating resins	Boiler fuel
Automotive brake linings	Oil soluble resins
Rubber compounding resins	Bio fuel blends
Foundry chemicals	Polyurethane-based polymers
Electrical conductors	Tropical medicine for treating a number of afflictions
Paints	Flame retardation in rubber
Marine antifouling coating	Adhesive

Industrial characteristics of CNSL

High refractive index (thicker oil)	Polymerization by different means
Viscous	Soluble in organic solvents
High iodine (coatings)	Resistance to electricity, water, acid, alkali
High FFA	Low cost phenol
Heat resistant	Heat dissipation
May be suitable for fuel blending	

Environmental hazards of CNSL

Use of the drum roasting method creates toxic fumes as the anacardic acid changes form. Uncontrolled emissions can cause discoloration of leaves on trees near to processing plants. If a cashew factory introduces a refining process, a range of emissions will be created and potential CNSL producers must be prepared to address these.

CNSL trade

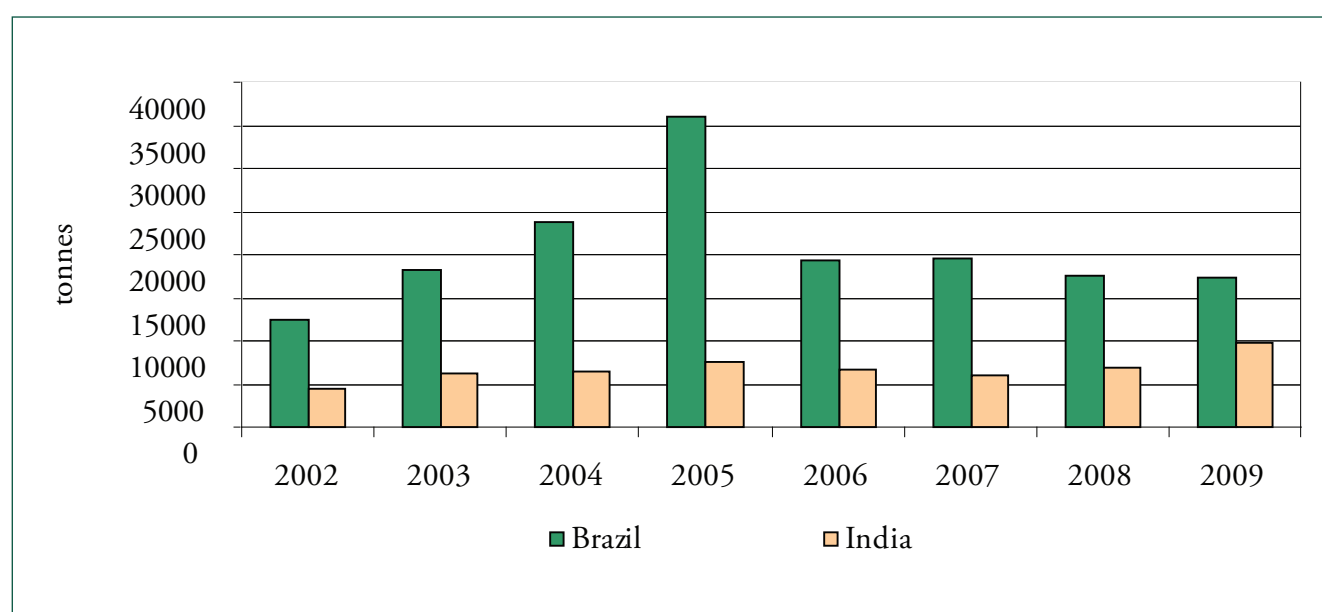
At present, excluding fuel uses, the export market is probably about 25,000 mt. As often found with cashew nuts, it is difficult to get exact numbers for CNSL exports. As a rule, the product is traded under a ‘catch all’ tariff heading. The Indian domestic market absorbs about 35,000 mt which are commercialized as CNSL. In addition, as mentioned above, large quantities of CNSL are consumed in all origins as fuel for cashew shelling plants. In Brazil, the product is a major fuel additive.

CNSL is usually shipped in drums, although tanker containers are sometimes used.

CNSL exports

As seen in the chart below, Brazil dominates the CNSL market, followed by India. Vietnam shipped about 600 mt in 2008, but this excludes quantities that may have been exported to China as boiler fuel under an unknown tariff heading. Vietnam made major strides in CNSL exports in 2009; for the first ten months of the year, shipments to the US were 1,216 mt as compared with only 305 mt for all 2008. African exports are low, with Tanzania leading at 175 mt.

CNSL exports from main origins (tonnes)



The main market for CNSL is the US, which takes half the Brazilian and almost the entire Indian export volume. Japan, Korea, the UK, China, and Belgium are also destinations, but demand tends to be inconsistent, possibly due to fluctuating petroleum prices rather than to CNSL itself.

The export trade has recovered in recent years. In India, for example, exports declined from 5,500 mt in 1991, to 700 mt in 1996, but grew again to just over 8,000 mt in 2008. Petroleum prices and demand for heat resistant natural products have most likely influenced this growth in demand as cashew prices as a whole seem to have little influence on buyers' decisions. The CNSL market lacks standardization or any open market information system. It displays many of the features of a specialist ingredients business.

Pricing

Values range from \$250 per tonne FOB India, to a high of \$575 per mt, as seen in 2009 at the peak of cashew prices. However, many aspects of this trade are customer and specification specific so the range of prices reflects factors other than simple market volatility.

A major order can alter the market dramatically, as seen in India in July 2008 when shipments to the US were 1,905 mt compared to 175 mt the previous July. This development had little to do with price, as prices declined by about 30% between June and July 2008, and were, in fact very similar to the previous July.

India Average Export Prices

	2007	2008	Current market	Cardanol Current
US\$ per mt FOB India	\$348	\$515	\$485	\$1080

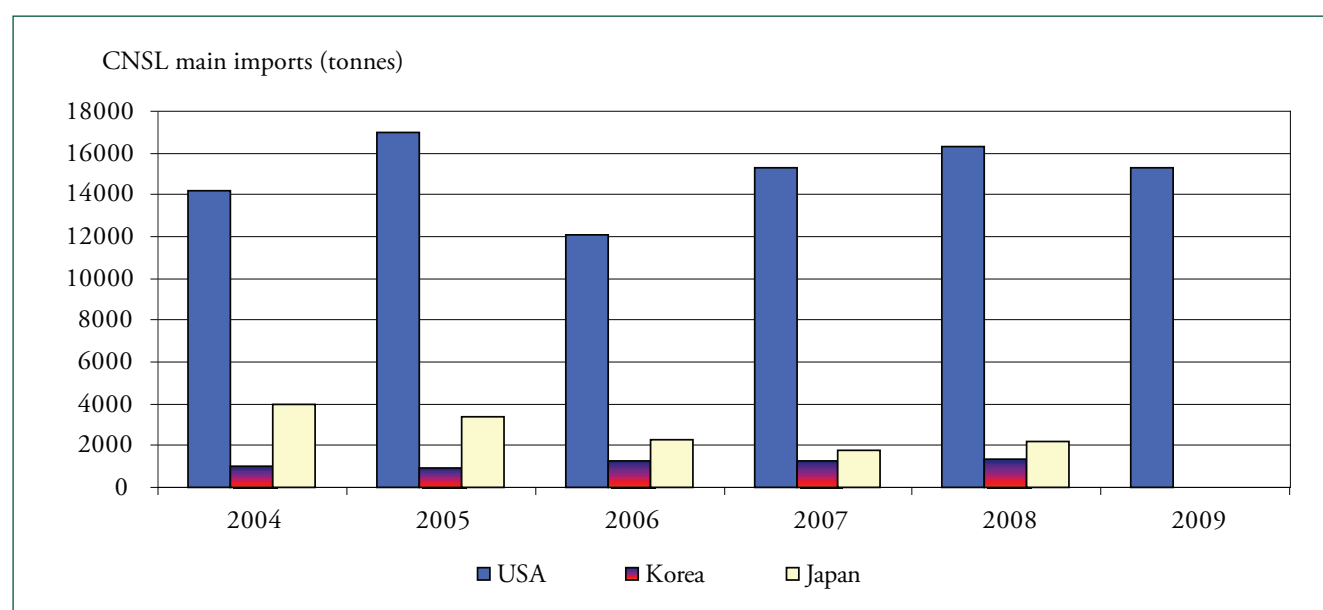
Brazil Average Export Prices

	2004	2005	2006	2007	2008	Current
US\$ per mt FOB	\$170	\$170	\$250	\$250	\$570	\$475

Destination markets for CNSL

The market is dominated by the US, with Korea and Japan as other significant markets. Spain, Belgium, Sweden, Zimbabwe, the UK, China, and Indonesia, among others are also buyers, but inconsistently.

CNSL main imports (tonnes)



Prospects are good for developing the Chinese and Indian markets. There is little indication of any significant growth in the traditional industries using CNSL in the US. In fact, in non-traditional applications, an environmentally-friendly product like CNSL may well benefit from technological developments which increase demand.

Recent developments in CNSL marketing

2008 saw a sharp rise in the prices of CNSL. Higher raw material prices, allied with higher oil prices and better demand stimulated prices from mid year. The latter rather than the former seems to have more influence, as CNSL prices moved up long after cashew kernel prices had moved up. There has not been any great interest on the part of processors to market CNSL, with the exception of Vietnam, where exports to the US of the previously-neglected by-product grew over the year.

As can be seen from the above chart for imports, in 2009, US demand for CNSL dropped sharply. US imports in 2009 for ten months to October, were down by 49%, which was largely due to the 18 preceding months of economic decline. Brazil was particularly badly damaged, with exports to the US reduced to almost nothing for the first 10 months of 2009. As Brazilian processors lack large storage capacities for CNSL, the unsold product is usually sold to the local bio-fuel market at reduced prices. There will not be a build-up of inventory but clearly prices will come under pressure as the delayed Brazilian harvest arrives.

The outlook for CNSL is for increased usage, diversified into a number of industries. Major growth in demand will be experienced if current research indicates that initial tests show CNSL is an efficient additive to gasoline, with no negative effects on engine performance or components. This would be surprising though because in WWII, CNSL was used to sabotage engines by pouring it into the engine block.

Marketing strategy for CNSL

- Any strategy must first consider the comparative costs and advantages of using CNSL and cashew shells rich in it for fuel, as opposed to purchasing fuel/electricity. Given the link between CNSL and petrochemical prices, it is likely that the sale of CNSL will continue to be worthwhile, but this must be assessed in each case as prospects depend on local as well as international market factors.
- In order to maximize the economic impact on the enterprise, the refining of this by-product should be assessed. The value of the refined product can be between 5-10 times the value of technical CNSL.
- A marketing strategy based on targeting regional markets, in particular Korea, Japan, and to a lesser extent China, is proposed. Two of these have ready markets, and China has excellent growth potential.
- There is little point in attempting to maximize price returns by having a wide range of customers. Instead, the author recommends identifying one or two customers for any given shelling operation. To maximize quality, the customer should be involved from the planning stage, as for example, to ensure correct storage and handling methods.
- The returns from CNSL can be significant. A 5,000 mt in-shell processing plant using drum roasting could sell 500 mt per year, or 1000 mt per year using steam cooking, with a gross sale value in the range of \$250,000-500,000 per year. Given that CNSL is a by-product, the investment in correct handling equipment is minimal.
- Further investment in refining capacity, perhaps as a joint venture with a customer, is likely to pay off. The author has read project proposals in India with pay back periods of around three years.

Technical information and specifications are available at www.cashewindia.org, the website of the Cashew Export Promotion Council of India.

The Indian Standards Institution standard for untreated cashew nut shell liquid is IS 840:1964 (available at www.bis.org.in).

Major players in CNSL purchasing

Some Major Players in CNSL

Cimteclab, Italy	www.cimtec-holding.it
Palmer International, USA	www.palmerint.com
Palmer International, UK	www.plamerint.com
Cardolite, Belgium	www.carcanol.be
Cashew Co., Japan	www.cashew.co.jp

Annex 8. Other Cashew By-products

Cashew nut shell cake (De-oiled)

Cashew nut shell has a High Heating Value of 18.84 mj/kg and is highlighted on the Bio Fuels Database in East Asia Project (www.asiabiomass.jp).

Cashew nut shell cake is the residue of shell after the kernel has been removed and the shell liquid extracted. The shell residue is crushed and used as a fuel in the cashew industry, the tile industry, and other industries with high energy requirements. It has a calorific value of approximately 5,000 kcal/kg, according to one Indian processor. This product is a by-product of off-site CNSL extraction, and most cashew processors utilize the shell cake themselves as fuel. If a processing plant has a surplus and if there is a suitable customer nearby, it may be worth commercializing this waste product. Value will depend entirely on the cost of competing energy sources.

There is a suggestion that cashew shell cake could be made into a heat resistant board, but this has not been demonstrated in tests or commercial production.

India

Cashew shell price	\$86 per mt
Cashew cake price	\$61 per mt

Cashew testa

The testa is skin or husk between the pericarp and the nut kernel. It is removed in the shelling process after the nuts have been heated. Peeling can be done by hand, or by peeling machines, as long utilized in Brazil. Mechanization of peeling is becoming more popular in India and Vietnam as labor costs rise.

Cashew testa is used as a vegetable tanning material, producing reddish colored, tough leather. It is widely used in India and produced under Bureau of Indian Standards standard IS 1640-2007, which is available online.

It is also used as a poultry and ruminant feed. Cashew testa is a very low value item and indications of value are difficult to obtain as trade tends to be localized.

Cashew nut oil

Cashew oil is the oil produced by crushing cashew nut kernels (as opposed to CNSL which is extracted from the shell). Cashew oil is a non-drying oil. The oil is not suitable for use in soap, according to Akinhanmi and Atasié (2008) in “Chemical Composition and Physicochemical Properties of Cashew Nut Oil” but it is used in cosmetics and as a skin treatment. It is worth looking at www.africajou.com, a Senegalese oil manufacturer, for

an idea of the potential and marketing claims (unsubstantiated). There is little evidence of substantial commercial activity, or of even a market for cashew oil. This is not surprising given the prices available for cashew kernels, and the fact that there are oils with similar qualities available at lower prices.

Cashew apple

The cashew apple, or pseudo fruit, has recently been the most talked about subject among cashew projects that wish to add further value to their activities. In most producing countries, vast quantities of cashew apple go to waste each year or are used for low level, low value applications such as compost. The apple is very high in vitamin C and minerals. It is said to have medicinal properties. These attributes are well documented elsewhere so only the commercial aspects are discussed below.

Estimates of cashew apple use vary from less than 6% to 10%, but a much higher economic dividend could be gained from marketing the cashew apple. Millions of metric tonnes go to waste each year worldwide. This seems a great shame since the cashew apple has a range of possible uses if some difficult hurdles were overcome.

There are three main problems in using cashew apples

First, the cashew apple, despite its wonderful appearance and high nutritional value is not suitable for consumption without preparation. Eaten raw, the apple has an astringent taste and can irritate the mouth and throat. It can be prepared for consumption as a fruit by steaming and washing, but in truth it is better consumed in processed form.

Second, the apple deteriorates rapidly. Within 24 hours of picking it deteriorates to the point where it is no longer valuable as a fresh food or suitable for juice production. To transport them, the apples must be carefully packed in a crate to prevent bruising. The absence of suitable infrastructure in the countries of origin means that the basic preparation necessary to make the fruit palatable within the required time is lacking.

Finally, for best results, the cashew apple must be picked from the tree prior to the full development of the nut. If the apples are picked at the best time for their use, then the nuts attached will not be suitable.

Adding to these barriers, cashews are, for the most part, produced by small widely spread out farms, transported down a long supply chain over a protracted period of time, and shipped hundreds, and sometimes thousands of miles for processing. These barriers help explain why the cashew apple has been so neglected.

Brazil is the only origin which has a significant industry processing cashew apples. In parts of Brazil, the apple is regarded as the primary crop of the cashew tree. It is used for consumption as a fruit during harvest time, and processed into juices, jams and a range of other foods. The juice industry is the only one of real substance. However, cashew apple juice is not as palatable as competing fruits. Research suggests that production tends toward blends, using cashew for its high vitamin C content but blended with other juices such as mango to make it more palatable (Akinwale, European Food Research and Technology Journal, August 2000).

Outside of Brazil, uses for the cashew apple are difficult to find. A popular alcoholic drink is made in Guinea Bissau. A less popular alcoholic drink is made in Goa, India, but despite much talk about the commercial potential of these, the likelihood is that they will remain primarily for local and tourist consumption. In Vietnam, for example, the second largest producer of cashew nuts, uses the fruit only as compost and other uses are virtually unknown. Elsewhere there are village level initiatives producing cashew wine. The impact of these projects on certain villages is no doubt positive, but there is little prospect of millions of tonnes of cashew apples being used for alcoholic drink production.

The most likely constructive commercialization of the cashew apple is to make ethanol for bio fuel. This has been promoted in a number of origins and has some attractive aspects, but no commercial projects were identified in this study.

Bio fuel production is often criticized for removing food from the supply chain by pushing prices up, especially in less developed countries. Cashew fruit, however, is not used as a foodstuff. The raw material is readily available in large volume, and even if growers only earn low prices, it adds to their income. Unlike other bio fuel crops, arable land previously utilized for food production is not taken over for bio fuel. Ethanol production does not require fresh cashew fruit so the fruit can be allowed to fall to the ground, with no reduction in nut yield.

There appears to be much research on CNSL as a bio fuel component, but little on cashew apple. One report from India carried in Business Line in 2009 reports that Kerala Agriculture University research estimates an 8% recovery from cashew apples used for bio fuel. Given the large volumes available in India, this could, by their calculation yield 322,000 mt of bio diesel per year if optimized.

In Cambodia, if the nut harvest is 40,000 mt, there is probably cashew apple tonnage in the region of 300,000 mt which could yield 30,400 mt of ethanol. Research on the use of waste cashew fruit is at an early stage, but it would be worthwhile for prospective cashew operations in Cambodia to contact research bodies in India and Brazil for an update on progress and thinking in this area.

Annex 9. Cashew Calendar



January

India, flowering
Vietnam, flowering
Brazil, harvest ends
Mozambique, ships RCN
USA, season ends

February

Vietnam/Cambodia, harvest
India, harvest begins
Finance needed
Chinese New Year
(dates vary)

March

India, harvest, full flow
India, shelling domestic
W. Africa, flowering
Nigeria/Benin, harvest

April

India, harvest in North
W. Africa, harvest
Vietnam/Cambodia,
harvest ends
Easter (dates vary)

May

India, harvest continues
W. Africa, ships RCN
Guinea Bissau, harvest
Ivory Coast, harvest

June

Guinea Bissau, ships
RCN
India, monsoon starts

July

India, shelling imports
W. Africa, harvest ends
Brazil, early flowers
Brazil, factories close

August

India, Onam holiday
Brazil, first harvest
USA, heavy usage

September

India, Onam holiday
Indonesia, harvest
Europe, heavy use starts
Ramadan (dates vary)

October

Indonesia, harvest
E. Africa, harvest

November

Indonesia, harvest
Brazil, harvest
Tanzania, govt. prices
USA, Thanksgiving

December

Tanzania, ships RCN
Indonesia, harvest ends
Cambodia, flowering
Europe, busy season ends
Christmas

Annex 10. Persons Contacted for this Study

Company	Location	Contact	Activity
Aachal Industries	India	Mr Prabhu	Processor
Africa Cashew Alliance	Ghana	Pernaille Isaksson	Association
Africa Cashew Development	The Netherlands	Gerard Klijijne	Cashew trader
AG Commodities	US	Mike	Organic broker
Agritradex Commodities	India	Amit Bhatia	Cashew broker
Alter Eco	France	Antoine	Organic importer
Amberwood Trading	Brazil	Juliano Camara	Broker
Antares Trading	UAE	Mr G.Pillai	Food importer
Ban Choon Marketing	Singapore	Mr Wing Howe Meng	Food retailer
Catz International	The Netherlands	Michel Kok	Importer
Chung King	Singapore	Mr Dheenathayalavel	Broker
Claro Fairtrade	Switzerland	Michael Gafner/ Ms Walter	Fair-trade importer
Crown Cashew	US	W Britt	Importer
Doit	The Netherlands	Broam Poppe	Organic Importer
Dutch Nut Group	The Netherlands	Perry Van Otterloo	Nut processor
DWP Mensch & Zuikunft eG	Germany	Ms A. Trugillo	Fair-trade importer
EPOPA	The Netherlands	Deepa van Staalduinen	Development organization
Equal Exchange	UK	Andrew	Fair-trade importer
Ernst Rickertsen	Germany	Frau Rodenhagen	Organic importer
Essential Trading	UK		Food distributor
Essential Trading	UK	Denise Booth	Organic distributor
Europa Castanhas	Brazil	Daniel	Cashew processor
European Fair Trade Assoc	The Netherlands	Marika	Association
Export Trading	Tanzania	Mahesh Patel	Exporter/processor
Export Trading	Tanzania	Jayesh Patel	Exporter
FairFund Foundation	UK	Edgard Hall	Funding organization
Fairtrade Foundation	UK	Rachel King	Association
Fairtrade Foundation	US	Telephone	Association
Freeman	China	Freeman Shen	Import/export
Freeworld Trading	UK	Alex Poole	Organic importer

Company	Location	Contact	Activity
GB Commtrade	Australia	Gerald Brunton	Importer
Gebana	Germany	Ms Gunter	Fair-trade Importer
Gepa	Germany	Stefan Beck	Fair-trade importer
Global Commodities	UK	Niru Ashoka	Trader cashews
Global Organics	US	Stefan Cambon	Organic importer
Global Trading & Agency	The Netherlands	Kees Blokland	Broker
Heart of Africa	Ireland	Caroline Mulqueen	Fair-trade sales
Hershey Import	US	Robert Abdee	Organic importer
HP Schmid	US	Uwe Parle	Organic importer
IBK Trade	Czech Republic	B.Kalileka	Importer
Imperial Wholefoods	UK	John Evans	Nut Processor
Inter Treenut Council	Spain	Guaretti Gausch	Association
International Commodity Trading	US	Robert Murphree	Broker
Irecema Industries de Caju	Brazil	Jeremy Holt	Processor
J.B.SanFilippo & Sons	US	Mike Valentine	Nut packer
Jeweltex Bv	The Netherlands	Mr Harikumar	Broker
Company	Location	Contact	Activity
Just Cashews	US	Larry Drums	Organic importer
KPP Group	India	Anu Pillai	Processors
Liberation Foods	UK	Kate Gaskell	Fair-trade importer
Lubasango Project	Indonesia	Edi Surwanto	Producer
Max Havalaar	Switzerland	Telephone	Association
Max Havelaar	France	Mr Munoz	Association
Menguys	France	Nicolas Cormeuil	Importer processor
Merlion Trading	UAE	Mr Dheepan	Food trader
Miranda Industrial	Mozambique	Felipe Miranda	Processor
Multiple Organics	US	Dan Lanstein	Organic importer
MWT Foods	Australia	Michael Waring	Importer
Olam International	Singapore	Mr Brijesh Krishnaswamy	Cashew trader
Organic Partners	US	Mike Davis	Organic agent

Company	Location	Contact	Activity
Organic Trade Association	US	Resepion	Association
Oxfam	UK	Greg	Fairtrade distributor
Pacific organics	Australia	Cameron Gough	Organic Importer
Premier Cashew	Tanzania	Mr M.Fazal	Processors
PT Sekar Alam	Indonesia	Dewi Sutedjo	Cashew exporter
Quality Assurance	India	Mr Prassannakumarji	Cargo superintendent
R.M.Curtis & Co Ltd	UK	Mark Setterfield	Food importer & packer
Rapunzel NaturVoed Ag	Germany	Ludwig Wilhelm	Organic importer
Sai Commodities	Ivory Coast	Deepak Rupchansdani	Exporter
Samsons	India	Pankaj Sampat	Broker
Sayeed Muhammad	Singapore	Mohammad Ismail	Importer trader
Sell Trading	Brazil	Cleitton Jonh	Broker
Setton Foods	US	Joshua Setton	Importer
Solidar Monde	France	Nicolas Cormeuil	Fair-Trade importer
Suma Foods	UK	Jeff	Distributor
Sunscoop Products	UK	John Williams	Nut processor
Swiss Contact	Indonesia	Etih Surayatin	NGO
Tazcopkk	Uk	Tim Dovey	Packer
Thanh Son	Vietnam	Vu Thai Son	Broker/sheller
Tradein Organin	The Netherlands	Jorn Van den Dop	Organic importer
Trader Joes	USA	Lori Liatta	Retailer
Traidlinks	Ireland	James Mulhall	Trade development
Transagent	Austria	D.Weinlich	Importer
Transfair	USA	Sophie/Paul Rice	Certification
Twin Trading	Uk	Angela Delvalle	Fair-trade importer
Van Namen Noten Import	The Netherlands	Nicolas Van Namen	Importer
Western India Cashew	India	Hari Krishnan Nair	Processor
Wholefoods Mart	USA		Retailer

Annex 11. Bibliography

Author	Year	Title
ADI Phnom Penh	2008	Cambodia Cashew Study
Artur, L & Kanji, N	2005	Satellites and Subsidies: Learning from experience in cashew processing in Northern Mozambique
Balmer, B	2004	Export Market Opportunities Market Profile: The Dutch Organic Sector. Report prepared for USAID/GEO
Brad, P	2008	Factories in the Field. Report prepared for Technoserve
Branson, A	2004	In-shell or out, China's Nutty for US Tree Nuts
Bryant, C et al	2004	Assessing the market potential for cashew nuts in China: Report for Technoserve
Budastra and Dipokusumu	2003/04	Impacts of Liberalization on the Competitiveness and Efficiency of the Cashew System in Nusa Tenggara Barat Province, Indonesia
Cashew Bulletin	2006-2008	Especially May 2008, July 2006
Cashew Week	2005, 2007, 2008	Various issues for market prices verification and news
CBI	2005	Export Guide
CBI	2005	EU Market Survey 2005
Clipper	1/2007	West Africa's Move to Cashew Processing
Davis, K	1999	Cashew. Echo Technical Note
De Bosch, Herman	1998	The Cashew Nut in the Netherlands and Europe. Report for SNV
Dept of Agriculture South Africa	2004	Cultivating Cashew Nuts
Fairtrade Foundation	2008	Review of UK Supply Chain, returns to producers and retail margin issues. www.fairtradefoundation.org
Fitzpatrick, J & Jaeger, P	2008	Indonesia Cashew Sector Development, Report prepared for IFC, SADI
Food Chain	2001	No 28, May 2001 Issue on cashew processing.
Fruit World	2008	Organics 2008
Holt, J	2004	A pragmatic approach to developing cashew nut export business. Paper presented to African Cashew Meeting Benin 2004
Huber, B & Schmid, O & Kilcher, L	2007	Organic Markets Review Standards and Regulations
Ifoam & FiBL	2008	The World of Organic Agriculture; Statistics & Emerging Trends 2008

Author	Year	Title
ITDG	2002	Technical Note: cashew nut Processing.
Jaeger, P & Lynn, S	2004	Guinea Bissau cashew Sector Development Study. Private Sector Rehabilitation and Development Project of Guinea Bissau
Jeyaranjan, J et al	2003	Liberalization gender and livelihoods: the cashew nut case
Kanji, N & Vijfhuizen, C	2003	‘Cracking the Cashew Nut Myths? The Dilemmas and Challenges of Gendered Policy Research in the Cashew Sector in Mozambique’
Koekoek, F	2002	Organic and Fairtrade peanut Markets in Europe. Report for EPOPA
Koekoek, F	2002	The European market for organic cashew nuts. Report for EPOPA
Koekoek, F	2003	The Market for Organic Dried Fruits from Tropical Origins, EPOPA 2005
Mwasha, A	2004	Basic data on Certified Organic Production and Export in Tanzania 2003
Nicolino, C & De Cock, C	2006	Specialty and Processed Foods Export Guide for US & European Markets, West Africa Trade Hub.
Nutrition Business Journal	2008	Vol XIII No 3/4 Organic Markets Overview
Organic Trade Assoc.	2007	Manufacturer Survey
Retourne, K	2008	Food News: Wider economic downturn plays havoc with global cashew market
Richter, T	2007	Trends in the Organic Retailing Sector in Europe
Sahota, A	2007	Organic Monitor Annual Review, The Global Market for Organic Food & Drink
Shafira	2005	CBI EU Market Brief , Edible Nuts
Shlachter, B	2008	Organic food sales dropping, McClatchy Newspapers, US
Studiecentrum Snacks en Zoetereen Benelux	2006	The Belgian Snacks and Confectionary Market
The Clipper	2007	February issue Organic Almonds – A Business with a Future
Toan, W	2008	Vietnamnet 2009 Cashew Processing Workshops Will Sit Idle
VINACAS	2008	Memorandum The cooperation of World Wide Cashew Industry Promotion and Marketing between India and Vietnam
Wakabi, W	2004	The East African: African cashews to Indian factories: How the Continent exports its profits and jobs
Williams, D	2005	West African Cashew Sector, Supply Chain analysis and needs assessment. Report for West Africa Trade Hub and Tehhnoserve
Wolf, G	2005	Paper presented at INC Congress, Berlin

Statistical Sources	
United States Dept. of Agriculture	US market
United States Dept. of Commerce	US imports
United States International Trade Commission	Trade
International Tree Nut Council	Production and trade. Global Statistical Review. Edible Nuts
European Union	Market access database
Cashew Export Promotion Council of India	India production
USITC Trade database	Trade
United Nations Statistics Division - ComTrade	Trade
Europa Food Safety Rapid Alert Systemfor Food & feed	Food alerts
FAOSTAT	Trade stats, Production stats
Eurostat	EU trade



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