



Cashew Business Basics

The Gambia River Basin Cashew Value
Chain Enhancement Project (CEP)



INTERNATIONAL RELIEF & DEVELOPMENT



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For more information on cashew and the numerous opportunities associated with this valuable crop, contact

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Introduction

The Gambia River Basin Cashew Value Chain Enhancement Project (CEP) is a sub-regional initiative funded through a US Department of Agriculture (USDA) Food for Progress grant. Working in The Gambia, Senegal, and Guinea Bissau, the project was designed to strengthen the cashew value chain and increase the incomes of rural populations in the targeted zones. Implemented by the American NGO, International Relief & Development (IRD), the project utilizes a farmer-centered approach that seeks to strengthen farmer-to-farmer learning and builds on the existing knowledge of cashew production and marketing rather than looking to outside models, which may be difficult to adapt to cultural and environmental conditions. In the first year of the project, over 4,000 cashew farmers participated in farmer field schools and addressed issues of business innovation, marketing, organization, and production and post-collection handling. This publication evolved out of the CEP cashew value chain curriculum as well as knowledge gained from the participating farmers themselves.

Cashew production costs are relatively low in the sub-region, and the high quality of the raw nut from this area has been well documented and acknowledged among cashew industry stakeholders. This booklet is intended for use by existing cashew growers as well as new entrants



Cashew ripening on the tree.

into the cashew value chain. Maintaining the high quality of cashew nuts produced in this region is key to a viable cashew sector. As more producers choose to establish cashew plantations, the adoption of best production, processing, and marketing practices as outlined in this publication is central to ensuring that cashew businesses will develop into highly profitable ventures for all those who engage in it.

In partnership with IRD, the African Cashew Alliance (ACA) and the US Peace Corps assisted in the conceptualization, preparation, and production of this booklet. This collaboration has been invaluable.



Pressing cashew apples extracts juice that can be further processed into a variety of beverages.

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Cashews still attached to the apple with a glass of fresh cashew apple juice.

Understanding the Cashew Business

Cashew is a highly sought after and internationally traded commodity. People around the world consume roasted cashew kernels, often not even aware where they are grown or that they grow on trees.

Africa produces the majority of the world's cashew. While some countries have been growing cashew for over 50 years, others are relatively new actors in the market. Cashew production trends (Figure 2) illustrate the important role that African cashew plays in the world market and how it has potential to provide increased income to farmers. Figures are in metric tons (MT).

Where Does Cashew Go When It Is Exported?

The vast majority of the sub-region's raw cashew is currently exported to India and Vietnam where it is processed and then either consumed in those countries or shipped to the US or to Europe for further processing and packaging. In India, Vietnam, and Brazil, every part of the cashew nut is used or processed to generate income. This includes the nut, the peel inside the shell, the liquid inside the shell as well as the outer shell, and the cashew apple.

Uses of the Parts of the Cashew

Kernel: Consumed as a nut, eaten alone or as an ingredient in sauces, cakes, and candies

Cashew Apple: Juices, wine/liquor, jellies, jams, candies, cakes

Cashew Nut Shell Liquid (CNSL): Adhesives, paint, and other industrial materials

Cashew Peel: Brake pad linings; can also be used for animal feed

Cashew Shell: Fuel for wood-burning stoves and ovens

While cashew nuts can be processed using traditional methods, modern processing techniques are more efficient but require a higher degree of capital input (equipment), business management, and planning. There are opportunities to increase the efficiency of cashew processing in the sub-region, but all of it rests on the adoption and implementation of a sound business plan and strategy.

Figure 2: Cashew Production Trends (1997–2010)

Figures in Metric Tons (MT)

YEAR	GAMBIA	SENEGAL	GUINEA-BISSAU	AFRICA	WORLDWIDE
1997-2001	<25—150	5,000	91,350	432,000	1,178,000
2002	250	12,000	91,000	520,000	1,018,000
2003	500	12,700	84,800	475,000	1,011,000
2004	1,000	13,000	97,900	510,000	1,200,000
2005	1,500	15,000	115,000	580,000	1,320,000
2006	1,750	21,000	126,500	605,000	1,564,000
2007	2,000	27,500	96,117	635,000	1,638,000
2008	3,000	31,000	100,000	765,000	1,845,000
2009	6,500	35,000	+124,000	800,000	2,000,000
2010	8,000	37,500	135,000	925,000	2,220,000

Source: Country estimates and published figures (ACA)

Elements of a Successful Cashew Business

An individual or group involved in a cashew business should incorporate the following practices to gain maximum profit:

- Clearly define the idea/vision for making money
- Research all aspects of the cashew business; become an expert in cashew before investing
- Collect information on the local and export market (who is buying, how much are they paying, what quality/quantity the buyer prefers, etc.)
- Contact stakeholders in the market to find buyers
- Develop a short- and long-term business plan with detailed and realistic budget figures
- Invest the needed resources
- Pay attention to management (resources, labor, etc.)
- Seek to produce and maintain a high-quality product
- Develop and adapt new skills and technologies
- Strive to make your product different/better than others
- Maintain proper packaging and storage for the product

- Advertise and promote sales through various market channels (collective sale or pre-negotiated sales)
- Keep updating market information (Are there new buyers? Is there a different quality getting a higher price? Etc.)

Ideally, a cashew producer should see him or herself as an entrepreneur, someone who

- Has identified a good business opportunity after research
- Has a vision for a business and will run their farm or processing operation as a business
- Makes a detailed plan of how the business can work and follows the plan
- Takes advantage of new business opportunities
- Takes calculated risks because they are committed to the vision
- Works hard, is hands-on working in the business, and is convinced of the potential success of the business
- Stays motivated and open to innovation, learning and adapting new practices
- Able to understand and analyze risks and effectively manage crises and difficulties
- Recognizes mistakes and those of others and makes corrections

Figure 3: Cashew Opportunities and Risks

CASHEW BUSINESS OPPORTUNITIES	CASHEW BUSINESS RISKS
<ul style="list-style-type: none"> • Good climate for cashew production • Availability of land • Availability of market • Availability of labor • Low cost of production • Institutional support (Govt, NGOs, African Cashew Alliance [ACA], etc.) • Existence of financial institutions • Presence of investors and expertise 	<ul style="list-style-type: none"> • Market instability • Price fluctuation • Excessive heat during flowering of trees • Land disputes/conflict • Losses due to animal foraging/theft during marketing season • Uncontrolled bush fires

The Importance of the Cashew Value Chain

Cashew passes through several stages and actors as it moves from the farm to the consumer. At each step of the way value is added to the raw nut. Each person or company involved in the value chain must contribute something to increase the value: resources, expertise, and taking risks like providing financing. A farmer cannot make money from cashew without a buyer. Likewise a buyer depends on truckers to

get the cashew to the port, and an exporter relies on the shipping company to export the raw nuts abroad. Each person in the cashew value chain should make a fair income based on the inputs and services that they contribute to move the cashew to the market. Figure 4 highlights the cashew value chain in the sub-region. Figure 5, on the next page, details the key responsibilities of each participant in the cashew value chain.

Figure 4: Illustrative Cashew Value Chain

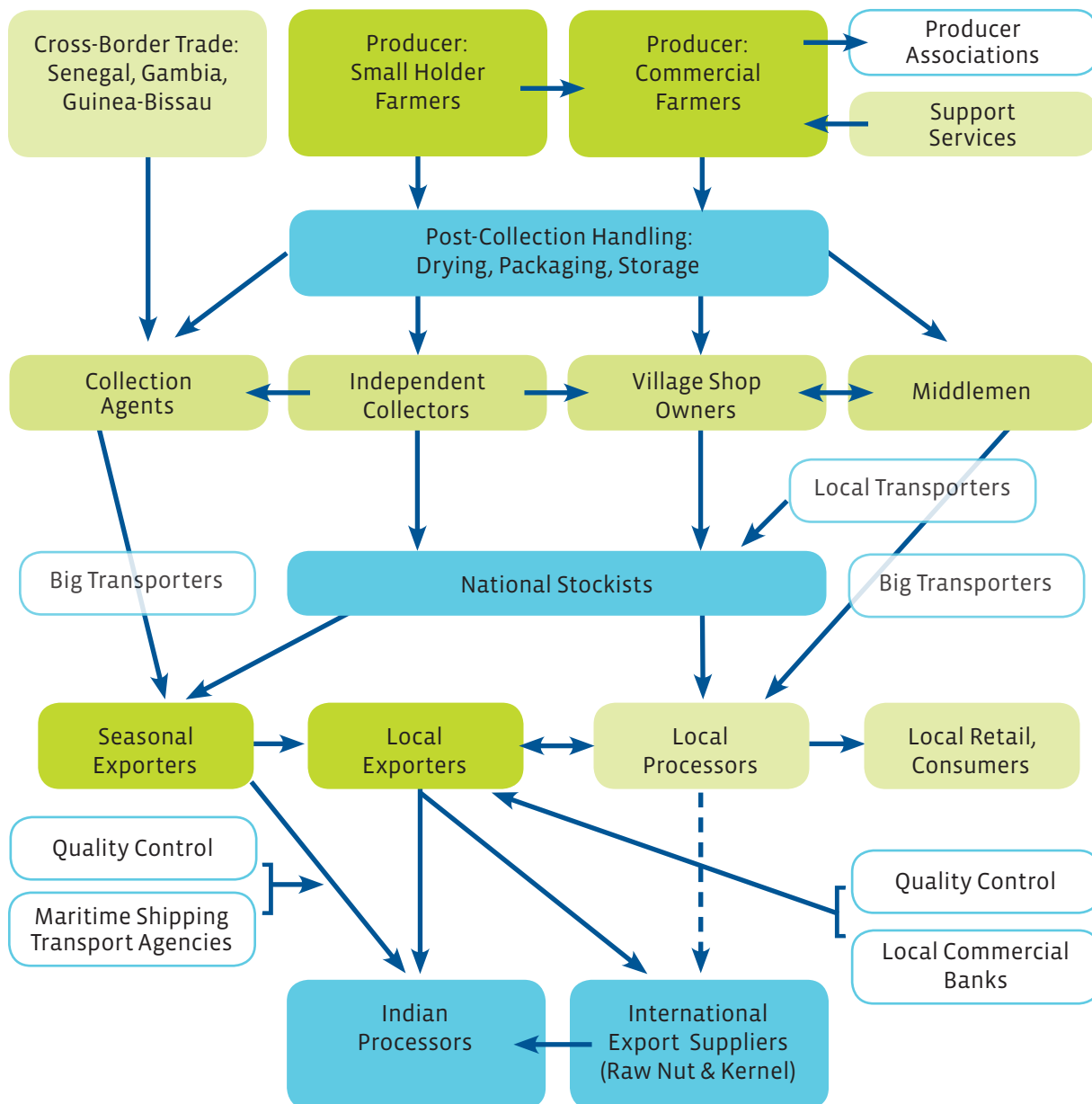


Figure 5: Roles and Risks of Actors in the Cashew Value Chain

KEY ACTOR	ROLE	RISKS
Producers (small holders and/or commercial farmers)	<ul style="list-style-type: none"> Produce high-quality nuts in the right quantities at the right times for the export market or for sale to local processors 	<ul style="list-style-type: none"> Fall in market price Lack of a market Low yield due to disease, pests, theft Drop in quality of nuts Lack of information on determinants of nut quality
Producer Associations	<ul style="list-style-type: none"> Organize farmers into larger groups making it easier to disseminate information and serve as a contact point for potential buyers Serve as negotiator/collection agent between buyers and membership 	<ul style="list-style-type: none"> Association leadership fails to provide adequate service to members Losses and inefficiencies in marketing due to inexperience and weak management
Community-level collectors/shopkeepers	<ul style="list-style-type: none"> Buying of small lots from farmers and bulking Temporary storage 	<ul style="list-style-type: none"> Loss of quality during storage Fall in price after purchase Theft/fire Weight loss
Cashew collectors/buyers (stockists)	<ul style="list-style-type: none"> Pre-financing of nut collection Quality inspection and control (visual inspection and cutting test) Buying of nuts Transport of nuts to collector/buyer's store Further drying of nuts Transit storage 	<ul style="list-style-type: none"> Weight loss in stock Deterioration of quality Loss as a result of fall in prices Fraud by commissioned agents
Middlemen/Intermediaries	<ul style="list-style-type: none"> Networking information Creating business links between and among the exporters, stockists, village-level buyers/shopkeepers Moving of stocks from one stage to another, depending on where the business deal was made 	<ul style="list-style-type: none"> Failure in business deal as a result of disagreement in the quality of the delivery Loss of credibility
Local Processors	<ul style="list-style-type: none"> Procure raw nuts for primary transformation Transform raw nuts into cashew kernels for local consumption or kernel export 	<ul style="list-style-type: none"> Insufficient funds to procure raw nuts for processing Undeveloped export markets; weak local demand

Figure 5: Roles and Risks of Actors in the Cashew Value Chain continued

KEY ACTOR	ROLE	RISKS
Raw Nut Exporters	<ul style="list-style-type: none"> • Pre-financing of nut collection • Quality inspection and control (nut count and cutting test) • Standardization and repackaging of nuts into 80 kg jute bags • Transit storage • Transportation (to port and maritime) 	<ul style="list-style-type: none"> • Penalties for late delivery, under-supply, or loss of quality • Fraud by cashew collectors • Fall in price • Weight loss • Quality loss • Non-payment of insurance for damaged goods
Commercial Banks	<ul style="list-style-type: none"> • Provide financing for purchase of raw nuts, based on guarantee of agreed upon quantities 	<ul style="list-style-type: none"> • Fewer nuts or poorer quality nuts purchased than expected for the loan amount
Processed Kernel Exporters	<ul style="list-style-type: none"> • Contracts processed kernels for sale to international kernel buyers 	<ul style="list-style-type: none"> • Poor quality of processed kernels results in penalties • Time delays in obtaining contracted amounts from local processors result in penalties
Quality Control	<ul style="list-style-type: none"> • Quality control/verification of quality for international buyer 	<ul style="list-style-type: none"> • Changing standards/requirements at international buyer level requires constant updates on international standards
Shippers/ Maritime Transport	<ul style="list-style-type: none"> • Timely packing and shipping of raw nuts/processed kernels destined for international buyers, in line with contracts 	<ul style="list-style-type: none"> • High cost of container shipments if not properly managed; pre-negotiated contracts could result in losses



Cashew nuts form first; the stems later swell, forming the cashew apples.

Understanding Cashew Pricing and Costs

How Is the Price of Cashew Set Each Year?

Several factors may influence the overall price of cashew nut from one year to the next. While cashew farmers are key actors in the value chain, in general, they do not set the international price for cashew.

The international price for cashew will change throughout the season based on the world supply and demand. The supply of cashew is determined by how much cashew is produced worldwide each year. For example, if every cashew growing country in the world has a good harvest, there may be more cashew available in the market than consumers actually demand. On the other hand, some environmental factors such as high temperatures, droughts, or floods might reduce the supply some years.

The demand for cashew is also determined by a range of factors. For example, if there is an international economic downturn and people in general have less money to spend each month, they may not buy cashew for a period because it is considered a “luxury” good. Usually such economic crises last only a short time, and when



It is better to store cashew in jute (shown here) rather than polypropylene bags, as they help prevent excess buildup of moisture.

people have money again, they will once again consume cashew. Certain foods may become more popular and more people start to eat them, while other foods may go “out of fashion” and the demand for that food declines. For the near future, however, it appears that the demand for cashew remains strong.

Exchange rates, weather, previous production levels, government policies, regulations, or port fees may also affect the price. While these factors are outside of the control of the farmer, the farmer can make their product more attractive to buyers by following best production and post-collection handling practices and improving their marketing strategies.

Why Does the Price of Cashew Fluctuate Within the Same Marketing Period?

The price of cashew is not controlled by any one person. The demand for cashew at the farm level comes from the cashew exporter who has signed a contract to deliver a certain amount (in metric tons or mt) to a buyer in India or Vietnam, for example. Consider the following example of an Indian trader called Mr. Kumar, an experienced cashew trader operating out of Banjul, The Gambia.

In January, Mr. Kumar enters into talks with a company in India to deliver raw cashew nuts during the months of July and August. He does his research to determine the likely international price of cashew in the coming season as well as investigates how much cashew he might be able to buy during the season in the Senegal, Gambia, and Guinea-Bissau region. When he agrees to sign a contract, he has already considered factors such as weather, previous production levels, the economic situation worldwide, shipping costs, and government policies. By February, Mr. Kumar has signed a contract to provide 10,000 MT of raw cashew nuts to the cashew buyer in India. As a part of the contract, Mr. Kumar must insure that the cashew nut he delivers meets the quality standards of the buyer. The buyer expects the nuts to be

completely dried, large nut size (based on nut count and out-turn) and free of disease and pests.

Mr. Kumar knows that in order for him to collect 10,000 MT of raw nuts, he will need to rely on different collection agents to help him buy the nuts from the farm level. He also needs to line up financing from a local bank so he can give money to the collection agents who will buy directly from the farmers or cashew producer associations.

As the marketing season starts, Mr. Kumar is cautious because he knows that some cashew is picked too soon, before the kernel inside is fully matured. When he cuts open the nut at the farm, he might see a very small nut or no nut at all. Usually at the beginning of the season, the price starts lower and then will gradually increase, as more nuts become fully mature and as more buyers enter the market, increasing the competition for the nuts. At the beginning of the season Mr. Kumar will buy what he can in this “first harvest” but he must also be mindful that he doesn’t pay for cashew that doesn’t meet the quality standards he’s agreed to in his contract.

Over the next three to four months, Mr. Kumar will be in daily contact with his local collection agents to discuss the price trends as well as the

nut quality they see at the farm level and local markets (*lumos*). The price may change weekly or sometimes even daily, depending on how many buyers are active in the market. Some farmers will decide to hold on to their cashew, thinking they can get a better price. At this point, some will get a better price, while others may wait too long and before they have sold their cashew, the price has gone back down again because the exporters like Mr. Kumar have already fulfilled their contractual obligations.

Cashew Business Planning: Understanding Production Costs and Expected Return on Investment

Before starting in the cashew business, it is necessary to compare the investment and production costs against the potential income to be gained. Before planting, estimate the investment costs and how long it should take to recover the initial investment. Then from year to year, record actual costs and income gained to track the profitability of the business. Figure 6 shows how this might be done.

Figure 6: Illustrative Production Investment and Returns (in US\$)¹

YR	Establishment of 1 hectare rain-fed cashew plantation (intercropped with groundnuts in yrs 1 & 2)				Maintenance		Collect.	Total Cost	Est. Yield (kg)	Price (\$/kg)	Gross Income	Net Income
	Seeds, Seedling Prep	Labor (Clearing Planting)	Security	Land Use (Rent)	Labor	Equip/Inputs	Labor					
1	135	75	100	0	25	0	0	335	0	0.65	0	-335
2	0	0	50	0	25	0	0	75	0	0.55	0	-410
3	0	0	50	0	25	0	50	75	150	0.60	90	-395
4	0	0	0	0	25	0	50	75	300	0.80	240	-230
5	0	0	0	0	25	0	50	75	400	0.50	200	-105
6	0	0	0	0	25	0	50	75	450	1.00	450	270
7	0	0	0	0	25	0	50	75	400	0.75	300	495
8	0	0	0	0	25	0	50	75	450	0.80	360	780

¹ *Smallholder farmers with limited capital. Yields, and return on initial investment, will be higher when best production practices are followed.*

How Can a Farmer Get the Best Price During the Cashew Season?

Quality: By selecting a high-quality nut that is well known in the area for having a high out-turn, farmers will have an advantage over those who plant any seed they find. If farmers follow the recommended practices for collecting, drying, and storing, they will maximize their quality, thus allowing them to get the best price possible for their nuts.

Increase Productivity: By following the recommended practices of pruning, grafting, and plantation maintenance, farmers can increase the productivity of their cashew trees.

Bulk Sales at a Local Collection Point: By collectively selling cashew nuts, farmers have the ability to bypass the smallest middlemen and sell directly to an exporter who will give them a higher price.

Follow the Market, Understand How It Works: Market research is crucial to making a successful cashew business. Each farmer and each farmer group should actively follow the market trends and the changes in the raw cashew nut price during the season.

Maintain Good Contacts with Buyers: Contacting and meeting all potential buyers is a necessity for cashew farmer groups. Buyers need to have confidence that the farmer group understands the terms of any agreement they sign and that the group speaks with “one voice.”

Respect Contracts: Fulfilling the terms of the contract with a buyer is key to establishing a successful business relationship with the export community. Make sure to understand the terms of the contract and how the buyer will evaluate the contract at the end of the agreed upon period. Both parties in a contract should feel that they benefited from the transaction. A successful contract will result in another contract during the next season. A failed contract may be the end of the relationship with a buyer.



Weighing cashew.

In this scenario, the farmer chooses to plant the cashew seedlings relatively close together because he is committed to pruning the trees to make sure their canopy does not become too large. He plants 150 tree seedlings initially but only 125 survive after the first year. The trees yield an average of 1.2 kg per tree in the third year. By the fifth year the trees have an average yield of 2.8 kg per tree. Then by the eighth year, productivity may reach up to 3.6 kg per tree, and the initial investment has repaid itself.

Revenue from intercropped groundnut or millet is not calculated in this table but it would serve to bring in some additional income while the cashew is growing. Live fencing is established at the beginning to deter animals from entering the plantation. No rent is paid on the land because it is under a traditional land ownership system. If land is purchased or leased at a cost, this must be factored into calculate expected returns.

Labor is the main cost of production after the first year; in many cases family labor is used but is not quantified. A farmer with access to credit or capital can increase yields by following best production practices.

From this example, the cashew farmer should realize a net income by the eighth year. While some costs may be ongoing (labor maintenance and harvesting for example), once initial investment costs are made, it is expected that over a relatively short period of time (for example, eight years), the cashew farmer should start to realize a net income from the cashew plantation.

It is also important to track the production costs per kilo, and then compare to the farm gate price or market price per kilo. If the market price per kilo is greater than the production cost per kilo, the producer will realize a profit in the short term. This does not always give the farmer enough money to reinvest in cashew for the future. With

the fluctuation of prices over time, farmers can expect to sometimes make a little more than their production costs, while at other times they may make a lot more than their production costs. It is important to average prices over the season and to calculate whether or not the farmer is seeing enough of a profit in cashew.

To maximize income the sale of raw cashew nuts, a plantation owner may develop a marketing plan that cuts across the fluctuating prices of the season. The different colors highlight the different proceeds, depending on when the cashew is sold over the season. An important point to remember is there are no rigid rules for when prices will increase or decrease. However, the prices typically start low and rise as the season progresses.

Over the course of the marketing season, prices will fluctuate. Producers can choose to sell throughout the season, depending on their cash needs or selling strategy. They can also try to hold on until prices improve. Figure 8 shows four scenarios relating to the timing of cashew sales. They show that holding on to cashew waiting for a better price may not guarantee more money, as prices may drop at any point. Once the initial investment costs have been gained back, the



Celebrating a sale in a local cashew market.

farmer can sell at any price above the cost of production and still make money. Remembering that cashew is a business, each cashew producer should seek to maximize his profit from cashew by thinking about their marketing strategy ahead.

Figure 7: Production Cost vs. Sale Price (in US\$)

Production Year	Production Cost	Yield (kg)	Production Cost /Kg	1st Farm Gate Price	High Farm Gate Price	Avg Farm Gate Price	Net Gain (Avg FGP/kg – Production Cost/kg)
Year 6	75	450	0.16	0.36	0.80	0.58	0.42

Figure 8: Marketing Options (in US\$)

Yield (kg)	Scenario 1			Scenario 2			Scenario 3			Scenario 4		
	%	Rate	Amount	%	Rate	Amount	%	Rate	Amount	%	Rate	Amount
450	100	0.36	162.00	25	0.36	40.50	0	0.36	0.00	0	0.36	0.00
450	0	0.60	0.00	50	0.60	135.00	50	0.60	135.00	0	0.60	0.00
450	0	0.80	0.00	25	0.80	90.00	50	0.80	180.00	0	0.80	0.00
450	0	0.20	0.00	0	0.20	0.00	0	0.20	0.00	100	0.20	90.00
Total	100	—	162.00	100	—	265.50	100	—	315.00	100	—	90.00

Figures based on average prices in the Sene-Gambian cashew market over the period 2008–2010

To Organize or Not To Organize, That Is the Question!

In the village of Kafuta, in the West Coast Region of The Gambia, farmers have been growing cashew since the late 1980s. Most of the farmers learned how to grow, harvest, and sell cashew through trial and error, with little sharing of information and almost no outside resources to guide them. In 2009, with the assistance of IRD and Peace Corps volunteer Annie Downs, the cashew farmers of Kafuta decided to form a group to cooperatively sell their cashew nuts. With the basic idea that selling in a group might help them negotiate a higher price for their product, the farmers met and found that working as a group had more benefits than they had originally foreseen.



Holding regular meetings gave the villagers a chance to share information about working with cashew: the best practices they had learned from years of experience, tips they picked up from outside sources, and advice on all manner of activities related to growing cashew. They began to think about working and selling collectively, rather than individually. When they needed help in their orchards, they had a local forum to support each other.

The farmers registered their group and were able to sign a contract to sell directly to an exporter for the highest current market price, bypassing the middle men who had been buying their cashew in small tins rather than in bulk. The price for the tin seemed good at first, but when the association members calculated the unit price they were getting from the local middleman, they were actually getting a lower market price. Agreeing to sell collectively, the group agreed to set aside a small percentage from each bag sold to go into the group bank account, which they would then use to give each other loans.

Since the percentage of the group reserve was smaller than a middle man's cut, everyone benefited from group sales. At the end of the season, the farmers had added a significant amount of money to their group bank account and they had learned important aspects of the cashew business. They became directly involved in marketing, buying, weighing, assessing nut quality, and writing contracts. While the first year went well, the group has identified ways to improve upon their experience for future years. They are now careful to record all of their business transactions, make sure all members understand the nature of the contracts they sign, and do their research about different buyers in the market early in the season. The

Kafuta Cashew Farmers Association has solidified their identity as a group committed to helping each other increase their incomes through cashew production.



Left: CEP staff and Peace Corps volunteer Annie Downs survey cashew fields with Sukata cashew growers.

Nut Quality, Collection, and Post-Collection Techniques

Determining Cashew Nut Quality

Nut quality is determined by two key tests, the nut count test and the out-turn test.

Nut Count Test

This test is the easiest to perform and gives an indication of the size of the raw nut by measuring the number of raw nuts per kilo. Nuts selected randomly from the bags are placed on a scale until the scale reads 1 kg. Then the number of nuts is counted. With smaller nuts, it will take more nuts to add up to a kilo. The larger the nuts, the fewer the nuts it takes to make a kilo. Therefore, in the nut count test, the fewer the nuts, the better. Nut counts for medium-sized nuts are typically 168–199/kg. Some nuts in India and Tanzania have been recorded as low as 160/kg. Very small nuts may be in the range of 230–240/kg. Very small nuts are difficult to process and thus are considered lower quality.

Cashew Out-Turn and How It Is Calculated

Looking at the external nut size isn't an adequate measure of quality, however. Depending on the production and collection practices used at the plantation level, there may be a good kernel inside or something very poor. How much would you pay for a box if you don't know what is inside? Cashew buyers are willing to take some risk, but they try to reduce their risk by sampling some of the nuts to see what they can expect when they buy the nuts.

The second test conducted, the out-turn test, describes how much of the kernel inside of the shell is good quality. The procedure for the out-turn test requires that the nuts be cut open, the inside kernel analyzed, and then percentage of nuts that meet five quality categories:

- 1) Good kernel (good shape, size, and white color)
- 2) Spotted kernel (having black or dark spots)
- 3) Premature kernel (not well developed, lightweight, and wrinkled)
- 4) Wet/Moist kernels (high percentage of moisture that can be felt or seen)
- 5) Rotted kernels (diseases, showing signs of insect damage, or other factors)

After taking random samples from the bags of raw nut, cutting open the nuts and sorting the kernels into the five categories listed above, a calculation is done to give an out-turn score, which is expressed in pounds of good kernel in an 80 kg sac. The scores typically range from 48 lbs to 58 lbs. In general, the higher the out-turn score the better.

The Bottom Line on Nut Quality

These two tests, nut count and out-turn, are then combined to determine the overall quality score. For example, if you have large nuts (low nut count) but very little kernel inside (low out-turn score), the quality will be considered poor, because the buyer is buying only shell. On

Figure 9: Nut Count and Nut Out-Turn

Nut Count/kg	Nut Count Comments	Out-Turn (lbs)	Nut Out-Turn Comments
200 or more	Small nuts: difficult to process	< 48	Not good kernels—nearly impossible to process
		49–50	Acceptable, if nuts medium to large size
169–199	Medium nuts: good quality (average for West Africa)	51–52	Good: average out-turn for the SeGaBi region
		53–54	Good to excellent: excellent if large size nuts
168 or less	Large nuts	55–56	Excellent (found in only certain regions of SeGaBi)

the other hand, one can have a higher nut count (smaller nuts) but inside the kernels are excellent. This is to say, it is not always the case that bigger nuts are better. Buyers need to pay attention to both tests in order to ensure they are purchasing good-quality nuts.

The bottom line is that a quality cashew nut is the combination of a large nut (low nut count/kg) and a high percentage of kernel inside of the shell (high out-turn).

Best Collection Techniques

Collection practices play a key role in determining nut quality. The following techniques should be followed:

- Nuts should be allowed to fall to the ground: don't pick the cashew apple/nut off the tree.
- Nuts should be picked up off the ground daily. Nuts left on the ground for a long time will cause the inside kernel to become yellowish and higher in oil content. Daily collection also reduces losses due to animals and theft.
- Nuts should be separated from the apples the same day they fall. Nuts can be removed by simply twisting and pulling the nut away from the apple. Make sure to put the apples in a separate bucket from the nuts once they are

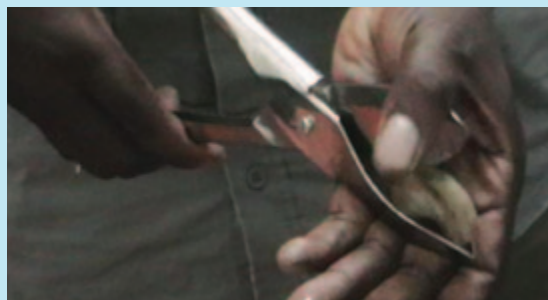


The process of collecting the fallen apples/nuts and separating the apple from the nut is time sensitive. In order to maintain good nut quality, it is important that nuts are collected and separated daily. Farm labor must be organized in advance to make nut collection as efficient as possible.

- separated. Leaving the nuts attached to the apples will add moisture to the nuts and reduce the kernel quality.
- Completely remove the pulp from the nut and wipe with a dry cloth. No pulp residue should be on the nut.
- Do not wash the nuts; water damages the nuts.
- Hire labor to speed up collection where family labor is insufficient.

Follow Best Practices: Collection, Drying, and Storage

When buyers conduct the out-turn test, they will know immediately whether or not the nut has been allowed to fall to the ground or was plucked from the tree prematurely. A successful cashew entrepreneur will deliver the product in the condition that is desired by the buyer. Following the best practices on nut collection, drying, and storing will ensure the farmer is producing what the buyer wants to buy. Providing quality cashew nuts to buyers will also contribute to developing a regional reputation for high quality cashew nuts.



A buyer demonstrates how the nut-cutting test is carried out (using special cashew nut cutters). He cuts the nut to see whether the nut inside the shell fills the shell entirely, partially, or not at all. He uses the kernel that he has removed from the shell to determine the quality of the entire bag of raw cashew nuts. The photo at right is an example of a sample with full kernels.

Drying Cashew Nuts

- Drying mature cashew nuts is the most important aspect in producing high-quality raw cashew nuts.
- Proper drying requires three days of full exposure to sunlight during the dry season in Senegal, Gambia, and Guinea-Bissau cashew growing zones. A late cashew crop harvested during the rainy season may take a week or more to ensure nuts are properly dried.
- Nuts may be dried on cemented drying floors or appropriate sheets such as tarpaulin, mats, bamboo, or rice bags. The nuts should be spread thinly on the surface away from shade and turned at least four times a day.
- Nuts should be left to cool after drying before they are put into jute or burlap bags (not polypropylene or used rice bags). Jute bags allow air to circulate through the bags, thereby reducing damage caused by excessive moisture.

Three steps for testing dryness (all three must be true for the nut to be completely dry):

1. Firmly press the nut with your thumbnail. If a dent is left behind in the nut, it needs to dry longer. If there is no dent, then the nut is completely dry.
2. When shaking the dried nut, a rattle sound will be produced.
3. The color of the nut will look light brown for the dry season crop and dark brown for the rainy season crop.



Cashew nuts drying in the sun on tarpaulin sheets.

Storing Cashew Nuts

- Jute bags are the best for storing cashew because they help prevent excess buildup of moisture.
- Empty rice bags can be used to store cashew nuts, but for only a few weeks and when jute is not available.
- If rice bags are used, they should be left open when filled for three days before sewing to minimize perspiration during storage.
- A storage area should have a dry floor, a secure roof, and good ventilation.
- The bags should be stacked on raised platform, such as wooden pallets or logs to prevent moisture entering the nuts from the floor.
- Enough space should be left between stacks, between stacks and walls, and also below the roof to allow free circulation of air as well as for individuals to walk about and check the condition of the stacks.



Properly stacked cashew in jute bags.



Allow sufficient space between the stacked jute bags and the wall to allow for effective storage monitoring and air circulation.

Cashew Seed Selection, Planting, and Production Techniques

Selecting the Best Cashew Seed

Buyers, processors and exporters operating in The Gambia, Senegal, and Guinea Bissau frequently speak of the high-quality seed varieties and seed quality in the sub-region.

In order to maintain the sub-region's reputation, every farmer needs to follow the recommended practices for planting to ensure sustainability of the industry. Both current and future producers can take steps to ensure they are selecting the best quality nut for planting.

When planting a cashew tree, one must investigate the best seed variety suitable for the region. Not all varieties in the sub-region are the same; some are better than others, and it is usually determined by nut size.

International and local researchers are currently conducting a study to identify which local varieties possess the characteristics most desired by the market. This information will be widely disseminated through various institutions such as national agricultural and forestry ministries, IRD, US Peace Corps, and private tree nurseries.



Strong, healthy mother tree.

Selection Procedures

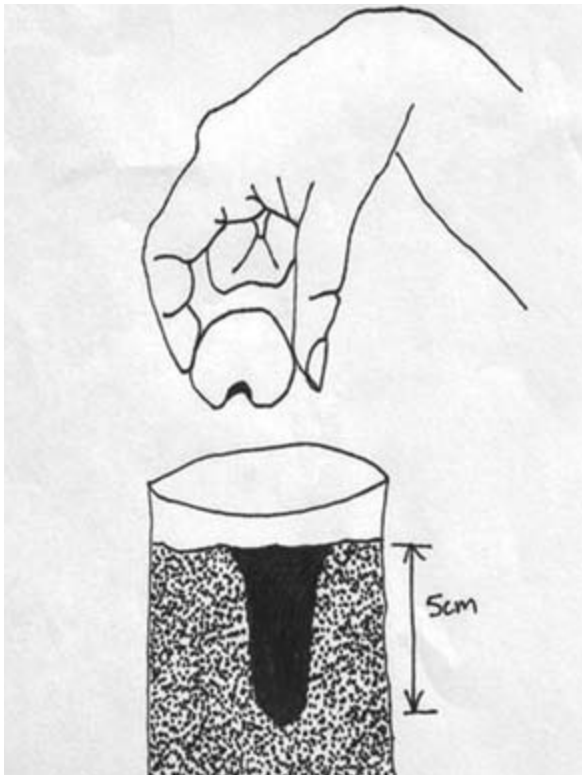
- Seeds for planting should be obtained from healthy mother trees of a recognized high yielding variety, aged 8 to 15 years. Scout for several cashew trees with good flowering and follow them through to maturity.

Selecting a Good Place for a Cashew Plantation

- Choose a site with well-drained soil.
 - Cashew does not do well in saline soil (salty soil) or clay.
 - Choose a site that is relatively flat with no large rocks or holes.
 - Clear land of shrubs and other wild growth.
 - Choose a site where you own the land.
-
- Nuts selected for planting should be fully matured (collected from the ground).
 - Select uniform sized nuts from the same variety. Record the name (if known) and location of each variety planted as a good farm management practice.
 - The cashew normally has three collection cycles during the season. Seeds collected from the second cycle are considered the best for planting.
 - All seeds must be dried in the shade for one week and only new seeds should be planted. Keep seeds from different trees separate to track the genetic origin of each tree in the plantation.
 - Store seed in a cool, dry location until ready for planting.
 - If seed is collected during the second harvest period (approximately in June each year), the seedlings can be started in June/July, with the best transplant time being during the rainy season in September/October.

Planting Cashew Seeds

There are two ways to grow cashew seeds. One way is to directly plant the seed in the desired location. Young trees planted directly into the plantation are easily eaten by small rodents, termites, and other animals. They also require watering which may be difficult on a large scale. Some of the seeds planted may not germinate



Plant seeds smile side down.

or survive. Another way is to plant the seed in a polypot (plastic bag) and then transfer the young tree seedling (approximately three months old) to the desired location. This type of seedling is usually developed at a tree nursery. In a tree nursery, it is easier to protect, care for, and monitor the tree seedlings. Tree nurseries typically sell the seedlings for a price that covers their cost of raising the seedling.



Direct seeding into mounds.



Example of a seedling transplant.

Figure 10: Pros and Cons of Establishing a Nursery and Direct Planting

Planting Technique	Advantages	Disadvantages
Direct Planting	<ul style="list-style-type: none"> • Fewer resources required • Less time consuming • Less labor intensive 	<ul style="list-style-type: none"> • Requires more seeds • Lower survival rate • More difficult to manage seedlings
Nursery	<ul style="list-style-type: none"> • Uses less seed • More selective out-planting process • Higher survival rate • Easy to manage seedlings • Opportunity for economic gains from selling seedlings to others 	<ul style="list-style-type: none"> • More time consuming • Requires more resources and materials • Labor intensive

Notes on Nursery Planting

- Prepare nursery site: (partially shaded and fenced) in mid-April.
- Obtain polypots: (forestry bags, drinking water bags, sugar bags) fill with compost or topsoil.
- Cover the nursery site with wood ash to deter termites and other pests.

Salt test for seed viability

- Add a hand full of salt to 10 liters of clean water.
- Add cashew nuts and stir vigorously.
- Let sit for 5 minutes; discard all floaters. Sunken nuts are to be used as seed. Must wash the salt from the nuts.

Planting of seeds

- Soak selected seeds in clean water for two days.

- Plant smile side down 5 cm into the soil.
- Water daily for 8 weeks before transplanting.

Transplanting

- Transplant in the evening after rains.
- Space seedlings 10 meters apart.
- Periodically revisit site for inspection and weed removal.

Notes on Direct Planting

- After first heavy rain, plant three seeds per hole/mound at a depth of 5 cm in a triangular pattern.
- After germination occurs and when seedlings are near 20 cm in height, only the most vigorous seedling should be left and the weaker plants gently removed to allow room for the biggest to continue growing in the mound.

Intercropping

When spacing cashew trees 10 meters apart, a farmer will have plenty of room between trees to grow crops such as millet, maize, groundnut, vegetables, sesame, and upland rice among other crops that will not damage the sensitive cashew root system.

Intercropping is best done when planting at least 3 meters away from each cashew tree. After about four or five years, the shade from the cashew tree may make it difficult to grow other crops, but the cashew grower should seek maximum gains from their land, especially while waiting for the cashew tree to mature and start generating income.



Fencing a cashew plantation may reduce loss to animals, but daily visits are just as important.

Plantation Fencing

Why do you need a fence?

Most farmers say that they lose a lot of cashew to thieves and animals entering their plantations. While fencing of a cashew plantation may reduce theft and animal damage, it won't completely stop it. If someone or something wants to enter a plantation, they will find away, even if you have put up the finest fence! Fences are an important part of plantation management, but don't be fooled, a fence will not guarantee an end to crop losses. Daily visits to the plantation and monitoring of the plantation is just as important as fencing.

How effective will different fencing be?

When choosing a fence, a farmer needs to think about the expected durability or life of the fence, and then compare that with initial cost. Some fencing materials such as barbed wire or chain link are relatively easy to put up, but they are expensive and easily damaged by weather (rust) or tampered with by intruders, reducing its effectiveness. Live fencing, or using plants, bushes, shrubs and trees, as a barrier are less costly and will last longer. Some live fencing plant varieties include sisal, acacia, lime tree, cashew tree, mesquite, euphorbia or bougainvillea.



Some of these plants have thorns or spikes that deter animals and humans from entering the plantation. Fencing is an element of effective plantation management. Live fencing may take longer to establish, but can last longer and is less expensive in the long run.

What is the cost of fencing?

Fencing can be expensive or done on a shoestring budget. Barbed wire is the most expensive, while live fencing the less expensive but more time consuming to establish.

Alternatives: One plantation owner decided not to use a fence but dug a one meter trench around his orchard to deter livestock from grazing on his trees. It proved a great way to minimize cattle damage.

Sustainability: Some live fencing species (acacia) offers a barrier from animals and thieves, as well as wind and fire.



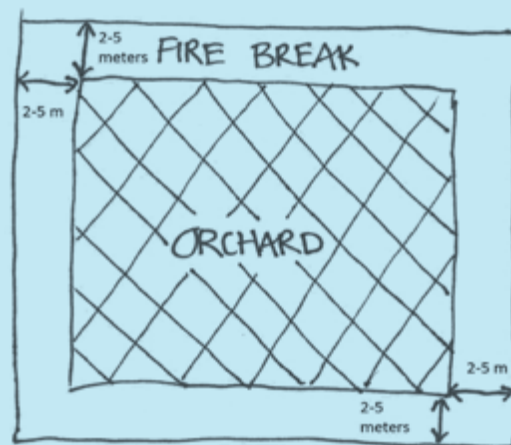
Left: Barbed wire fencing surrounds a cashew plantation.

Above: This farmer burned radial tires to leave behind the wire, which was then used to build fencing.

Fencing is a business decision: Fencing should be a part of a cashew farmer's business plan and factored into the cost of production. One farmer was committed to fencing his plantation, so he planted and sold cassava for two seasons and put aside the profits in a savings account until he had enough money to erect a fence around his plantation. He was proud to report that after two years, he was able to completely fence his plantation with barbed wire fencing. This proves that if you plan and take the necessary steps, your plan can become a reality!

Care and Maintenance of a Cashew Orchard

- Regular maintenance of individual trees and the orchard are necessary for a successful production. Maintenance includes fire protection, pruning, weeding and fencing.
- A fire break between 2 and 5 meters wide should surround all cashew trees in the orchard.
- Removal of weeds in and around the cashew orchard must be done in both the dry and rainy season to help minimize the chance of fire and to allow easier access for collection of nuts and fruit.
- Properly fencing one hectare of cashew will yield more cashew than many unfenced hectares.



Sample plantation layout including a fire break to minimize potential fire damage.



Tree in need of pruning.



Pruning allows for regrowth.



Remove old flowers.



Removing tips increases shoots.

Pruning Cashew Trees

- Pruning should be done after the collection season and before the rains. Pruning stimulates new growth, and pruning the lower branches trains young seedlings to grow tall. Pruning dead branches can provide household firewood.
- Pruning should be done after the collection season, and before the rains start to allow maximum regrowth.
- Any branch that is diseased, infested, has low production, or is dead should be pruned.
- Pruning of top branches can be done to allow sunlight to reach lower branches.
- Pruning lower branches allows easier access for collection and maintenance of the cashew tree.
- Any branch that crosses over to another tree should be removed so that the canopy of one tree will not interfere with a neighboring tree.



Removing lower leaves in young seedlings.

- Remove the tip of branches that fruited the previous season to allow more shoots to form, which in turn leads to more nuts.
- Remove the lower leaves of young seedlings to allow fast growth while deterring cattle.

Tree Grafting

Grafting is the replacement of the top of a cashew tree or seedling with the shoot of a high-yielding variety, taking advantage of the well-developed root system and strength of the existing tree. Grafting a high-yielding and better-nut quality variety onto an established tree will improve the productivity of the poor-yielding tree in a shorter time. Grafted trees tend to come into production much earlier than trees grown from seeds: they usually bear fruit within two years, whereas trees grown from seed take up to five years to mature.

- Grafting can establish a large uniform nut size.
- Grafting can increase the average yield per tree.
- Grafting enables the cashew farmers to select desired varieties of cashew for their plantations.
- Grafting enables the cashew farmers to select high-yielding varieties in their plantations.
- Trees identified for selecting grafting materials should be 7–10 years old and healthy (free of diseases).
- Grafting requires specialty skills and can have a survival rate of 80 percent.
- Nuts from grafted trees cannot be used to grow seedlings because they lose their characteristics.

Apiculture and Cashew Production

- Bees can help cashew trees sustain a uniform nut and apple size.
- Bees can help a cashew tree develop large cashew nuts.
- Bee keeping is a value addition to a cashew orchard.
- Bee keeping does not have to be taken on by the farmer but can be a joint undertaking between the cashew farmer and a local bee keeping specialist.
- If there are many bees in the orchard during flowering time, many flowers will be pollinated and the resulting collection will be better than in fields with no bees.
- Bees will travel up to 600 meters in search of flowers.



Local bee hive.



Basket hives.



Bee cross-pollination in cashew trees creates more uniform nut and apple size.

- There are four ways to know if a crop is adequately pollinated: 1) well-shaped fruit, 2) a uniform nut size, 3) full nuts and 4) tight clusters of fruits or seeds.

Value Addition Cashew Products

Value addition is the enhancement of a product or service by a company or individual before the product is offered to customers. With the enhancement, the product is more highly valued by the customer, and therefore the customer is willing to pay the higher price for the product. The value addition should yield a greater return than the cost of the enhancement.

Most cashew from the sub-region is exported to India and Vietnam as a raw nut. Processors in India, Vietnam, and Brazil then remove the kernel from the nut, roast it, and send the white kernel on to European and American companies who add flavors and packaging tailored to meet the demands of the consumer. The local farmer gets paid a price for the raw nut he sells to the exporter, and this is usually the extent of income gained from the cashew crop. The person who can go beyond selling the raw nut has the potential to gain additional income. While the cashew kernel has been the main focus of processing efforts, there are several ways farmers and local businesses can benefit from the cashew trade. For example, 1 liter of locally pressed fresh cashew juice sells for around D50/CFA855/US\$1.80. One kilogram of locally processed cashew kernel sells for approximately D250/CFA3,500/US\$7.50. While making profit in cashew processing takes good management, hard work and dedication, attention to detail, and a high level of efficiency, value addition is something worth investigating.



The Cashew Apple

For some people, the real value is hidden in the cashew apple, to the point where some farmers focus their attention on the income-generating potential of the cashew apple over the nut. Processing the cashew apple is widely practiced by many groups in the sub-region, because there is a ready market for the products. The apple can be pressed for its juice. In no time at all the juice ferments and is processed into wine or distilled into a liquor. The apple pulp can also be used to make candies, cakes, jellies and jams, or even dried and pounded into a couscous. Even the remaining pulp can be dried and used for animal feed; some are even looking to convert it into energy as biofuel. Each different product has a monetary value where there had been none before.



Apples can be eaten raw or pressed into juice, as shown in the traditional apple press.

Figure 11: Cashew Value Chain Enhancement

COMMODITY	VALUE ADDED PRODUCT
Cashew Nut	Primary level white kernel (33 grades from whole white to powder)
	Secondary level roasted/salted
	Specialty kernels (spicy, chocolate covered, etc.)
	Cashew nut butter
Cashew Apple	Fresh fruit
	Fresh juice
	Wine, distilled liquor
	Ingredient in cakes, cookies, candies
	Jelly and jam
	Couscous (dried and pounded)
	Dried fruit (for reconstitution)
	Waste pulp dried for animal feed
Apple waste converted into biofuel	
Honey	Honey from beehives in cashew plantations
	Candles and soaps from beeswax
Cashew Shell	Fuel source for local processors, component in briquettes
Cashew Peel (testa)	Animal feed
Cashew Seed	Seed nursery raised and certified high-quality seed
Cashew Seedling	Nursery raised seedlings ready for transplanting on plantation

Other Cashew-Related Industries

When owning and maintaining a cashew orchard, farmers can maximize outputs by incorporating bees into the orchard. Along with bees comes honey, and honey not only has an economic value but it has a medicinal value. Selling quality cashew seed and seedlings is another way to

make extra money from cashew. In all cases, an individual or a small group must become specialists, learning everything there is to know about how to produce a quality product, meet consumer demands, and manage their resources and time to produce a high quality product at a reasonable price.



Quality cashew seed and seedlings can be sold, as demonstrated by Peace Corps volunteer Jeff Gilleo.



Honey can be harvested from beehives in a cashew plantation.

Cashew Nutrition Information

Nutritional Value of Cashew Nut

Popular not just for its rich creamy taste, the cashew nut is now confirmed to have many health benefits as well. Several nutritional studies dating back to the 1990s show that people who regularly consume cashew and other tree nuts improve their overall health in several ways. Research carried out by Harvard's School of Public Health and documented in the *British Medical Journal* in 1998, found that the daily consumption of nuts reduces the frequency of heart disease. Adding a small portion of nuts (roughly 30g/day) to a healthy diet can reduce the risk of a heart attack. Routine nut eaters may gain an extra five to six years of life free of heart disease and may increase longevity by about two years. In addition



In addition to reducing the risk of heart attack, cashew consumption is also linked to reducing the risk of stroke, developing type 2 diabetes, gallstones, muscle degeneration, and dementia.

to reducing the risk of heart attack, cashew consumption is also linked to reducing the risk of stroke, developing type 2 diabetes, gallstones, muscle degeneration, and dementia.

While cashew is relatively high in fat (12 grams per ounce), cashew is actually lower in fat than peanuts (14 g per ounce). Furthermore, the fat contained in cashew is considered a “healthy fat,” since it is unsaturated, which lowers cholesterol. Cashew, like other nuts, has no cholesterol.

Cashew nut is a complete protein source. Only slightly less than animal protein, cashew provides you with 5 grams of protein in a 28 gram serving. Despite the high fat and calorie content of nuts, a 2009 study published in the *American Journal of Clinical Nutrition* suggests cashew can actually help with weight loss. This is because of cashew's high protein content—cashew nuts make you feel full and satisfied after eating even a small amount, while other snacks leave you hungry for more.

The more often nuts are eaten, the better, as the benefits appear to increase as the frequency of nut consumption increases.

Nutritional Value of Cashew Apple

What we refer to as the cashew apple is actually the swollen stalk above the cashew nut (which is also not really a nut, but a seed!). Originally found in Brazil, Portuguese traders carried cashew to countries such as Guinea-Bissau, Mozambique, and India during the 16th century. With its succulent fruit and sought-after nut, the cashew

Drawbacks to Eating Cashew Nut and Apple

The cashew tree (*anacardium occidentale*) is related to the mango and pistachio tree as well as poison ivy and poison oak. Anyone with allergies to these trees should be cautious when eating cashew, particularly when touching the cashew apple. Likewise those with a pre-existing kidney or gallbladder problem should avoid eating cashew nuts. And for those watching their weight, moderation is the key. The health benefits of eating 1 ounce/28 grams of cashew per day are positive and won't add weight. Cashew fruit has high levels of tannin, which can lead to some nutritional deficiencies. Too much tannin prevents the body from fully assimilating protein. Those same tannins cause stains on clothing. Be careful when eating fresh cashew fruit, as it could stain your clothes.



Above: The cashew apple in its own right is an excellent source of nutrition.

Below: Freshly collected cashew.

tree is now widely cultivated in Africa. Most commonly grown for the nut, the cashew apple in its own right is an excellent source of nutrition.

As a fresh fruit, the cashew apple has a sweet taste that can make your mouth pucker when eating it. The fresh apples are highly perishable and don't transport well. Most people enjoy the cashew apple not far from the plantation, but it can be found in local markets during the cashew season. Throughout West Africa, young children especially are known to love cashew apple!

The cashew apple can be eaten fresh, juiced, preserved, or dried. As the nutritional benefits of cashew apple fruit are uncovered, interest is growing on how to use it, whereas it had been largely left for waste in the past.

Cashew apple has more vitamin C than citrus fruit. A tropical fruit, the cashew apple is rich in vitamins and minerals. The vitamin C (ascorbic acid) content in a cashew apple is almost 10 times that of pineapple and four times that of oranges (*Journal of Tropical Agriculture* 2004).

The fruit has medicinal properties. It is used to treat scurvy and diarrhea, and it is effective in preventing cholera. It is applied to treat neurological pain and rheumatism (FAO 2004).



Running A Successful Cashew Processing Business

Believe it or not, cashew nuts are still processed by hand, even in many of the world's largest factories. Due to the hard outer shell and the delicate nature of the inner kernel, it requires careful handling. Throughout West Africa, people have been shelling and roasting cashew nut using traditional methods for decades: heating the nuts over an open fire until the shells are brittle, cracking the shells using a stone or stick, and then drying or roasting the kernels over heat to brown the nut for added crunch. The process used in commercial factories is not so different, although they follow much higher cleanliness and quality standards as well as realize greater processing efficiencies. With proper equipment and trained skilled workers, a higher percentage of the raw nuts will end up as the highly valued whole and split kernels rather than small broken bits.

The challenge for the small-scale cashew processor in West Africa is to achieve a sufficiently high level of processing and management efficiency to allow them to make a profit from processing. The inefficiencies in the traditional processing methods add to the high prices passed on to the local cashew consumer.

As in any business, the cashew processor needs to gather all of the relevant information about running their business; research consumer preferences as well as realistically calculating how much it will cost them to operate. Any processor, whether artisanal, family run business, or a large scale factory, must develop a detailed business plan. This includes the cost of buying raw nuts, the cost of equipment, rent, borrowing money in order to buy raw materials, hiring and training workers, marketing, transport, etc. Only when a business has realistically assessed their resources, their commitment, and their willingness to take a risk, can a processor have a solid foundation upon which to build his or her business.

Based on the assessment conducted, it may become clear that only one part or stage of cashew processing would be feasible for business. There are a range of options available to rural entrepreneurs and urban food processors which build on existing experience and skills and still realize profit. Figure 13 illustrates such a network of processors that individually may be small, but together can create an efficient cashew processing value chain.

All successful cashew processing ventures have one element in common: commitment. With a vision for adding value to cashew, a commitment to maintaining quality and value for money, and willingness to take personal responsibility for the profitability of the business, cashew processing has the potential to be a viable business.

Figure 12: Elements of a Successful Cashew Business

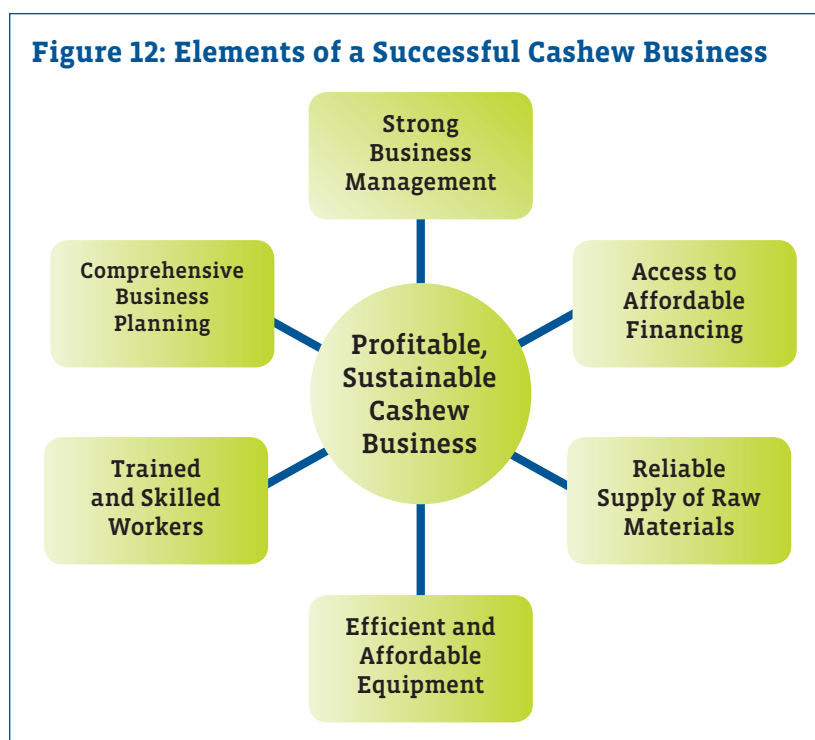
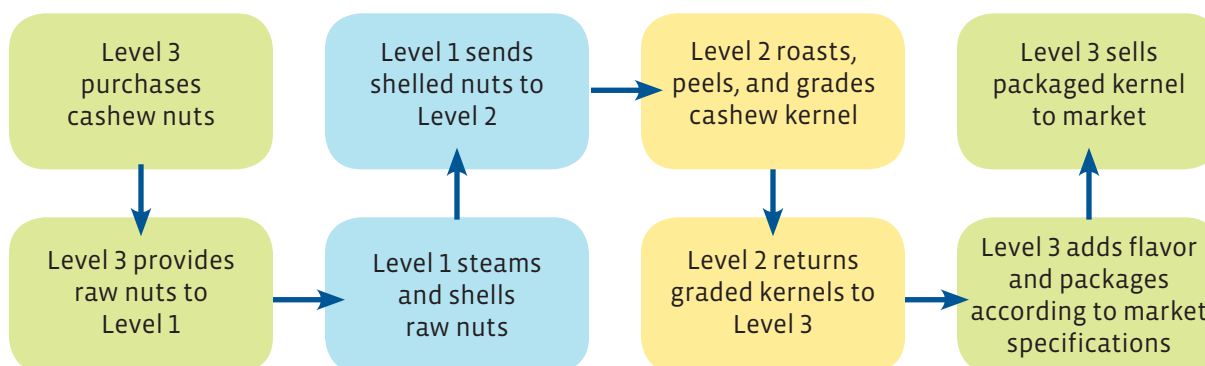


Figure 13: Cashew Processing Cluster Specialization Model

FUNCTIONS	CHARACTERISTICS
Level 1 Processors	
<ul style="list-style-type: none"> • Receive raw nuts from Level 3 • Steaming • Shelling • Delivery to Level 2 	Village-based groups; traditional processing experience; good level of organization; basic business concepts; ability and will to honor contractual arrangements of processing; Operating in cluster groups to increase volumes
Level 2 Processors	
<ul style="list-style-type: none"> • Roasting • Peeling • Grading • (Basic packaging optional) 	Town or regional center-based (with electricity, running water, roads, etc.) Group well organized; experience with peeling, roasting; capacity to meet quality standards as required by buyer; ability and willing to fulfill contractual terms
Level 3 Commercial Agents	
<ul style="list-style-type: none"> • Provision of raw nuts • Flavoring • Packaging • Marketing 	Established commercial entity with strong market contacts for both raw nut purchase and processed kernel sales



LINKAGES/PRODUCT FLOW
<p><i>Market Terms:</i></p> <p>Level 3 Agent provides high quality nut to Level 1 processors States expectations for return on raw nuts (resulting shelled nuts by kilo and timeframe) States price per accepted kilo of shelled nuts</p> <p>Level 1 Agrees to batch process so as not to mix nuts from other sources Agrees to timetable for shelling of nuts Agrees to follow approved practices for processing and storage</p> <p>Level 3 States expectation for resulting in specific grades of kernel) from Level 2 within a timeframe States price per kilo of acceptable grades received from Level 2</p> <p>Level 2 Agrees to timetable and price to be paid per kilo of acceptable graded nuts. Agrees to followed approved practices for batch processing, processing technics, and storage practices</p> <p>Level 3 Agrees to continue the process based on a satisfactory results (return on raw nuts)</p>

Gambia River Basin Cashew Value Chain Enhancement Project (CEP) Partners

International Relief & Development

IRD is a nonprofit, nongovernmental organization responsible for implementing relief, stabilization, and development programs worldwide. IRD's mission is to reduce the suffering of the world's most vulnerable groups and provide the tools and resources needed to increase their self-sufficiency. Specializing in meeting the needs of communities emerging from conflict or natural disaster, IRD partners with donors, local organizations, and many others to deliver sustainable services in agriculture, governance, health, and infrastructure. For more information, visit IRD.org.

US Department of Agriculture

The USDA's Foreign Agricultural Service (FAS) links US agriculture to the world to enhance export opportunities and global food security. In addition to its Washington, DC, staff, FAS has a global network of 98 offices in 75 countries covering 156 countries. FAS staff identify problems, provide practical solutions, and work to advance opportunities for US agriculture and support US foreign policy around the globe. For more information, visit www.fas.usda.gov.

Peace Corps

In 1961, President John F. Kennedy established the Peace Corps to promote world peace and friendship. To date, over 200,000 volunteers have served two or more years in 139 countries to promote the Peace Corps' mission of

- helping the people of interested countries in meeting their need for trained men and women
- helping promote a better understanding of Americans on the part of the peoples served
- helping promote a better understanding of other peoples on the part of Americans

For more information, visit www.peacecorps.gov

African Cashew Alliance

The African Cashew Alliance was established in 2005 as an association of African and international businesses with an interest in promoting the African cashew industry. More than 90 member companies work under the ACA banner and represent all aspects of the cashew value chain, including producers, processors, traders, and international buyers. ACA aims to expand African processing capacity, improve the competitiveness and sustainability of the African cashew industry, and facilitate public-private cooperation for the cashew sector. The ACA vision: A globally competitive African cashew industry that provides benefits to the value chain— from farmer to consumer. For more information, visit www.africancashewalliance.com.

