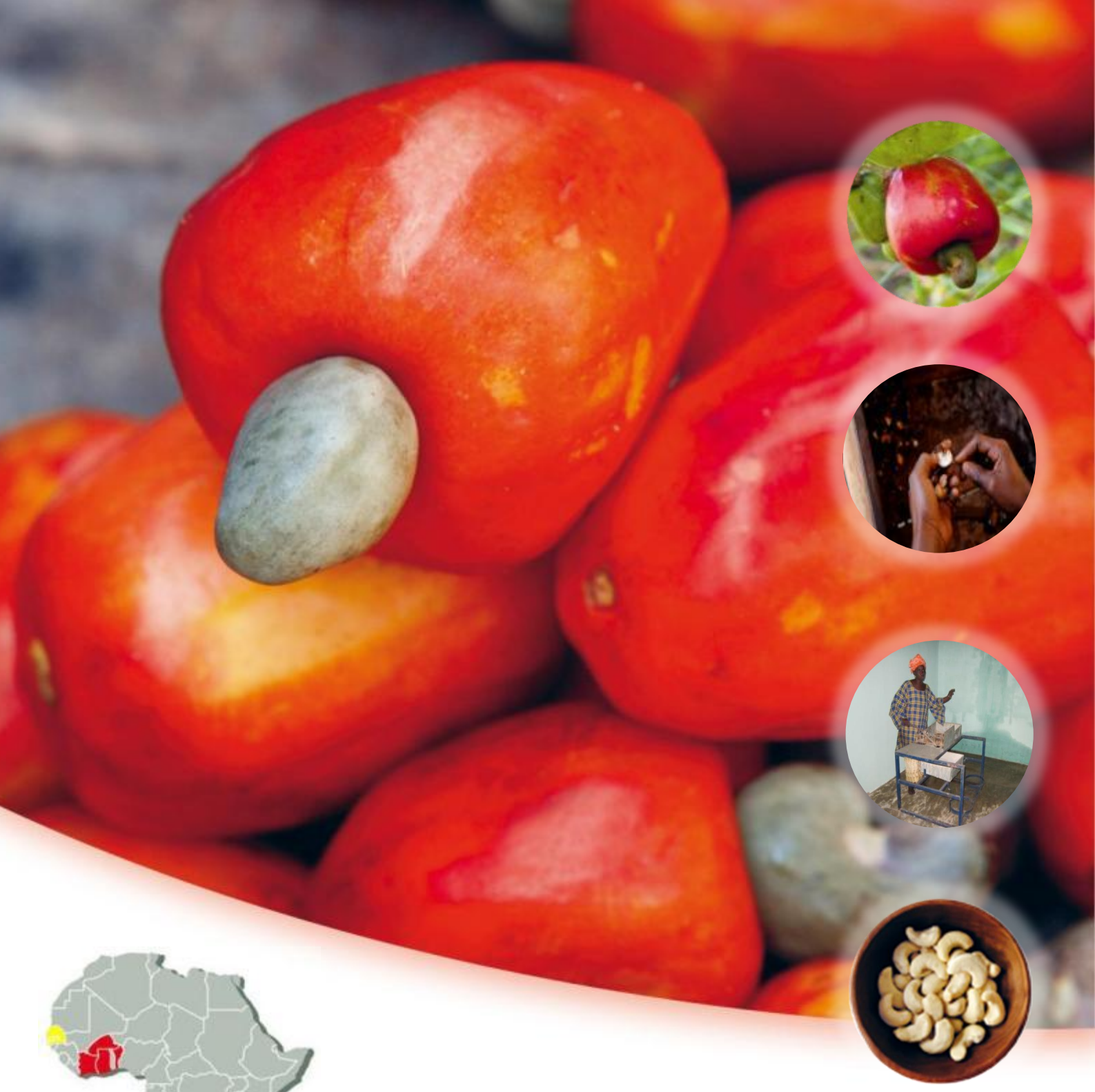

Analysis of the Cashew Value Chain in Senegal and The Gambia

African Cashew initiative

African Cashew Initiative is funded by:

Federal Ministry for Economic Cooperation and Development

and private sector partners

Implemented by:

In cooperation with:

Published by:
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Internationale Zusammenarbeit (GIZ) GmbH
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Place and date of publication:
Germany,September 2011

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Acknowledgement:
This study has been implemented as part of the African Cashew initiative (ACi), a project jointly financed by various private companies, the Federal German Ministry for Economic Cooperation and Development and the Bill & Melinda Gates Foundation.

ACi is implemented by the African Cashew Alliance (ACA), the German Development Cooperation GIZ, as a lead agency as well as FairMatchSupport and Technoserve.

This report is based on research funded by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

Design:
© creative republic // Thomas Maxeiner Visual Communication,Frankfurt am Main/Germany
T 4969-915085-60
I www.creativerepublic.net

Photos:
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Analysis of the Cashew Value Chain in Senegal and The Gambia

September 2011

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Executive Summary

Cashew nut processing and exports are relatively new to The Gambia and Senegal even though the cashew plant has a relatively long history in Senegal. Already in the 1940s the tree was introduced by the colonial Senegalese government. Until the 1970s occasional plantings took place meant as a means of reforestation and soil stabilisation, and providing hedging for mangos and other crops, windbreaks for vegetables, fruit for juicing and fermentation, and firewood. With the war in Guinea Bissau starting many cashew farmers fled to Southern Senegal brining cashew seeds and experience in cashew production to the region. Migration from the region brought the knowledge to The Gambia as well. This knowledge transfer in combination with the demand from cashew buyers displaced by the war in Guinea Bissau as well supported the commercialisation of the crop in the 1980s. Finally, in the 1990s significant volumes became available to attract buyers which brought about a further development of the sector.

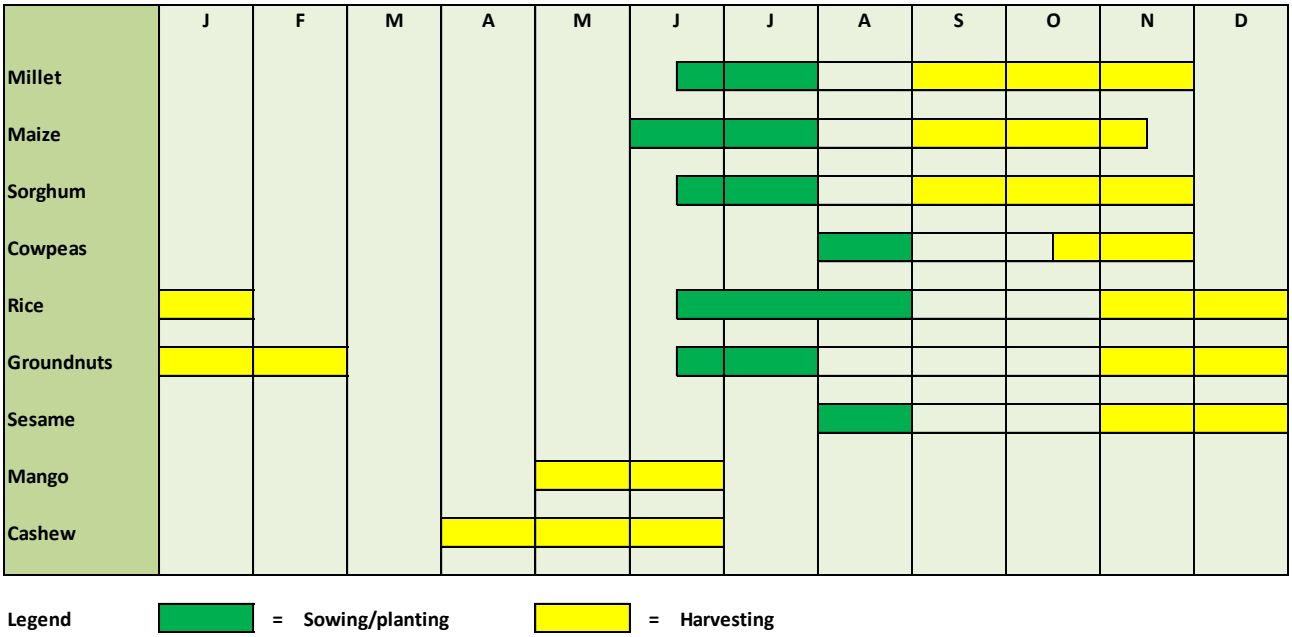
Nowadays, production has reached a level of around 26,000 tonnes in Senegal and 9,000 in the Gambia. In Senegal, most cashews are grown in Casamance. Here, cashew growing can be found in the whole region. As one of very few sources of income for the rural population cashew production is quite important in economic terms. Smaller production areas are located in the regions Fatick and Thies. Near the town Sokone in Fatick region a relative stable production of 500 – 1,000 tonnes takes place. In Tivaoune Department of Thies region another estimated 1,000tonnes of cashew are produced. In all three regions land is becoming scarce but there is clear enthusiasm for planting where possible. Overall, production is likely to increase in the medium term as new plantings mature.

In The Gambia, production takes place on both sides of the River. On the Southern side production is concentrated around Brikama, 30 km south to Banjul. On the North Bank cultivation areas extend a considerable distance upstream. Overall, an estimated 20,000 hectares is under cashew cultivation in the country. But estimations are rather difficult to make since intercropping is the prevailing planting style. Intercropping is typically done with maize, millet or groundnuts. Since Gambian trees are mostly less than 10 years old there is further potential for production to increase.

The cashew harvest in Senegal and The Gambia comes at the end of the West African season. While there are no other harvests elsewhere in the World that compete at this time, the market tends to be well supplied. The evacuation and sale of the Ivoirien crop, the biggest in Africa, continues as the Senegal/Gambia crop is picked. Even though Senegalese and Gambian nuts are of higher quality (in terms of nut size and outturn[1]) such concurrence of volume in the market weighs on prices. Nationally, in both countries the cashew harvest arrives when there is little other work to be done in the fields and when stored food runs short. Therefore, the revenue from cashew can have significant implications for food security. Even though farmers' knowledge on prices is limited their share in the FOB value of the product lies at around 60 to 65% of the FOB value and interviews indicate that cashew is perceived to be "more profitable" than groundnuts. In sum, farm gate sale bring an estimated 15 million US Dollars to the rural economy: around 4.1 million US Dollar (135 million GMD) in The Gambia and 11.7 million US Dollar (5.85 billion CFA) in Senegal.

[1] See Cashew Conversions on page 46 of this study.

Figure 1: Crop calendar for Senegal and The Gambia



The cashew value chains in Senegal and in The Gambia are very similar. They are simple and direct with the harvest passing from farmers to buying agents who work for larger collectors. At the collector's level, the value chains of Senegalese and Gambian cashew converge into a single export conduit with a few Banjul-based export companies handling the crop from the two countries. Exports through Banjul are further supplemented by occasional smuggling from Guinea Bissau. Cashew exports through the port of Dakar are much less since Banjul is the better located, lower cost port. Almost all cashews exported leave to India. Indian national exporters have done much to stimulate production as well as marketing the output: not only have they encouraged production by buying the crop directly from the farmers, but some have also worked with farmers to teach quality aspects and seed selection for planting. While processing remains a desirable objective it is most likely that India will remain the major buyer of the RCN with Vietnam likely to also buy. RCN exports that by value account for 80% of the agricultural exports of The Gambia and roughly 2% of agricultural exports from Senegal are likely to further increase.

RCN demand from the local processing industry is quite restricted. There have been a number of efforts to establish processing with mixed success. Some are operating and buy the output of one or two tonnes from the locality. For the most part, the industry is undercapitalised and cannot finance the purchasing of raw material from own funds. Activity, therefore tends to be limited to processing the output of the owners farm.

There has been little government interest in the cashew nut production, commercialisation or potential to date. Both Governments focus their attentions on subsistence staple crops and the traditional cash crops (e.g. groundnuts). For the cashew sector there are no extension services for cashew growers, no research initiatives and no overseas promotion. The level of support may be about to change: the increasing volumes and value of exports are now more visible, and the Presidents of both countries are on record in 2010 speaking in public in support of the cultivation of cashew to farmers. For the present, there is no indication of plans in preparation to promote the cashew sector.

There are at least eight facilitating donor projects working at the farmer level in Senegal. A single project supports cashew production in The Gambia. The projects, which are mostly pro-poor and focus on the under-developed region of Casamance, provide support along the value chain from the top end of establishing seed-gardens, through technical assistance to farmers via associations to support to the struggling processing industry. They do not intervene in the commercialisation process, for example through supporting storage or combined marketing. Interventions in The Gambia could have a significant impact on a large number of the rural poor.

The outlook for Senegal and The Gambia as producing regions is encouraging: its cashew sectors are gaining momentum. We note the upward trend in exports, we see investment in warehousing for cashew on the approaches to Banjul, and we find new planting in the major production areas. The two origins have the potential to expand output much further. The increasing affluence of India and China have more than compensated for the slowdown in demand growth in the West. And, even more importantly, these markets now take up some of the inferior grades that were more difficult to market in the past. This is clearly encouraging for the small producers such as Senegal and The Gambia.

The outlook for the processing industry in the region looks less good. There is excess cashew processing capacity worldwide and we can expect a continued pull from the market for the export of raw cashew nuts. Processing margins will remain slim. In these circumstances establishing a new processing enterprise to compete globally is going to be difficult and we can expect the export of raw cashew from Africa to continue for some time yet. Local consumption of kernels in Africa will remain restricted by price and the low level of disposable income in the population. But as the example of Dakar shows background demand may well support a small industry for supplying domestic consumption.

In sum, we see significant potential for further growth:

- The global cashew market appears to be in a structural deficit and can easily absorb further growth in production.
- The RCN of The Gambia and parts of Senegal is a desirable quality.
- There is land available in both The Gambia and Senegal suitable for cashew cultivation
- The current pattern of inter-cropping cashew with maize, millet, groundnuts, etc. ensures the continued production of food crops without excessive interference from cashew.
- Cashew husbandry does not interfere with the normal farming cycle. In fact, most of the work required for cashew comes at a time when there is little alternative farm activity (see Figure 1)

Cashew is cultivated in areas of rain-fed agriculture where there are few alternative sources of revenue. In the Gambia only groundnuts and sesame occupy this position.

1 Introduction

The present report was prepared following a tour of Peter Jaeger and Gabriel Gomez to the cashew producing and trading areas of Senegal and The Gambia in September 2010. Their findings were particularly supplemented with a baseline survey report[2] undertaken in the course of the Gambia River Basin Cashew Value Chain Enhancement Project (CEP) implemented by International Relief and Development (IRD).[3]

In the course of the field trip and the production of this report several different methods were used. Besides the exchange with GIZ and ACi staff the authors conducted a collection of bibliographical data. Literature on the Senegalese and Gambian cashew sector was relatively scarce, however existing studies as the above mentioned CEP study as well as GTZ-reports on its former Projet Anacardier Senegalo-Allemand (PASA) project provided important insights. Furthermore, the authors collected information during interviews with different cashew sector stakeholders and through observation during their visits of the production areas. With limited Government involvement in the value chain it is not surprising that there are no official statistics on the production, yield, harvest or commercialisation of cashew in either The Gambia or Senegal. Therefore, the data presented in this report should be treated as estimates rather than solid figures. Thus, the export statistics (in Annex 1) are not consistent with the data gathered from private sources. The same is true for the figures presented in Table 1.1 below on production, processing and export possibilities. However we can assume that these proxies provide a picture which is close to reality

Note also that the value chain analysis was carried out by a series of interviews that are in no way sampled surveys of the agents at the different levels of the value chain. The structure, however, of the chain is such that at the exporter level well over 50% of the enterprises involved were interviewed because there are relatively few, whereas at the farmer level, where there are numerous families involved, the interviews form a series of case studies rather than a representative sample.

The following description of the cashew value chain in Senegal and The Gambia is structured as follows: Firstly, the authors will go into the analysis of the cashew value chain of Senegal. In the subsequent chapter the cashew value chain of The Gambia will be described. In both cases we will treat the topics cashew production, cashew commercialization, cashew processing, and support Organizations active in the cashew sector. Concerning production in the two countries one has to say that it is relatively low compared to other Western African cashew producers. But a constant rise in production could be observed in the last years. Processing capabilities of the two countries are relatively low.

In the final chapter, common aspects of the Senegalese and Gambian cashew value chain will be treated. This is necessary since the two chains are very much interlinked and at the level of exporters they even converge into a single export conduit with a few Banjul-based export companies handling the crop from the two countries. As can be seen in the table below, exports through Banjul are further supplemented by occasional smuggling from Guinea Bissau. Since the processing industry in the two countries is tiny, the vast majority of cashews are exported as raw nuts as in most other producing countries in the region, mostly to India.

Table 1.1: Estimates for the production, processing and availability for export of cashew in Senegal and Gambia

	2005	2006	2007	2008	2009	2010
Gambia	1,500	1,500	3,000	5,000	7,000	9,000
Senegal	21,000	22,000	22,500	23,500	25,500	26,000
Smuggling from Guinea Bissau	2,500	2,500	3,000	3,000	33,000	3,000
Processing	1,050	1,050	1,050	1,050	1,050	1,050
Total Availability for Export (after weight loss)	23,280	24,250	26,675	29,585	61,275	35,890

Source: ACA (2007), trader's estimates, border declarations, Syndicat des Transportateurs and Jaeger / Gomez' interviews, 2010

.

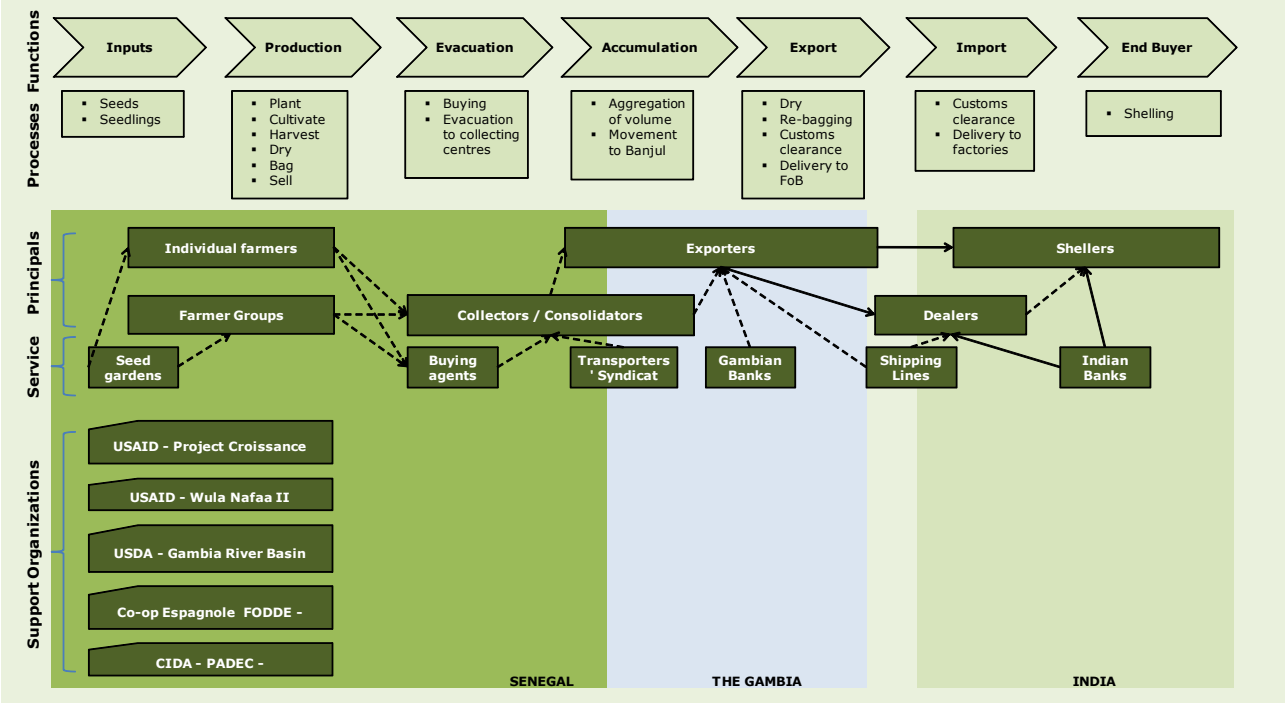
[2] International Relief & Development (2010): Baseline Survey Report. The Gambia River Basin Cashew Value Chain Enhancement Project (CEP).Part 2: Data Analysis

[3] If there is no other source mentioned the findings of this study are based on the insights won during Jaeger's and Gomez' field trip.

2 Analysis of the cashew value chain in Senegal

The cashew value chain in Senegal is summarised in Figure 2.1. The figure shows the flow of cashew nuts from the producer to the processor in India. Cashew processing activity in Senegal is very limited and will be described in section 2.3. The figure here shows a relatively simple flow of cashew from the farmers through collectors to exporters and then out to India. The activities involved at each stage are shown above the flow of cashew, while, below the flow line, the support services that contribute at each stage are indicated. Underpinning it all are the support organisations where we would place the Government agencies if they were involved, and where we list the donor projects that are currently active.

Figure 2.1: The Cashew Export Value Chain in Senegal



Source: Jaeger / Gomez' own research

In the following sections we will provide details of the different levels of the value chain and the ancillary services, but there are some points to note in the above diagram:

- The chain is simple and there are not many links
- All the project support is focussed upstream
- The banks, as service providers, are only involved downstream with the exporters or the dealer/shellers.

We start our review of the value chain upstream.

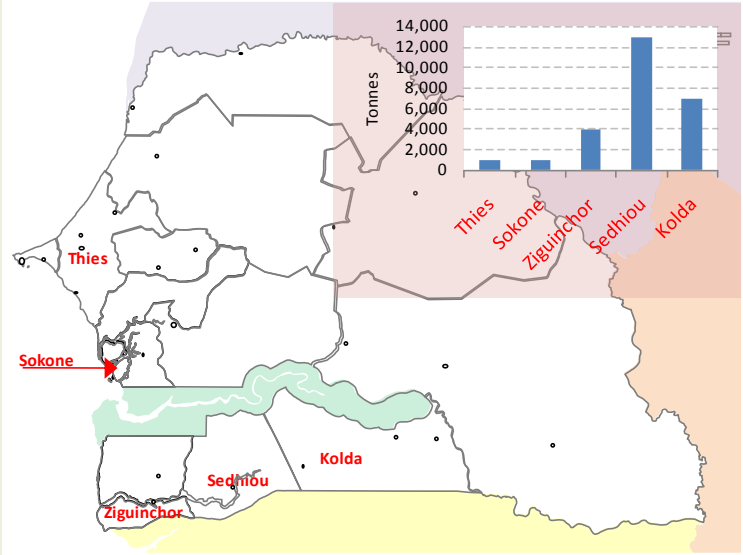
2.1 Cashew Production

Cashew was introduced in Senegal in 1939 when the colonial Senegalese Government started to promote cashew due to its nutritious value. In the following years occasional plantings took place but mostly the fruits were used for eating out of hand, juicing or wine. In the 1960s a production of 200-250 MT was recorded in the country. Production then rose markedly in the 1970s and 80s. The war in Guinea Bissau started, many people fled to Casamance. Quite a number of them were cashew farmers who brought seeds and knowledge about cashew planting to the region.[4] Finally, in the 1980s a trader in Ziguinchor reportedly recognized the potential of cashew nuts and began buying and providing a market for casual collectors. The proximity to the extensive cashew plantings of Guinea Bissau and the close ethnic linkages have further contributed both planting material and an understanding of cashew husbandry. It is not surprising then, that the major plantings are along the Guinea Bissau border, though hostilities (see box) within the region have likely slowed development of a more robust cashew industry.

[4] International Relief & Development (2010): 5.

Cashew is grown in five administrative Regions of Senegal (Figure 2.2). Total production is about 26,000 tonnes but is increasing year-on-year (see Table 2.1 on the following page). The quality of cashews produced in Senegal is approximately as high as the Beninese quality and ranks second or third in Africa. The principal growing areas are in the Casamance which lies between The Gambia and Guinea Bissau. Further production is found in the Fatick Region where the community around Sokone has developed some plantings, seemingly as a consequence of donor projects and NGO initiatives. Lastly, east of Dakar, in the Thies Region, there is further significant production to the northwest of the city of Thies, in the Tivaoune Department.

Figure 2.2: Cashew Production in Senegal by Administrative Region



Source: Jaeger / Gomez' interviews with buyers and the ACA

Figure 2.3: Locations of Cashew growing ares in Senegal

Source: Google Maps

Table 2.1: Estimated Cashew Production in Senegal in Recent Years (in tonnes)

Region	2005	2006	2007	2008	2009	2010
Thies	1,000	1,000	1,000	1,000	1,000	1,000
Sokone	500	500	500	500	500	1,000
Casamance	19,500	20,500	21,000	22,000	24,000	24,000
Total	**21,000**	**22,000**	**22,500**	**23,500**	**25,500**	**26,000**

Source: ACA (2007), trader's estimates, border declarations, Syndicat des Transportateurs and Jaeger / Gomez' interviews

The Conflict in Casamance

The Conflict in Casamance was a long-running low-level conflict with origins in an independence movement in the 1980s by Casamance people where the dominant ethnicity is more akin to Guinea Bissau and The Gambia than to the Wolof people of Senegal. By the 1990s the dispute had developed into an armed rebellion that rumbled on with varying levels of violence to a peace deal in 2001. The accord split the secessionist side into factions, and there was continued occasional fighting until about 2005. Since then a more peaceful mood has prevailed, although there are still reports of disturbance and areas said to be mined. In October 2010 the Senegalese government accused the Government of Iran of attempting to re-arm the rebellion and withdrew their ambassador. In the few days spent in the area in the course of researching this report there was no evidence at all of recent or continued disturbance.

Also, the issues of mined land are not clear. There are reports of inaccessible areas, but we saw no direct evidence of this or heard of any limitations first–hand in the areas visited. The Forum pour le Developpement Durable Endogene (FODDE), in Kolda confirmed these views adding that returnees who had fled the rebellion are now trying to resolve land titles. Until 2016 Senegal has to clear all landmines under the Mine Ban Treaty but has yet to report on the scale of the contamination. In February 2010, Senegal estimated that suspected hazardous areas (SHAs – includes unexploded ordnance) in Casamance covered 20km2 and that a further survey was planned. There are still occasional reports of landmine injuries and no doubt there is still fear.

Source: Fall, A. (2010): Understanding the Casamance Conflict: A Background

Economically, cashew is becoming important in the area. The Casamance is held to be the poorest area in Senegal; the conflict discouraged economic development, encouraged emigration and Government support was withheld. The conflict had amongst others threatened significantly the food security of farmers as they were unable to produce their major food crops (rice, maize, millet, sorghum and sweet potatoes). Similarly, cash crops such as groundnuts, sesame and cowpeas were adversely affected. Since the cessation of hostilities, NGOs such as FODDE have supported farmers in re-establishing themselves in their farms and rehabilitating their cashew plantations. The cashew crop therefore provides one of the few sources of income for the rural population where much of the agriculture otherwise is little more than subsistence. With the return of a more peaceful environment, there has been a return to the land and Government support to the area is reportedly improving.

To the immediate north of The Gambia is **Sokone,** in **Fatick Region** where between 500 and 1000 tonnes per year of cashew are produced. Production here is stable. It was initiated in the 1980s by the Projet Anacardier Senegalo-Allemand (PASA) project. There is some local processing for roadside sales, particularly at the border crossing but these do not amount to significant quantities. The raw nuts are of good quality and mostly pass into The Gambia for export. There is little sign of expansion but apparently available land perhaps more easily accessible than in Casamance.

Finally, in **Thies** Region, a Dutch aid programme began planting mangoes and cashews in the 1990s in the Tivaoune Department[5]. Two villages in particular organised themselves to develop cashew planting and output from the region is now estimated at about 1,000 tonnes per year. There are scattered plantings among the villages and some report of newer plantings. The nurseries that were used to establish production in the area, based on selections brought up from Sokone, have closed, and new plantings use locally selected seed. The success of the two villages in cashew production is ascribed to the motivated population where the whole village participates in cashew cultivation, and notably the farm animals are kept by common agreement in the village, away from the cashew.

Projects such as FODDE and USAID Croissance Economique either have been or are active in the **Sedhiou**, **Kolda** and **Ziguinchor** areas. Land that is available for cashew planting is becoming scarce but there is clearly enthusiasm for planting where possible. This land scarcity has resulted to new plantings being extended to marginal lands where

[5] Also windbreaks where planted by the forest department with spacing of 50 m between the rows.

cashew trees strive admirably well. Production in these areas is likely to increase at least for the medium term as new plantings mature.

An in-dept survey is urgently needed to understand the impact of these initiatives and the current extent of planting. Our interviews suggest that cashew output in the region is likely to jump forward in the next two or three seasons as new plantings come into bearing.

As regards estimating the acreage under cashew, the scattered plantings and the use of cashew in intercropping farming systems means that pure stands of cashew are not so common. Therefore, exact data on acreage, tree density, yield per tree, etc. is difficult to be gained. Information about this presented in the following paragraphs and in the section on Gambia are mainly gained from a baseline survey undertaken by "The Gambia River Basin Cashew Value Chain Enhancement Project" (CEP).[6] However, more accurate data could be gained through undertaking a GPS-facilitated study.

The information available about cashew production in Casamance is partly contradictory. One problematic aspect is the size of farming areas. The present report is based on a study conducted by Jaeger and Gomez in which is stated that the production in all three Casamance regions is quite scattered and the farms are mostly small of the order of one to three hectares, tailored around an agricultural production system which is largely smallholder based. Few farmers, representing less than 1% of the farming population, have built up more extensive holdings though the maximum might be 30ha.

The *CEP baseline survey* (2010) produced different results concerning the cashew plantation size in the area. The mean plantation size of the representative sample of the Casamance regions was 10.08 hectares (see Table 2.2 below). In the area of Bignona the mean plantation size was much smaller (5.42 ha) than the one of Sedhiou (9.97 ha) and the one of Ziguinchor (13.50 ha). While the mean plantation size in Bignona was considerably smaller than in the other two zones, the mean number of trees per hectare was higher: 202 trees/ha in Bignona compared to 91 in Sedhoiou and 51.84 in Ziguinchor, which results in an average of 87.7 trees/ha for the group total.[7] Yet, it should be noted that the data was gained by asking farmers to quantify their plantation size and number of trees. Respondents might have had problems doing this estimation. As previous studies have shown the reliability of this data is questionable. The same is true for the figures gained through the study by Jaeger and Gomez. Consequently, it should be noted that reliable statements about plantation size and number of trees per hectare can only be made after GPS-supported measurement of the plantations and counting of trees on the respective plantation.

Reported land holdings take no account of the style of planting. Various systems of production are clear, varying from occasional trees scattered near the family home, to intercropping with only a few trees per hectare to monocrop planting with regularly spaced cashew trees occupying a defined area. Intercropping seems to be the principal system with the traditional staples of maize, millet, sorghum, groundnuts, cowpeas all grown in the fields where there are stands of cashew but an up-to-date survey is overdue.

Table 2.2: Plantation Size and Number of Trees by Zone

	Zone						Group Total	
	Bignona		Sedhiou		Ziguinchor			
	Count	Mean	Count	Mean	Count	Mean	Count	Mean
Plantation Area (Ha)	51	5.42	75	9.97	69	13.50	195	10.08
No. of cashew trees	51	1,098.83	75	912.51	69	699.91	195	884.47
No. trees/ha (calculated from mean)	--	202	--	91	--	51.84	--	87.7

Source: Adapted table from International Relief & Development (2010): 13.

[6] International Relief & Development (2010): 5.

[7] Ibid: 13.

Table 2.3: First Year of Harvest in Casamance

Year of first harvest	Senegal: Casamance							
	Zone						Group Total	
	Bignona		Sedhiou		Ziguinchor		Freq	%
	Freq	%	Freq	%	Freq	%		
1970 - 1974	1	2.0%	0	0	1	1.5%	2	1.0%
1975 - 1979	2	3.9%	2	2.7%	6	8.8%	10	5.2%
1980 - 1984	2	3.9%	3	4.0%	7	10.3%	12	6.2%
1985 - 1989	5	9.8%	1	1.3%	6	8.8%	12	6.2%
1990 - 1994	10	19.6%	5	6.7%	12	17.6%	27	13.9%
1995 - 1999	13	25.5%	20	26.7%	13	19.1%	46	23.7%
2000 - 2004	4	7.8%	32	42.7%	15	22.1%	51	26.3%
2005 - 2009	14	27.5%	12	16.0%	8	11.8%	34	17.5%
Total	51	100.0%	75	100.0%	68	100.0%	194	100.0%

Source: Adapted table from International Relief & Development (2010): 13.

In order to capture for how long farmers in Casamance have been cultivating cashew for, the CEP study asked for the first year of cashew harvest. The results shown in Table 2.3 above above tell us two things: Firstly, cashew cultivation has expanded steadily in Southern Senegal over the last 40 years, especially from 1990 onwards. This steady expansion can be seen as an indicator that cashew cultivation is more and more understood as a worthwhile farming activity. Secondly, that the majority of trees is less than 15 years old (including maximum five years to mature plus ten years since first harvest).[8]

There are several privately–owned nurseries[9] along the road that follows the Guinea Bissau border eastwards from Ziguinchor and these might grow a range of crop seedlings including cashew and mango , oil palm, citrus, tamarind and others. The association FODDE (see Chapter 2.3) established four nurseries with a maximum capacity of 6,000 seedlings each. There are other donor funded nurseries too and no clear indication of co-ordination on this aspect of the projects. All the nurseries supply seedlings grown from selected trees and also varieties referred to as "Costa Rican" or "Brazilian". The identity is not known. One of the nurseries visited is quite well organised, properly fenced and well maintained with a capacity of about 2,000 seedlings. This would be sufficient for 20 hectares of pure stand cashew, but the style of planting in the area (and in fact much of Senegal and Gambia) is generally extensive, with scattered cashew planted among the subsistence crops. The other nurseries seen were tiny and contribute little to the availability of seedlings. They seem to be informal and not managed as commercial enterprises. The locality and condition of the FODDE and other donor funded nurseries was not known. Traders in the area report substantial new planting, usually of seed, and also the development of grafting to improve yields.

Table 2.4: Planting methods in Casamance

Planting method	No	%
Direct sowing	142	72.80%
Both	31	15.90%
Transplant	22	11.30%
Group Total	195	100.00%

Source: Adapted table from International Relief & Development (2010): 14.

However, the CEP study showed that the use of seedlings is not very common. The huge majority (72.80%) of farmers practice direct sowing. Only 27.20% exclusively use seedlings or combine the practices of direct sowing and transplanting seedlings. Concerning the source of planting material, 7.7% of the respondents in the CEP survey stated they received planting material from farmer associations. 8.7% of the farmers interviewed said they received it from friends and relatives. The vast majority (83.6%) of the farmers stated they did not know the source of their planting material. Possibly, the farmers lacking this information were cashew farmers in second generation whose ancestors already planted the trees on their plantations.[10]

On the varieties of cashew trees planted there is no verified information. The CEP study did not succeed in learning the names of the specific varieties used. However, the very fact that some varieties are commonly referred to as "Costa Rican" and "Brazilian" in tree nurseries and that varieties from Costa Rica and Brazil have been promoted in Fatick and

[8] The actual share of respondents reporting that they firstly harvested since 2000 is 43.80% but considering trees planted by farmers who firstly harvested before 2000, the share of trees younger than 15 years can be estimated to be above 50%.

[9] Key informant interviews put the number of nurseries to around 20 within the three regions of Casamance

[10] International Relief & Development (2010): 14f.

Kaolack during the GTZ project "Projet Anacardier Sénégalo-Allemand" (PASA) in the 1980s[11] indicate that these two varieties are common in Senegal.

Another finding of the CEP study was that the majority of cashew farmers in Casamance have at least two varieties in their plantings: 63% of the farmers reported having two and 26.7% reported having at least three different varieties in their plantations. Only 9% said they have only one variety in their fields and 2% were not sure. However, the reliability of this information should be regarded as low due to the lack of knowledge on specific varieties among farmers [12]

Almost all (98%) cashew farmers from Casamance regularly clear debris from their plantations before trees flower. Farmers see the importance of this practice which averts bushfires and facilitates the collection of apples and nuts fallen off. With 61.38% pruning was the second most frequently reported practice followed by fire belting and detopping with 36% each. However, neither did the study capture timing and frequency nor which specific techniques are used.[13] This important information concerning plantation practices should be included if a further survey is undertaken.

> *"Finally, while beekeeping has significant potential for adding value to cashew (both as bees improve the uniformity of the nuts by cross pollination, and also as a source of income from sale of honey), the low number of farmers conducting beekeeping speaks to the cost requirements (hives, water points required in plantations, etc.) as well as the need for specialization and one's willingness and interest in working with bees."*[14]

Table 2.5: Plantation practices before flowering

Types of practices	No.	% of respondents
Cleaning of plantation	186	98.41
Pruning	116	61.38
Fire belting	68	35.98
Detopping	68	35.98
Bee Keeping	14	7.41
None	1	0.53
Total No. of Respondents	189	-

Source: Adapted table from International Relief & Development (2010): 16.

Use of chemical inputs, fertiliser or pesticide is negligible. Figures for Senegal in 2008 show levels of fertilizer consumption of 2.4kg/ha nationally, which place it among the lowest 20 countries in the World.[15] Interviews in the Casamance Region indicated that where such chemical inputs were purchased, the priority for application was the subsistence food crops of rice, maize, millet and groundnuts rather than the tree crops such as cashew and mango. The economy in this region has been substantially disrupted by the disturbances over the last 20 years and development has fallen far behind the rest of the country. For the population that remained in place throughout the disturbances, subsistence rather than commerce has been the priority. Farmers seldom if ever apply fertilizers on tree crops and basically agricultural production emphasis is still on subsistence crops. A part of the revenue from tree crops (mangoes, cashews, oil palms etc.) is frequently used to support the provision of farm-inputs to increase production and productivity of subsistence crops.

[11] Interview with Rüdiger Behrens on 15/7/2011.

[12] International Relief & Development (2010): 15.

[13] Ibid: 16.

[14] Ibid: 16.

[15] Source: FAOSTAT

The main production problems cashew farmers in Southern Senegal face are animal intrusion and, related to this problem, fencing. In both cases more than 60% of the farmers reported those as major production problems. Other severe problems are diseases, theft and fire. Interestingly, tree diseases seem to be much more wide spread in Casamance (38%) than in Gambia. Only 4.18% of the Gambian farmers asked, listed diseases as a major problem (compare Table 2.6). A look at the regions reveals that farmers reporting problems with diseases are concentrated in the Sedhiou zone. It would be interesting to know whether this is due to the specific micro climate, the tree varieties, or other factors present in Sedhiou.[16]

Table 2.6: Main Production Problems

Main production problems	No.	% of respondents
Animal intrusion	125	66.49
Fencing	118	62.77
Diseases	72	38.30
Theft	68	36.17
Fire	47	25.00
Pests	19	10.11
Trees don't produce	10	5.32
Total No. of Respondents	188	-

Source: Adapted table from International Relief & Development (2010): 17.

Table 2.7 on cashew harvesting practices below clearly shows that the vast majority of farmers follows the recommended practice of collecting nuts and apples from the ground after they matured and fell from the trees. Only 1.5% of the farmers reported plucking them off.

Table 2.7: Distribution of how cashew is harvested

How cashew is harvested	No	%
Don't harvest	3	1.50%
Collected from the ground	189	96.90%
Plucked from tree	3	1.50%
Total No. of Respondents	195	100.00%

Source: Adapted table from International Relief & Development (2010): 17.

On the question of who collects the nuts, the CEP survey highlights that collection is mainly done by family member. Only 26.20% of the farmers report engaging paid labourers.

Table 2.8: Who collects nuts

Who collects nuts	No	%
Family members	140	71.80%
Hired collectors	51	26.20%
Both	1	0.50%
Not Applicable	3	1.50%
Total No. of Respondents	195	100.00%

Source: Adapted table from International Relief & Development (2010): 18.

As the CEP study found, almost all the surveyed farmers dry their nuts after harvesting. 79% of them dry it outside and 13% inside. 82% of the respondents dry their nuts for two days or longer. Most of the nuts in Casamance and Gambia are dried on a sheet spread on the ground (43%) or on the bare ground (36%). Only 4% of farmers reported drying their nuts on a raised platform as recommended by cashew traders.[17]

Table 2.9: Cashew Nut Drying

How long cashew is dried	No	%
One day	25	12.80%
Two days	65	33.30%
Three days	57	29.20%
More than 3 days	37	19.00%
Not Applicable	11	5.60%
Total No. of Respondents	195	100.00%

Source: Adapted table from International Relief & Development (2010): 18.Cashew commercialisation

In Casamance and Sokone, following harvesting and drying in season that starts in April and ends in June, the raw cashew nuts are ready for sale. The first purchasing is usually carried out by agents working on a commission for larger collectors. There are several hundred agents operating. There is little pre-financing of the crop so the farmers are free to sell to any agent. But there are reports of traders getting together to limit grower prices.[18] Storage capacities in the villages are limited. However, the CEP study reports that only a minor percentage of 5% of the producers in Casamance and Gambia sell their nuts right after harvesting, all the others store it before selling. For storage 91% of the farmers from Casamance use nylon bags whereas only 2% use jute bags as recommended by international buyers, which may be due to the considerably higher prices of jute bags. On average, a majority of 69% of farmers store their

[16] International Relief & Development (2010): 17.

[17] Averages in this paragraph refer to averages of Casamance and Gambia. Single values were not available here; ibid: 18f.

[18] Fitzpatrick, J. (2011): Competitiveness of the African Cashew Sector – Annex: Profiles of African cashew countries.

nuts for less than 3 months. “Long term storage is unusual” in Southern Senegal as well as in The Gambia.[19]

Farmer knowledge of prices and pricing is held to be limited. Farmers receive their information from local buyers (agents) and word of mouth. The share of market information gained from Farmers associations is meagre. Farmer associations are not seen as a source of market information. Government extension services in disseminating cashew market information are totally absent. In sum, this results in a low reliability of information since there are hardly any safeguards against misinformation.[20]

Information about prices and quantities sold by farmers are hard to come by. However, the CEP study tried to investigate these by asking farmers to remember the quantity of nuts sold during the marketing season 2009 and the income gained from these sales. Due to price fluctuations that generally occur during the season they were not asked about particular prices they remember, but about the overall income from cashew. Since it is difficult to call to mind a whole season and to estimate overall sums sold and income gained, the data should be treated as proxies rather than solid figures. Moreover, it should be noted that only a single season was looked at. In order to systematically capture prices a long term survey is needed. Looking at the overall mean quantities sold in the three Casamance regions by Gender one sees that on average male farmers sold 1603.70 Kg of cashew nuts in the 2009 season whereas female farmers only sold 1218.75 Kg. This difference could be due to circumstance that female farming systems tend to be of a collective nature whereas male farmers are mainly individual producers.[21]

As the Table 2.10 below shows there are also considerable differences between the regions. The mean marketed quantity per farmer is highest in Bignona with 1749 Kg and lowest in Sedhiou with 1398 Kg. Based on the mean number of trees a farmer possesses a relative yield per tree was calculated. The mean marketed quantity of nuts per trees is 2.41 Kg in Ziguinchor, 1.6Kg in Bignona, and 1.5 Kg in Sedhiou.

Table 2.10: Mean Relative Yield per tree in Casamance by Zone

	Bignona	Sedhiou	Ziguinchor	Total
Marketed Quantity (kg)	1749.18	1398.05	1687.18	1586.87
No. Cashew Trees	1,098.83	912.51	699.91	884.47
Relative Yield (Marketed kg/tree)	1.6	1.5	2.41	1.8

Source: Adapted table from International Relief & Development (2010): 20.

[19] If not made explicitly indicated, information on storage refers to averages of both countries, Senegal and The Gambia; International Relief & Development (2010): 19.

[20] Ibid: 23.

[21] Ibid: 19f.

From the marketed quantities and the income gained from the sales during the cashew season an average kilo price throughout the season was calculated. As highlighted in the Table 2.11 below in the 2009 season huge price differentials existed between the zones. Thus, the kilo price in Ziguinchor was 37% higher and the price in Sedhiou even 86% higher than the one in Bignona. "During the 2009 season, in concert with the Ziguinchor Chamber of Commerce, some Senegalese producers decided to announce their price over the radio at CFA400/kg even though CFA400 (equivalent to D22.4) was significantly higher than the market rate. It appears from the data and anecdotal reports that many Bignona farmers were encouraged by the radio announcement to hold on to their stocks, waiting for the price to come closer to CFA400. However, the price never reached this point, and nearing the end of the cashew marketing season, cashew producers in Bignona were forced to sell their raw nuts at a much lower price than what had been offered earlier in the season."[22]

Table 2.11: Mean Price of Cashew per Kilo in 2009 Season

Zone	Mean Price (in CFA)
Bignona	190.95
Sedhiou	355.98
Ziguinchor	261.80
Group Total	280.91

Source: Adapted table from International Relief & Development (2010): 21.

The agents buying from the farmers are financed by the collectors based in the major centres. The delinquency rate among them is reportedly very high. The agents have a reputation for low reliability and the losses at this stage are reported to have a significant impact on the efficiency of the value chain although this has not been quantified. The standard agent commission is CFA 10 to 25 /kg (USD0.02 to 0.05/kg). It is a competitive business and the roads, particularly to the south of the Casamance River along the Guinea Bissau border, are in poor condition adding to the cost involved in evacuation.

Collectors will receive the cashew in, for example Kolda or Ziguinchor, and they will try to dry it further before rebagging. They will consolidate small quantities in a store until there is sufficient volume to send to the exporter. Collectors who are also exporters are rare. The collectors are usually local to an area so that they know the producing areas and the producers. There are some 53 large collectors in Casamance and together they form the *Association des Collecteurs d'anacarde de la Casamance*.

Exporters are mostly based in Banjul and therefore will be discussed under The Gambia (3.2). There are two Senegalese exporters.

The collectors will dispatch the cashew to Banjul from Casamance and Sokone. In Casamance much of the cashew passes through Ziguinchor (as does the cashew that arrives from Guinea Bissau). Here trucking is controlled by a syndicate of transporters[23] that sets prices and allocates freight. The syndicate has control over all the cashew that leaves the area. There is no doubt that prices are artificially high (we estimate rates at USD 0.2 per tonne km), but reported arrangements with official inspection posts, particularly coming into Banjul, restrict the flow of cargo not carried by the syndicate. The shipping line, Maersk, tried to work around this by placing shipping containers in Ziguinchor for stuffing and sealing but abandoned the project within a short time.

In the Sokone area of Fatick Region a similar arrangement of agents and collectors exists and the cashew is mostly sold on to Banjul-based exporters. Here, the roads are much better than in Casamance but the ferry crossing is a major obstacle to the movement of freight.

In Thies the arrangements are different. Until now, the region has not caught the attention of the Banjul-based exporters and the buying is entirely carried out by local processors. The production is quite centralised around a few villages and the processing centre at Thienaba is not far away. The marketing chain is therefore direct and short.

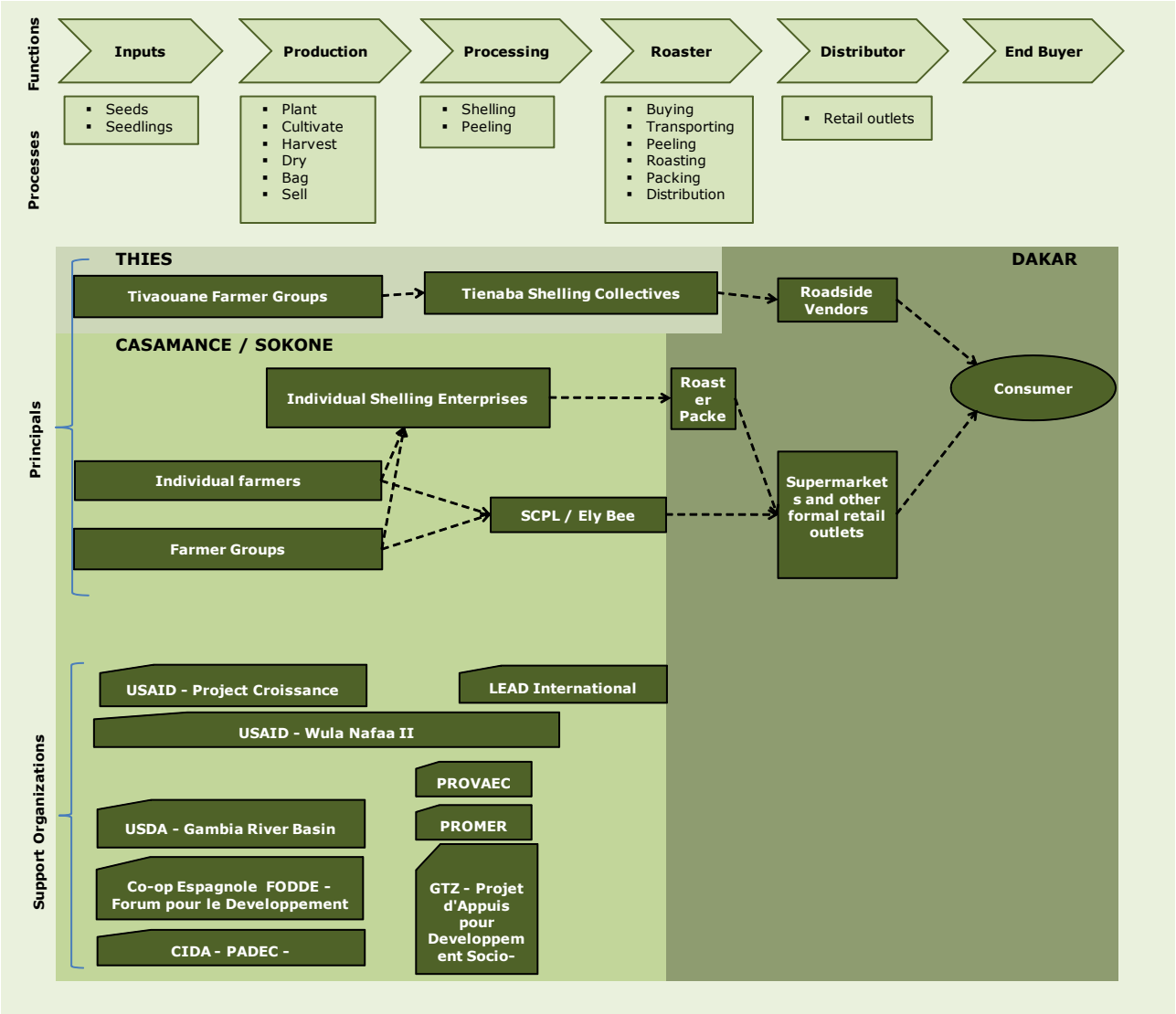
2.2 Cashew processing

Cashew processing takes place in all three of the production areas of Senegal, in Casamance, Fatick/Sokone and Thies, with varying degrees of success. The value chain is laid out in Figure 2.4 below. Artisanal processing, locally in villages with sticks to break the shells, is found all over the producing zones, but in total does not seem to add a significant capacity since the in-shell nut has a high value.

[22] International Relief & Development (2010): 21.

[23] *Regroupement des Chauffeurs & transporteurs de la Region Ziguinchor. Secteur Poids Lourdes*.

Figure 2.4: The cashew processing chain in Senegal



Source: Jaeger / Gomez' own research

The area with the least processing activity is the zone between the northern Gambian border and the town of **Sokone**. Between the border and Sokone at least three small factories have been established. One, a UNDP project built in 2007, at Darisilami Soce, serves four villages and groups about 50 users, all women, who pay[24] to utilise the facilities. The facility is communally owned, and Fatou Senghor, the President, showed us two cutting tables with simple hand-operated cutters. In this way they can process their own production and potentially supplement with further purchasing. Markets include street sales at the border and also bulk sales to roasters who arrive from Dakar to buy. There is plenty of cashew in the immediate area, and the processors are well located. They struggle however to fund nut purchasing and seem limited to shelling their own production. Since there are minimal overheads and the variable costs are covered by fees, we can assume that the Darisilami plant can continue although expansion may be difficult. Integrating with a Dakar based roaster would be one way to improve their financing.

Two other small processing facilities nearby (at Sirmang and Wassa Senghore) are not functioning. The technology at Wassa was basic: the traditional method of hitting the raw nut twice with a stick was used.

On the edge of Sokone itself, a private investor from Dakar with business interests in the area but no experience in cashew has outline plans for a new 200 tonne factory to replace a redundant operation currently in government hands that had been installed in 1986 with British financing but processed only 200 tonnes altogether in its three year operating life.

There is also small processing plant in Sokone with two manual cutters: in 2009 3 tonnes were processed, in 2010 four to five tonnes were processed. They are collaborating with the investor from Dakar noted above. The plant is

[24] CFA25/kg to use the cutters and driers; CFA10 per sachet to bag the kernels; CFA 5 to seal each sachet.

owned by the *Association de Transformatrices de Sokone* whose president, Mme Yande Sarr is also president of the regional *Federation de Transfomatrices d'Anacarde*. Previously, a Belgian NGO, SOS Faim, had granted 4 mn CFA to the association, which was used as loans to members to purchase raw nuts. This fund has now grown to 8 mn CFA. The new investor is said to be willing to fund further purchasing. It is not clear where this will lead. It can be assumed that if the investor progresses with his plan to acquire the larger, redundant plant he will then employ the members of the association. If those plans do not go ahead it is unlikely that he will retain an interest.

In the **Casamance** area, with a larger crop, there has been more effort at establishing a processing capability. The history of processing in the area is relatively short and seems to begin in 2001 with a USAID project implemented by the NGO EnterpriseWorks. The project co-operated with individual entrepreneurs to establish 16 privately-owned factories, of which four still operate. Various reasons are given for the failures, including lack of financing, inability to purchase raw material, inability to market. A subsequent initiative by Austrian government project, Projet de valorisation des produits de l'agriculture et de l'élevage en Casamance (ProVAEC), in 2008 added another 20 factories and created a trade association, Association des Transformateurs de Noix d'Anacarde (ATNA). Interest free loans were made available to set up shellers, drying ovens, boilers and also provide a small contribution to operating costs. Training was provided. In subsequent years a credit line provided loans well below the commercial bank rate for processors wishing to buy raw cashew nuts. Of the original members, between 9 and 14 were believed to be operational in 2010. Typical capacity of the factories is of the order of four to five tonnes of raw nuts per year, but it seems that generally the installations are run well below capacity. Finally, the project Projet de Promotion des Micro-Entreprises Rurales (PROMER) is supporting a further five entrepreneurs in the Kolda district with financing for processing.

ATNA continues to operate. The association appears to be well established and run with due respect to practices of good governance. The association is in contact with its members and has the potential to manage credit and other business services. While most of the members are currently either inactive or at least operating well below capacity, the association does provide a good conduit through which technical assistance can be applied for example by ProVAEC.

In all over 40 factories have been established in the Casamance area of which 40-50% are believed to be still active although almost all are running well below capacity. A number of problems were highlighted including financing difficulties both in terms of cash flow and in managing debt, purchasing problems of not being able to acquire volume, and marketing issues. The marketing is almost entirely aimed at domestic consumption where there is good demand, particularly in Dakar, but the kernel sales price is too low when there is competition for raw material from the RCN exporters. It seems that cashew processing can be profitable (Annex 2), but the more entrepreneurial factory owners all suggest that an industry can only be sustained with developing new products either with the kernels, for example roasting, salting and packing, or with the fruits in making jams and juices.

The largest of the extant factories lies 5 km outside Ziguinchor. Société de Commercialisation de Produits Locaux (SCPL) was founded under the EnterpriseWorks project in 2001 as a collective. In 2004 GIE Eli Bee in collaboration with the aid organisation Handicap International saw the potential of the development of an export trade based on online sales in France. By 2008 processed volumes had risen to 50 tonnes of RCN but 2009 was a difficult year and all reserves were run down. In 2010 the forecast is for 12 tonnes of processing. Meanwhile in 2009 SCPL has linked up with a North American not-for-profit organisation, Lead International, and together a joint venture is being set up recapitalising the business and extending the capacity. Warehousing will be improved so that other processors can also benefit and a food packaging plant, Delicaju, is already operating with the capacity to handle 3000 tonnes of dry goods per year. A business plan has been compiled and investment is sought. The enterprise is professionally managed and driven by an experienced team. Funding from investors was being sought during 2010 and if this can be secured the outlook should be good.

Finally, **Thies Region** seems to be the most successful area for processing cashew. Based on the cashew farms of the Tivaoune area a processing capability has grown up in nearby Thienaba and neighbouring villages. The cashew processing here seems to have developed almost independently from the early 1980s. The processor groups have received support from an NGO[25] but it appears to be occasional. For the most part they are buying in an area not visited by exporters and therefore do not have to compete for RCN. They also use a style of processing which is appropriate to the market that they serve – they are not trying to achieve European standards.

It seems that the Thienaba area processes some several hundred tonnes per year, although this needs verification. The kernels are sold alongside the approach roads to Dakar where traffic is often slow and every day up to 70 women leave the village to sell cashew kernels. The processing is organised around groups, and currently four villages participate with 267 members divided into 11 groups all coming under the umbrella group, Transformatrices de Cajou de Thienaba (TCT). A regular general subscription is allocated

[25] Green Senegal

weekly to a group who use it to fund RCN purchasing. A reserve is left behind and further contributions are made by those using the facilities for roasting or bagging. Fines are levied for late payments. The revenue from the trade has been put to use privately, where most now live in brick built houses, while the communal funds have constructed and equipped a medical centre and led to the formation of a mutual credit society.

The processing here is clearly profitable and it seems a successful enterprise. The TCT has a number of advantages over other processing projects:

- There are no other buyers visiting the Thies Region for cashew.
- The destination market is close and distribution costs, compared to exports, are low
- The processor set the sales price
- The processing is directed at a particular market and not trying to achieve inappropriate standards

The mass of subscriptions allows regular purchasing of cashew through the year without the need to carry stock.

In summary, the cashew processing industry in Senegal appears to be in severe difficulty in the south and thriving in the north. The northern co-operative at Thies seems to be processing several hundred tonnes per year though this requires verification. In the south, despite support from a number of projects (see 2.12 below) processing is quite limited. There are occasional examples of small success such as at Sokone or with SCPL but it is interesting to note that both have benefited from association with outside investors.

The reasons for the failure or, at least, vulnerable state of the rest of the industry seems to be a consequence of a volatile raw material cost but a fixed selling price and also of difficulties in marketing. In this regard, a new initiative of SCPL to co-operate closely with local processor and to buy kernels unpeeled is positive if they can raise the finance to move ahead with their plans. It would be interesting to benchmark the northern and southern processors against each other. Table 2.12 overleaf summarises processing in Senegal.

Table 2.12: Summary of cashew processing facilities currently operating in Senegal

		Thies	Sokone		Casamance					
Name		Transformatrices de Cajou de Tienaba	Darsilami Soce	Association de Transformatrices de Sokone	GIE APAD	Senghalene	Karoghen Esukom de Djibonker	GIE Beyecounda	GIE Ely Bee/ SCPL	<15 others
Brand		None	None	None	APAD	None	None	L'amande doree	Deli-Cajou or Handicap International	None
Type of enterprise		Co-operative	Co-operative	Co-operative	Co-operative	Private	Private	Co-operative	Private	Private
Started		1982	2007-2010	2007	2004	2002	2002	2006	2001	2002 Onwards
Capacity		n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.
	Theoretical	Not limited	20 t	20t	30t	20t	20t	20t	400t	300t total
	Operating 2010	possibly 1,000 t ???	Barely	5t	1.2t	3.5t	1t	2t	12t	<10 total
Number of employees/members		267	54	n.i.	9	15	Family	25	40	n.i.
	Male	0	0	0	1	0	n.i.	9	12	n.i.
	Female	267	54	n.i.	8	15	n.i.	16	28	n.i.
	Number Permanent	n.i.	n.i.	n.i.	n.i.	15	n.i.	n.i.	40	n.i.
	Number of Occasional	267	54	n.i.	n.i.	n.i.	n.i.	25	n.i.	n.i.
Technology		Stick and stone	Hand operated cutters	Hand operated cutters	Hand operated cutters	Hand operated cutters	Hand operated cutters	Hand operated cuttrs	n.i.	Various
Market		Dakar	Dakar and roadside sales	Dakar and roadside sales	Ziguinchor supreettes	Tourists at Cap Skiring	Toursits, Roadside, Dellicaju (Testa on)	Locally	Dakar, Banjul and France via Handicap International	Local
Market linkages		None evident	None	None	None	On the tour bus circuit	None	None evident	Handicap International	n.i.
Co-operation with producers/outgrowers		No linkage, mainly buy in Tivaoune but also Sokone	Buy locally, no linkage	Buy locally, no linkage	Buy locally, no linkage	Own produce and buy locally	Own produce and buy locally	None evident	None	n.i.
Supply strategy		Buy spot	Buy spot	Buy spot	Buy spot	Own produce	Own produce	Buy spot	Buy spot, plan to store	n.i.
Experience of co-operation with producers		None evident	None evident	None evident	None evident	Own produce	Own produce	None evident	None evident	n.i.
Role of intermediaries		Buy direct	Buy direct	Buy direct	Buy direct	Own produce and buy direct	Own produce and buy direct	Buy direct	Buy direct	n.i.
Logistics of transport and marketing		Local transport services	Local services	Local services	Unknown	Local services	Local services	Local services	Own plus local services	n.i.
Supported by		Mostly autonomous. Has had assistance from NGO Green Senegal	Built by UNDP	Novasem SOS FAIM Promer	COSPE	EnterpriseWorks	EnterpriseWorks	ProVAEC	EnterpriseWorks LEAD International	n.i.

Source: Jaeger / Gomez' own research

2.3 National and International Programmes Supporting cashew Value Chain

The Government of Senegal is not yet involved in the cashew sector. But the visit of a group from the Department Eaux et Foret in the Kerala Research Centre for training cashew methods in India in recent years could be interpreted as a sign of evolving interest. There do not appear to be extension services aimed at cashew farmers and there is no regulation of the trade. At one time, cashew came under the aegis of the *Direction Nationale des Eaux et Forêts,* but lately, as indicated by government officials, the sector may be moved under the responsibility of the *Direction d'Agriculture* within the ministry. It is also important to note that the absence of government intervention also means that the sector is fully liberalized and open.

There are signs of government interest in the sector with the establishment of a national committee within the Ministry of Commerce to investigate the commercialisation of cash crops including cashew. There are those in the trade who would welcome some government intervention since marketing in the last season was chaotic.

In view of the competitive nature of the purchasing and export of the raw nuts it seems unlikely that government intervention would result in improved practices. It is more likely to add a layer of cost. There are at least nine donor/NGO projects operating in the cashew sector (see 2.13 overleaf).

The **Forum pour le Developpement Durable Endogene (FODDE)** is a not-for-profit association established in Kolda in 2004. The goal of the association is to promote sustainable development through three objectives:

- Capacity building for organization and management
- Empowerment of the local population
- Develop linkages South-South and North-South

FODDE began to develop the cashew sector in 2008 and supported the cashew sector in Kolda and Sedhiou. Initial activities concentrated on social projects aiming at assisting communities affected by the rebellion. In 2009 FODDE installed four cashew nurseries though it is not clear how many continue to function. FODDE also provided training in selection and grafting. Plans for the future include assistance to processing in 2011. Currently finance is received from a number of partners led by Co-operation Espagnol and the association has no time limit.

Table 2.13: The donor projects supporting the cashew sector in Senegal

Project[26]	Agency/ Donor	Cashew Focus	Funds	Life time
FODDE – Forum pour le Developpement Durable Endogene	COOPERATION BELGE-AURICHIENNE-ESPAGNOLE ET HOLLANDAISE- UE	Nurseries. Training in selecting and grafting.	NGO - several funding sources	2008 -
Gambia River Basin Cashew Value Chain Enhancement Project (CEP)	USDA	Support to producers. Capacity strengthening	USD3mn	2008-2011
Lead International	Charitable and self - financing	Support to processor SPCL. Development of marketing of cashew products		Not limited
PADEC	CIDA	Training, including marketing. Facilitate credit. Productivity	CAD20mn	2010-2015
Projet Croissance Economique	USAID	Productivity and quality. Established nurseries. Husbandry.	$69mn	2005 - 2014
Programme d'Appui pour Développement socio-économique pour la Paix en Casamance (ProCas)	GTZ	Support to the continuation of cashew processing. Provide working capital		Began 2008 Phase III due to start in 2011 to 2015
PROMER II	IFAD/Min of Agric	Finance and support to processors	USD18.75mn	2006 - 2013
ProVAEC	50% EU 35% Austrian Government 15% Private	Interest free loans to establish processing factories. Credit line. Technical support. Support to ATNA	Euro0.7mn	2008-2011
Wula Nafaa II	USAID	Organise producers into groups. Training in quality issues and governance. Assist with credit by intermediation to negotiate terms etc. Work with processors	$12.6mn	2009 - 2014

Source: Jaeger / Gomez interviews and project datasheets

[26] Only the Gambia River Basin Cashew Value Chain Enhancement Project (CEP) is focused exclusively on cashew. The funds for all other project have a wider application than strictly cashew.

The Gambia River Basin Cashew Value Chain Enhancement Project (CEP) is a three year effort (September 2008 – December 2011) initiative funded by the US Department of Agriculture (USDA) and implemented by International Relief and Development (IRD) The Gambia. The project seeks to improve the livelihoods of rural farmers through the strengthening of the cashew value chain. CEP interventions initially targeted two regions in The Gambia (North Bank Region (Lower Nuimis only) and Western Region (entire region)) and three zones in the Casamance region of Southern Senegal (Bignona (Kalunai and Bulluf), Sedhiou (Djibabouya and Djireh), and Ziguinchor (Niagis and Niassia)). Original plans to operate in Guinea Bissau as well were held back when civil unrest arose there. The project focuses on three key activities:

- Strengthening of cashew producer organizations through entrepreneurship and organizational training and support;
- Introduction of best production and post harvest handling practices to increase cashew nut yields and improve nut quality;
- Supporting activities that add value to the cashew value chain, including processing of cashew nut, cashew apple and other related value added industries.

LEAD International is a US Christian faith-based non-profit organization that empowers the poor to alleviate poverty through entrepreneurship. LEAD invests in long-term training, partnership, mentorship, sustainable business development and capitalization. LEAD started its involvement with the cashew sector in 2001 in Guinée. Focus shifted in 2005 to Guinea Bissau and by 2006 had established a cashew training school for 400 students per year. Government instability in 2007 caused it to move operations to Ziguinchor where it has invested in a commercial packing centre to give rural processors access to high quality packing. In Ziguinchor LEAD has partnered the local entrepreneur and processor SCPL to develop cashew processing packing and sales. An arrangement with French NGO Handicap International now allows some export sales.

PADEC - the goal is to develop and enhance the agricultural and agri-food potential of Casamance through small-scale producers via support for promising supply chains. There are two components: 1) strengthening of agricultural supply chains (including cashew, honey, mango, banana and forest fruits) and 2) local capacity-building support for improved services and supervision of operators, supplemented by a management component. Project interventions are throughout Casamance in the regions of Kolda, Sedhiou and Ziguinchor. In cashew, the principal interventions have been on yields (teaching grafting techniques) facilitating credit for processors and on training for processors particularly in the area of commercialisation.

Projet Croissance Economique is an initiative of USAID to support the Accelerated Growth Strategy of the Government of Senegal. The project aims to boost investment in agriculture and increase significantly the contribution of agriculture to the national economy. A central element is to contribute to capacity building in agricultural value chains to replace specific competitive agricultural imports. The range of initiatives include improved cultivation techniques and post-harvest management, the introduction of modern management supply chain and logistics, the increase storage capacity and processing, the innovation in lending and capital raising, training and higher education, improving conditions and exchange capabilities, and support reforms targeted policies and regulations.

The project works on a range of crops including staples (e.g. millet, rice, maize), cash crops (e.g. cotton, cashew, sesame), livestock (e.g. cattle, milk), and textiles. There are five components: 1. Development of value chains, 2. Capacity building, 3. Improving access to credit, 4. Supporting advocacy, 5. Supporting value chains

On cashew the initiatives are focused on Kolda and Sokone and include:

1. Promotion of productivity – nurseries (five near Kolda two in Ziguinchor and 2 in Sokone, all privately owned) and training of personnel for grafting as a service to the nursery owners
2. Agronomy and best practice
3. Capacity for quality – involving training of stakeholders throughout the value chain and a centre for drying and grading is proposed but has yet to be approved.

In 2011 there may be a move to add in support for processors.

During the project, interesting experiences were made with interactive radio shows on market information and technical know-how: During the 30 minutes show, which was broadcasted weekly during the cashew harvest season listeners had the possibility to call and get their technical questions answered. Furthermore, market information was distributed and interviews conducted with farmers in their fields were rebroadcasted.

> *"Hearing the names of a large number of people and places mentioned during the broadcasts had a catalytic effect on people in the regions who realized they belonged to a large collection of value chain actors they never knew existed. This effect was communicated live on the radio program which encouraged people to group themselves into associations as the best way to develop contacts and to collaborate not only among producers/gatherers, but also to increase vertical cooperation among different level of actors in the value chain. The experiences confirmed the importance of using*

informational and participatory communication tools."[27]

Programme d'Appui au Développement socio-économique pour la Paix en Casamance (ProCas) – is a GIZ supported project which aims at strengthening the local cashew processing industry. The project provides working funds to processors, such as SCPL, which in turn pass the funds to smaller units in order to help them to purchase raw material. The project supports the employment of handicapped people and out of the 10 enterprises supported by the project seven employ handicapped person.The project began in 2008 and a third phase is due to begin in 2011, but it is not clear if cashew will be featured.

The **Projet de Promotion des Micro-Entreprises Rurales (PROMER II)** is financed by the International Fund for Agricultural Development (IFAD) and the Ministry of Agriculture in Senegal. The project is in its second phase and covers the regions of Fatick, Kaolack, Kolda and Tambacounda as well as Diourbel, Louga, Matam and Thiès. The target group are women, unemployed youth and the landless rural poor. The project's overall objective is to diversify income sources for rural people. Specific objectives are i) the creation of employment opportunities through development of micro-enterprises ii) promotion of value chains iii) improving the political, legal and institutional frame conditions for economic activities.Cashew is one of eight value chains supported by the project; PROMER is assisting five cashew processing entrepreneurs in Kolda through credit and technical and management training.

ProVAEC – provides support to the milk, mango and cashew value chains in Ziguinchor, Sedhiou and Kolda. With respect to the cashew value chain, the project promotes only cashew processors who are organized in associations. ProVAEC supplies technical and management training, and offers interest free loans for investment (equipment such as shellers, drying ovens, boilers and consumables) and subsidized loans for working capital (for buying raw nuts). Credit for purchasing raw material is offered at a rate of 10%, compared to 18% from the retail banks. Maximum credits are CFA 1mn for associations and CFA 500,000 for individuals. The project is due to finish at the end of 2011.

Wula Nafaa II succeeds the first Wula Nafaa programme which ended in 2008. Wula Nafaa II started in 2009 and will end in 2014. The program's overall objective is poverty alleviation and sustainable local development. Its support strategies focus on strengthening income of rural producers and local communities, as well as on promotion of integrated, decentralized, participatory resource management. Area of intervention are Tambacounda, Kédougou, Kolda et Ziguinchor, accompanied by a new ecological region covering the coastal areas of the Casamance and Sine-Saloum delta.

The Wula Nafaa II project pursues five major results: 1. Increased capacity of local institutions, 2. Increased access to financial resources, 3. Improved basic skills of the populations, 4. More effective policies and regulations related to decentralization and 5. Improved management of fisheries and maritime resources

The project is also supporting the cashew value chain through strengthening and training producer organizations and is presently assisting 68 producer groups. Furthermore, Walufa Nafaa II promotes private cashew nurseries and offers training in basic business management (e.g. pricing, marketing, etc.) for the cashew producer. Finally, the project links farmers to financial organizatione (such as Credit Mutuelle, UIMECEC, Credit Agricole etc.) and supports subsidized credits and credit guarantee schemes for cashew producers. The project plans to support as well cashew exporters.

Experience of the former GTZ Project PASA

Even though the Senegalese Government is presently not involved in the cashew sector the aforementioned visit of a delegation from the Department Eaux et Foret in the Kerala Research Centre for training cashew methods in India in recent years could be a sign of resurgent interest. In the 1970s there was a strong interest of the Senegalese government in the Cashew sector. The GTZ project "Projet Anacardier Sénégalo-Allemand, PASA" was initiated following the demand of the Sengalese government and its interest in the economic potential of cashew nuts. The initial target of this project was the planting of cashew in the regions Fatick and Kaolack, both as a source of revenue in addition to ground nuts and as a measure against desertification. In 1977 a feasibility study of a cashew program in Senegal was conducted.[28] Two years later the PASA project started with a contribution of 20 million Franc CFA from the Senegalese Government[29]. The PASA project worked with the following research institutions: "Institute Sénégalais de Recherches Agricoles (ISRA)" in Kaolack and the "Direction de la Recherche sur les Productions Forestiéres (DRPF)" in Dakar.[30]
The PASA project had to give up its initial idea of establishing commercially and private owned tree nurseries because other organizations distributed plant matters for a subsidized price or even for free. Farmers preferred anyway

[27] USAID (2009): Senegal - Mid-Term Evaluation of Task Order No. 1, Support for Accelerated Growth and Increased Competitiveness IQC: 19f.

[28] GTZ (1977): Etude de Factibilité du Programme Anarcardier au Senegal. Eschborn: GTZ.

[29] Interview with Rüdiger Behrens on 15/7/2011.

[30] Barkey, H. (1992): Anbau von Cashewnußbäumen. Senegal. Arbeitsschlußbericht über die Durchführung des Vorhabens. Eschborn: GTZ: 20.

direct seeding, because material costs for direct seeding of one hectare was 320 Franc CFA (in 1990), which was only one tenth compared to 3.000 Franc CFA for 100 seedlings produced in a tree nursery.[31]

Furthermore, farmers had little confidence in the officials from the secretariat for water and forest[32], which was the counterpart organization of the PASA project. The Secretariat for Water and Forest (Secretariat d'Etat aux Eaux et Forêts) of the Ministry for Rural Development (Ministère du Développment Rural et Hydraulique) saw its main task in charging farmers for poaching or illegally felling trees as well as hassling truck drivers transporting wood and charcoal to the cities.

PASA predominantly dealt with small scale farmers. Fences were built around cashew cultivation areas bigger than 10 hectares in the first phase and bigger than 4 hectares in the second phase. The main beneficiaries of the PASA project were elder men who had been living in the same villages for many years and had come by huge acreages of land. Unfortunately the majority of those men could not perform the numerous tasks necessary in order to keep a good plantation.

The project supported the establishment of barbed wire fence.[33] However, since barbed wire fences were relatively expensive the project finally stopped them. A good alternative tested in the course of the project were vegetal fences. As Behrens highlighted, in India different plant species are recommended as a cheap and efficient alternative to protect cashew plantations.[34] These are used to produce protection baskets, called gabions. The best but also most expensive protection was provided by gabions of leaf-veins from the Ron palm tree. Other variants of gabions from bamboo or oil palm branches were cheaper and equally efficient for smaller acreages of less than 50 trees. These gabions prevented damages on trees and nuts caused by cattle which were a severe problem in PASA.[35]

Within the scope of PASA animal husbandry had become enemy number one of planting. If it had been possible to include animal husbandry as target of a project-accompanying measure, the project would have been more successful.[36]

[31] Barkey, H. (1992): 16f.

[32] Ibid: 39.

[33] Johnson, B.R. (1991): Etude pour une meilleure adaption du système de vulgarisation du PASA. Eschborn: GTZ: 3.

[34] Behrens, Rüdiger (1996): Cashew as an agroforestry crop: prospects and potentials. Weikersheim: Margraf: 62

[35] Barkey, H. (1992): 37.

[36] Ibid: 37.

Table 2.14: Protection of young cashew trees with local material

Method	Comments
Individual protection	
Gabions made from branches, 70-90 cm high, 40-45 cm diameter	Too dense, no air circulation, seedlings suffering, termites
Gabions made from palm leaves 120-135 cm high, 60-65 cm diameter	Good if woven with wide spaces, resist 3 years, best plant development
Thorny branches around the seedling fixed like a tent	Cheapest method, good prot.
Thorny branches around the seedling fixed on supporting sticks	Better than above, because fixed in the soil
Circle planted with 10-15 *Jatropha curcas* L.	Not very efficient (60%)
Circle planted with 10-15 *Euphorbia balsamifera* Ait.	90% cashew survival
Life hedges around the field, immediate protection	
Euphorbia balsamifera cuttings planted in one row , 15 cm between plants, with support	98% recovery, 80-120 cm high, 70-125 cm deep
Euphorbia balsamifera cuttings, one row, *Agave sisalana* one row	Combination improves protection
Jatropha curcas one row	99% recovery on light soils, good protection after 1 year
Jatropha curcas one row, , *Agave sisalana* one row	Combination improves protection
Life hedges around the field, protection after 2-3 years	
Agave sisalana one row	95% recovery, 35-70 cm high, 30-85 cm deep
Agave sisalana one row, *Parkinsonia aculeata* L. one row	Combination improves protection
Parkinsonia aculeata in one row	88% survival, 40-100 cm high, 60-120 cm deep
Ziziphus mauritiana Lam. in one row	preferred by farmers, low recovery (42%) 20 cm high

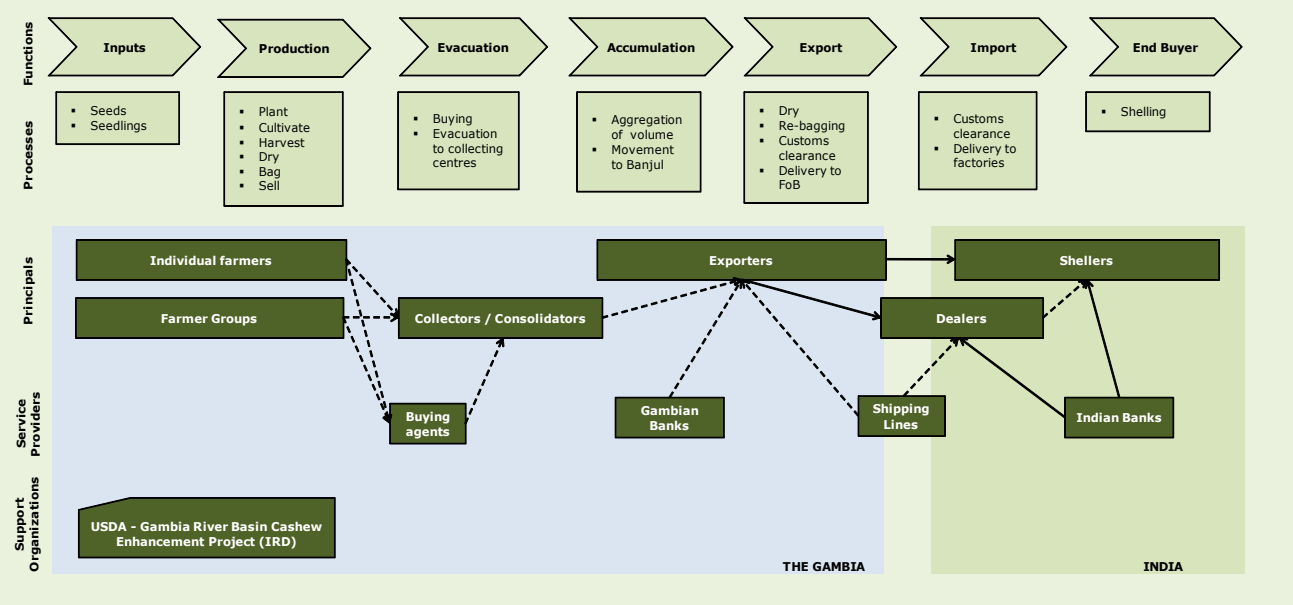
* The recovery and growth rates were taken 9 month after plantation in the middle of the dry season.

Source: Behrens (1996): 63

3 Analysis of the cashew value chain in The Gambia

The cashew value chain in The Gambia (Figure 3.1) is similar in structure to the one in Senegal and as already said the two combine downstream with the output of both being bought by Banjul-based exporters shipping it to India. The chain is simple and direct, with the harvest passing from the farmers to buying agents working for collectors who in turn supply the exporters. With the exporters based close by there may be more direct linkage between the farmers and exporters but this is not the usual manner. Note that there is only one donor project active in the cashew sector in The Gambia.

Figure 3.1: The cashew export value chain in The Gambia



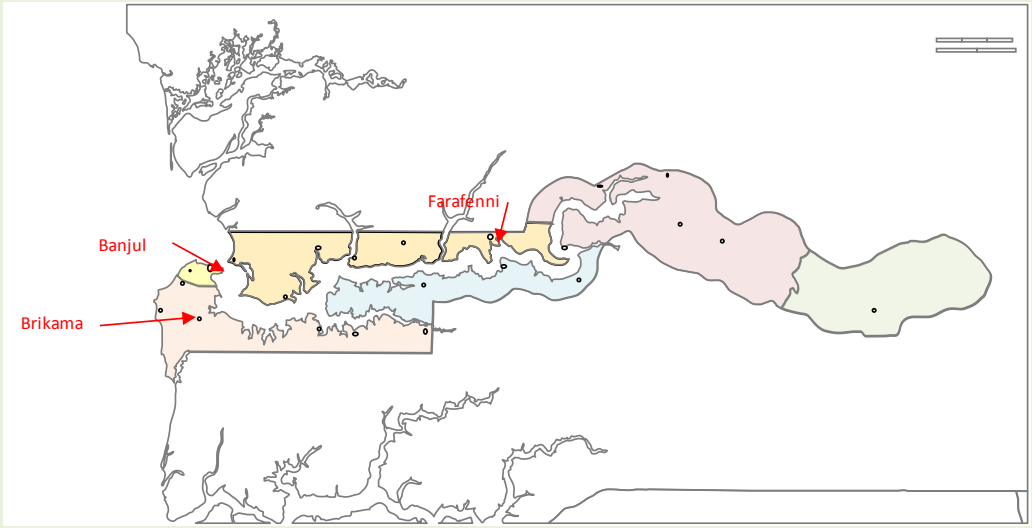
Source: Jaeger / Gomez' own research

3.1 Cashew Production

In the 1980s the Gambian Ministries of Agriculture and Forests introduced the cashew tree to the country. It was primarily meant as a means of reforestation and soil protection but also as a potential source of income for farmers. As time went by, farmers from The Gambia travelling to Casamance and Guinea Bissau or reversely farmers from Casamance and Guinea Bissau visiting The Gambia brought knowledge on cashew production and commercialization to the country. After some years the production of cashew as commerce intensified. Production rose to approximately 3,000 MT in 2005[37] and then to around 9,000 MT in 2010. Cashew producing areas in The Gambia (Figure 3.2) are found on both sides of the river. On the Southern Side the production of cashew is concentrated around Brikama, 30km from Banjul, but is said to be extending inland, while on the North Bank the cashew cultivation extends a considerable distance up stream.

[37] International Relief & Development (2010): 3f.

Figure 3.2: Areas relevant for cashew production and Export in The Gambia



Source: Jaeger / Gomez' own research

Figure 3.3: Cashew producing areas in The Gambia

Source: Google Maps

Table 3.1: Principal Agricultural Products of The Gambia

	2004		2009	
	Area (Ha)	Production (Tonnes)	Area (Ha)	Production (Tonnes)
Millet	123148	132494	144090	144868
Groundnuts	116627	135697	148331	121950
Rice	16000	32600	73000	79000
Maize	24200	28209	47000	54625
Sorghum	26055	28999	29250	31882
Cassava	2663	9009	2263	7370
Sesame	7730	2204	7877	2781
Pulses	12593	4320	7906	2665
Cashew	No record	No record	No record	No record

Source: FAOSTAT

The soil resources of the Gambia are quite restricted. The low lying lands near to the River Gambia and its tributaries are heavy, leached and frequently poorly drained. They are suitable only for rice cultivation. Soils on the higher ground are sandy with a low capacity to hold water and a low fertility. Cashew, however, is capable of yield on lands that are generally considered marginal for agriculture. The tree is tolerant of poor soils and prolonged periods of low rainfall.[38] The river is tidal along much of its length and in consequence there is saline intrusion far upstream. Land irrigation is limited to some pumped areas higher up the river. There are no economic possibilities for using the groundwater aquifers for irrigation, and so the agriculture of The Gambia is restricted to rain-fed production dependent on a strictly seasonal pattern of rain-fall (Annex 4) with a six month dry season. The agriculture is largely based on subsistence crops (compare Table 3.1 above) with few opportunities such as fruit trees, vegetables or sesame for income generation.

Note that cashew is not yet recorded as cultivated in The Gambia and indeed most of the cashew in The Gambia will be less than 10 years old. Almost half of the trees of farmers surveyed in the CEP study matured after 2005 (compare Table 3.2 below). And 75% of the trees were found to be no older than 16 years. Furthermore, a good basic seed variety is present in The Gambia with a high quality, large nut (low nut count per Kg).[39]

Table 3.2: First Year of Harvest by Zone

	Zone				Group Total	
	North Bank Region		Western Region			
	Freq	%	Freq	%	Freq	%
1970 - 1974	0	0	1	1.0%	1	0.5%
1975 - 1979	0	0	0	0	0	0
1980 - 1984	2	2.0%	5	5.1%	7	3.6%
1985 - 1989	1	1.0%	3	3.0%	4	2.0%
1990 - 1994	3	3.1%	7	7.1%	10	5.1%
1995 - 1999	8	8.2%	19	19.2%	27	13.7%
2000 - 2004	22	22.4%	38	38.4%	60	30.5%
2005 - 2009	62	63.3%	26	26.3%	88	44.7%
Total	98	100.0%	99	100.0%	197	100.0%

Source: Adapted table from International Relief & Development (2010): 13.

[38] Higher yields will of course be achieved where soil fertility is higher and more water is available.

[39] International Relief & Development (2010): 4.

With an annual production of about 9,000 tonnes of cashew and an assumed yield of 450 kg per ha (assuming a pure stand of cashew trees at average planting distance) we estimate that there are the equivalent of 20,000 ha of cashew in The Gambia. In fact, the area is considerably more extensive since much production is derived from orchards with uneven spacing and inter-cropping and indeed yields may well be below this figure. Typically maize, millet and groundnuts are grown with the cashew while other village lands will be used for rice.

This intercrop style of planting not only allows the farmer to continue to produce food crops and therefore does not negatively impact the family food security, but it also allows a more gradual build up of equity without debt. The crop budget (Table 3.3) shows a theoretical cashew hectare planted with a single crop. If the labour is fully costed, the project does not break even until year 7 or 8 unless higher yields can be achieved. Costing in the labour is unduly pessimistic in view of the use of family labour, but the point is clear that to plant a monocrop either takes substantial (in rural terms) capital investment or debt which at commercial rates is impossible. The alternative of occasional planting in the grain fields allows a gradual build up of the cashew asset.

Groundnuts have been an important product of Gambian agriculture for most of the 20th century. The soils are light and easily harvested, there is usually sufficient rainfall, and as a legume, the crop has a relatively low nutrient requirement. Few alternative sources of revenue for the farmers are available and groundnut oil and cake are the predominant agricultural exports of the Gambia.

Table 3.3: Crop budget for cashew production (plantation without intercrop) The Gambia 2010 in USD

Item/Activity	Q'TY/MANDAYS	UNIT COST (USD)	YR. 1	YR. 2	YR. 3	YR. 4-30
			COST/Ha	COST/Ha	COST/Ha	COST/Ha
A. LABOUR INPUT						
1. Land Preparation						
- Slashing and Burning	17	1,79	30,36	0,00	0,00	0,00
- Ploughing	0	1,79	0,00	0,00	0,00	0,00
- Harrowing	0	1,79	0,00	0,00	0,00	0,00
2. Lining and Pegging	2	1,79	3,57	0,00	0,00	0,00
3. Holing and Filling(With compost/black soil)	2	1,79	3,57	0,00	0,00	0,00
4. Transplanting	1	1,79	1,79	0,00	0,00	0,00
5. Fertilizer Application	0	1,79	0,00	0,00	0,00	0,00
6. Insecticide Application	0	1,79	0,00	0,00	0,00	0,00
7. Mulching	0	1,79	0,00	0,00	0,00	0,00
8. Replanting	1	1,79	1,79	0,00	0,00	0,00
9. Prunning	4	1,79	0,00	7,14	7,14	7,14
10. Weeding						
- 1st Weeding	4	1,79	7,14	7,14	7,14	7,14
- 2nd Weeding	4	1,79	7,14	7,14	7,14	7,14
- 3rd Weeding	0	1,79	0,00	0,00	0,00	0,00
- 4th Weeding	0	1,79	0,00	0,00	0,00	0,00
11. Harvesting + Watchman	24	1,79	0,00	0,00	0,00	42,86
Sub-total (A)			**55,36**	**21,43**	**21,43**	**64,29**
B. MATERIAL INPUTS						
1. Seedlings (including 10% for replacement)	180	1,79	321,43	0,00	0,00	0,00
2. Fertilizer						
- NPK (50 kg)	0	0,00	0,00	0,00	0,00	0,00
- SOA (50 kg)	0	0,00	0,00	0,00	0,00	0,00
3. Pesticide/Insecticide (Lt.)	2	0,00	0,00	0,00	0,00	0,00
4. Farm Tools						
- Cutlass	0	0,16	0,00	0,00	0,00	0,00
- Hoe	0	0,11	0,00	0,00	0,00	0,00
- Twine	0	0,04	0,00	0,00	0,00	0,00
- Eearth Chisel	0	0,18	0,00	0,00	0,00	0,00
Sub-total (B)			**321,43**	**0,00**	**0,00**	**0,00**
C. LAND RENT (per ha)	1	0,00	0,00	0,00	0,00	0,00
Sub-Total (C)			**0,00**	**0,00**	**0,00**	**0,00**
D. Total (A+B+C)			**376,79**	**21,43**	**21,43**	**64,29**
E. Contigency (10% of D)			**37,68**	**2,14**	**2,14**	**6,43**
F. Total (D+E)			**414,46**	**23,57**	**23,57**	**70,71**
G. Interest on Capital (25% of F)			**0,00**	**0,00**	**0,00**	**0,00**
GRAND TOTAL, COST OF PRODUCTION (F+G)			**414,46**	**23,57**	**23,57**	**70,71**
REVENUE ESTIMATES						
	Output(kg)	**Price (GMD)**	**Total Revenue**			
Year 1-3	0	0,46	0,00			
Year 4-7	300	0,46	139,29			
Year 8-30	450	0,46	208,93			
ANALYSIS	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 4-7**	**Yr. 8-30**	
Cost	414,46	23,57	23,57	70,71	70,71	
Revenue	0,00	0,00	0	139,29	208,93	
Net	-414,46	-23,57	-23,57	68,57	138,21	

Source: International Relief & Development (2010)

According to the CEP survey, the majority of cashew farmers are individual land owners and the average holding in the survey was 3.67 ha with a difference of one hectare between Western Region and North Bank Region (Table 3.4). Whereas plantation sizes in Western Region are on average one hectare smaller, the number of trees per hectare is much higher: with 184 trees/ha it is almost triple the quantity of North Bank Region (66). As in Senegal, the cashew cultivation is male dominated. Women farm cashew either through associations, since there are traditional restrictions on land tenure for women, or by participating in the harvest and preparing cashew for sale.

Table 3.4: Plantation Size and Number of Trees by Zone

	Zone				Group Total	
	North Bank Region		Western Region			
	Count	Mean	Count	Mean	Count	Mean
Plantation Area (Ha)	98	4.21	99	3.11	197	3.67
No. of cashew trees	98	279.66	99	574.71	197	423.32
No. trees/ha (calculated from mean)	--	66	--	184	--	115.35

Source: Adapted table from International Relief & Development (2010): 13.

Table 3.5: Planting method in The Gambia

Planting method	No	%
Direct sowing	146	74.10%
Transplant	29	14.70%
Both	22	11.20%
Group Total	197	100.00%

Source: Adapted table from International Relief & Development (2010): 14.

Concerning planting methods the picture in Gambia looks similar to the one in Senegal: farmers mainly practice direct sowing. As shown in Table 3.5 above only 14.7% of the farmers surveyed in the CEP study use transplants and 11.2% combine the two practices. This may be due to the substantially higher prices of seedlings compared to the quantity of seeds necessary to grow a similar number of trees. The main source of planting materials for Gambian producers are friends and relatives followed by further use of own seeds. Farmer Associations, Government Agencies, and NGOs do hardly play any role in providing farmers with planting material (compare Table 3.6). This may reflect the low commitment of the Gambian Government to the cashew sector and the circumstance that there is only one project active in the sector. Beyond that, there are only three growers' associations active in The Gambia: two are located around Brikama and one on the North Bank. Here, the CEP project is assisting in the promotion of grower organisations.

Table 3.6: Sources of Planting Materials

Source of planting materials	No	%
Friends/relatives	135	68.50%
Own seed	33	16.80%
Market	7	3.60%
Farmer Association	1	0.50%
Government Agency	1	0.50%
NGO	1	0.50%
Don't Know	19	9.60%
Group Total	197	100.00%

Source: Adapted table from International Relief & Development (2010): 15.

Before cashewapples and –nuts reach maturity, a number of plantation practices is applied. Almost all CEP surveyed farmers clean their plantations and nearly 50% reported doing fire belting and pruning (seeTable 3.7). In contrast to Senegal almost none of the farmers practices detopping. This may be explained by the young tree population in the Gambia that makes detopping unnecessary since it is usually applied on older trees to support the regeneration of their branches.[40] The use of chemical inputs for cashew is very limited. The fertilizer is considered too expensive and as in Senegal will be used more for the subsistence crops than for the tree crops. The crop appears to be largely free of disease, and fungal diseases, which are more of a constraint in other cashew regions of West Africa, are not recognized as a major problem.

[40] International Relief & Development (2010): 16.

Table 3.7: Distribution of plantation practices before flowering

Practices	No	%
Cleaning of plantation	174	94.05
Fire belting	90	48.65
Pruning	87	47.03
Bee Keeping	4	2.16
Detopping	1	0.54
None	7	3.78
Total No. of Respondents	185	---

Source: Adapted table from International Relief & Development (2010): 16.

In their survey Jaeger and Gomez found that animal intrusion and theft are the two problems most frequently reported. The animal intrusion can, according to the interviewees, result in substantial losses with reportedly more nuts collected from the dung than harvested from the trees. In consequence farmers reported on several occasions the need to spend every day in the farm as the crop matures in order to keep the animals away and to guard against pilferage. Although the continued presence may encourage regular harvesting the threat of theft may also encourage early picking with a consequent negative impact on outturn. Alternatively, farmers use fencing, but again this expense is beyond the capability of most. As Table 3.8 below shows, the finding that animal intrusion, the associated fencing and theft are main production problems is confirmed by the CEP study. Moreover, fire was reported as a main problem by 22% of the respondents. Even though many of them do fire belting this problem remains.

Table 3.8: Main Production Problems

Main production problems	No	% of respondents
Animal intrusion	155	80.73
Fencing	136	70.83
Theft	86	44.79
Fire	42	21.88
Pests	15	7.81
Diseases	8	4.17
Trees don't produce	7	3.65
Total No. of Respondents	192	---

Source: Adapted table from International Relief & Development (2010): 17.

Cashews are usually harvested by collecting fallen fruit from the ground so that full maturity is ensured. Most of the famers indicated in the CEP study that they follow this best practice. However, the share of almost 80% is significantly smaller compared to the 97% of Senegalese farmers. The CEP study ascribes this to radio programs and face to face trainings on how to improve nut quality that were undertaken in Senegal but not in Gambia.

Table 3.9: How cashew is harvested

How cashew is harvested	No	%
Collected from the ground	157	79.70%
Don't harvest	23	11.70%
Plucked from tree	17	8.60%
Total No. of Respondents	197	100.00%

Source: Adapted table from International Relief & Development (2010): 17.

Harvesting is a comparatively easy work, providing the ground has been kept fairly free of weeds, than groundnuts. This work is generally done by family members. Paid labourers are hired only by a minor percentage of farmers. Importantly, the cashew harvest arrives at a time when there is little other work to be done in the fields. Further stored foods are running low at this time of year and the country is entering the hungry season before the first maize crops become available. The revenue from cashew can therefore be very important in providing the means of buying food and the implications for food security should not be under-estimated.

Table 3.10: Who Collects nuts

Who collects nuts	No	%
Family members	153	77.70%
Hired collectors	11	5.60%
Both	4	2.00%
Not Applicable	29	14.70%
Total No. of Respondents	197	100.00%

Source: Adapted table from International Relief & Development (2010): 18.

After the cashew harvest, nuts are dried by the majority of the farmers. More than 80% of the participants in the CEP study reported drying their nuts, most of them for two days or longer.

Table 3.11: Cashew Nut Drying Times

How long cashew is dried	No	%
More than 3 days	45	22.80%
Three days	58	29.40%
Two days	46	23.40%
One day	13	6.60%
Not Applicable	35	17.80%
Total No. of Respondents	197	100.00%

Source: Adapted table from International Relief & Development (2010): 18.

3.2 Cashew Commercialisation

The cashew marketing chain in The Gambia is structurally similar to the chain in Senegal. The cashew is bought by agents who operate on behalf of larger collectors who in turn deliver the cashew to the Banjul based exporters. There

are variations in this structure as some exporters may purchase more directly. Most purchasing is done to fulfil orders, so the financing is limited to providing the cash to the collector in order to buy the product. Pre- financing earlier in the season is limited. One recent attempt at working directly with farmers ended poorly: an established cashew exporter initiated a scheme (in order to get round the problems with buying agents not delivering) to advance funds directly to the farmers in return for an agreement from the farmers to supply nuts. As prices rose during the season the farmers chose to deliver nuts to other buyers, regardless of the agreement, with the consequence that the exporter incurred severe losses of a scale at least equal to the less direct route of funding buying agents.

The following companies based in Bajul export Cashew to foreign markets:

- Afro Commodities Sarl
- Amefsen
- Asia Commodities
- Asia trading Enterprises
- Bharti Enterprise
- Chellaram & Sons Ltd
- Comafrique (Gmbia) Ltd
- ETS Moussa Sadio
- Inter Agro &
- Little Star Gambia Ltd
- Midas Commodities
- Millenium Impex
- Multipro Gambia Ltd
- Royal Enterprise
- Sara Trading
- Societe Cada Sarl
- VV Holdings Ltd

As in Senegal, prices paid to farmers differed significantly between different zones.[41] In Lower Nuimi the mean kilo price for a Kg of RCN was 24.58 Dalasi, 75% higher than the mean price of 14.08 Dalasi paid in Western Region (seeTable 3.12). The data on marketed quantities is similarly differing as can be seen inTable 3.13. The mean marketed quantity of Western Region is more than 50% higher than the one in the North Bank Region. As obvious from the number of trees this can be explained by bigger plantation sizes in the Western Region. The mean relative yield is higher in North Bank Region anyway: 1.8 marketed Kg/tree compared to 1.5 in Western Region.

Table 3.12: Mean Price of Cashew per Kilo in 2009 Season

Zone	Mean Price (in Dalasi)
Lower Nuimi (North Bank Region)	24.58
Western Region (Western Region)	14.08
Group Total	19.06

Source: Adapted table from International Relief & Development (2010): 21.

Table 3.13: Mean Relative Yield (marketed kg/tree) in Senegal by Zone

	North Bank Region	Western Region	Total
	Mean	Mean	Mean
Marketed Quantity (kg)	501.8	860.36	693.48
No. Cashew Trees	279.66	574.71	423.32
Relative Yield (Marketed kg/tree)	1.8	1.5	1.64

Source: Adapted table from International Relief & Development (2010): 20.

Looking at the overall mean quantities sold by Gender in the surveyed zones in Gambia one can see that the difference between male and female farmers is not as distinct as in Senegal. Female farmers sold 632.91 Kg on average, male farmers 703.21 Kg. Again, female farmers mostly act in collectives whereas the majority of male farmers do their business individually.[42]

3.3 Cashew Processing in The Gambia

In Gambia there are 5 known processors, two of whom are active or would be with greater availability of raw material, one is unknown, one has never operated and one has stopped following the death of the owner. The total amount processed is perhaps 15 tonnes per yearTable 3.14). Kernels are sold locally, either plain or roasted. Most retail sales are through roadside vendors, while shops, hotel and restaurant trades offer a formal outlet.

However, there is also a substantial artisanal processing activity: a survey for CEP found that 46% of cashew growing households undertook some processing for personal consumption or for sale in the village.

[41] Again, it has to be noted that data should be understood as proxies rather than reliable data due to inconsistencies in collecting the data.

[42] International Relief & Development (2010): 19f.

Table 3.14: Active Cashew processing facilities in The Gambia

		Western Division	
Name		**Gambia Horticultural Enterprises - GHE**	**Jawneh**
Brand		None	None
Type of enterprise		Private	Private
Started		2008?	2008
Capacity			
	Theoretical	60	25
	Operating 2010	<5	11
Number of employees/members		10	16
	Male	n.i.	0
	Female	n.i.	16
	Number Permanent	n.i.	n.i.
	Number of Occasional	n.i.	n.i.
Technology		Pedal cutters	Hand cutters
Market		Banjul	Banjul
Market linkages		Own retail outlet for nuts and other food products	None
Co-operation with producers/outgrowers		Own production	None
Supply strategy		Own production, would buy if had financing and market	None
Experience of co-operation with producers		Own production	Local placed
Role of intermediaries		None	Received support from Comafrique in 2009
Logistics of transport and marketing		Own vehicles	Own vehicles
Supported by		None	None

Source: Jaeger / Gomez' own research

3.4 Support Organisations

As in Senegal, the Government of Gambia has not intervened in the cashew sector to date. It is therefore fully liberalized and open, but unregulated, and there is no state support in the form of extension services.

There is one donor project working in the sector: The Gambia River Basin Cashew Value Chain Enhancement Project, CEP. This is a three year project funded by USDA. The project seeks to improve the livelihoods of rural farmers through the strengthening of the cashew value chain. CEP interventions are targeting two regions in The Gambia (North Bank Region (Lower Nuimis only) and Western Region (entire region) and three zones in the Casamance region of Southern Senegal (Bignona, Sedhiou, and Ziguinchor).

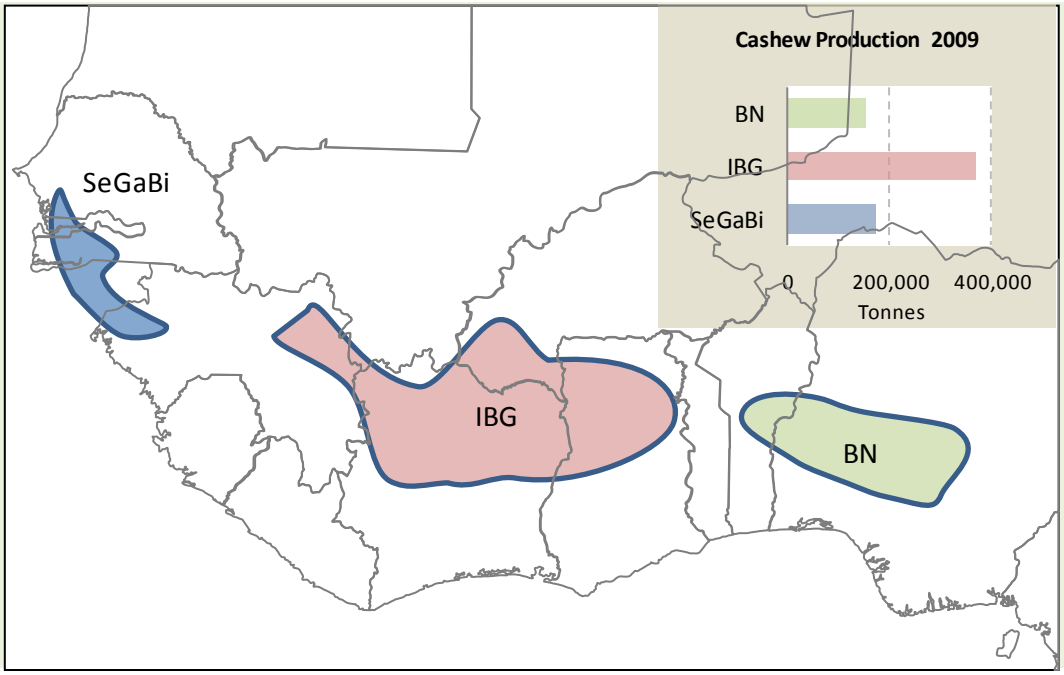
There are three activities:

- Strengthening of cashew producer organizations through entrepreneurship and organizational training and support;
- Introduction of best production and post harvest handling practices to increase cashew nut yields and improve nut quality
- Supporting activities that add value to the cashew value chain, including processing of cashew nut, cashew apple and other related value added industries.

4 Senegal and Gambia as a producing region

In West Africa there are essentially three disjunct producing areas (see Figure 4.1 below). Cashew production within these zones is not continuous, rather the plantings may be quite scattered, and the placing on the diagram is approximate. We believe that it is useful to recognize three areas since the characteristics of the production in each differs. The season starts in Nigeria and Benin in January and ends in June/July in Senegal. The coastal production of the SeGaBi zone (Senegal, Gambia and Bissau plus some minor production in the Boké area of Guinea) is of a higher quality than the IBG (Ivoirien, Burkinabé, Ghanaian) cashew which is small and has a lower outturn.

Figure 4.1: Cashew production in West Africa



Source: Jaeger / Gomez' own estimates

The background to these distinctions is not understood. It may be genetic, in that different areas have been planted up with locally selected and multiplied genotypes, or, more likely, it is an environmental effect. The cashew in West Africa grows in an ecological zone which botanists classify as Guinean Forest Savanna Mosaic, which is a region of mixed forest, savanna and grassland that separates the Guinea forests from the Sudanian grasslands. The geographical situation of this eco-region is heavily influenced by climate: at its north western extremity, in Senegal/Gambia/Bissau it reaches the coast but then sweeps inland in a belt crossing northern Guinea, northern Côte d'Ivoire, and Ghana, southern Burkina Faso and on into Central Africa. The cashew areas of Senegal and the Gambia are therefore at very low altitudes, effectively sea level, whereas the more easterly cashew areas in Côte d'Ivoire or Benin and Nigeria are well inland and at 150m or more altitude. Which environmental factors (eg rainfall, sunshine, temperature, relative humidity, soil etc) might be responsible does not seem to have been investigated yet.

By comparing the cashew production of Senegal and The Gambia with other producers one sees that the two countries are only minor producers, even in the West African context (see Figure 4.1). The combined production of around 35,000 tonnes of raw cashew nuts per year is further supplemented by occasional smuggling from Guinea Bissau. The production in Guinea Bissau is contiguous with the Gambian/Casamance producing area and in view of the flow of cashews into Senegal from Bissau and from Senegal into Gambia it is logical to consider the region as a whole. The value chain analysis in Figure 4.2 therefore includes Guinea Bissau. Annex 1 shows an annual increase in production but it has been a slow rate of growth. We anticipate further more rapid increases in the harvest as new plantings come on stream.

Groundnut production in the region did not develop well in recent years. Therefore, farmers were ready to look for an alternative, which facilitated the rise in cashew production. In Senegal and the Gambia growing cashew is profitable and it is estimated that farm gate sales bring in over USD15mn to the rural economy. There is the potential for significant growth here.

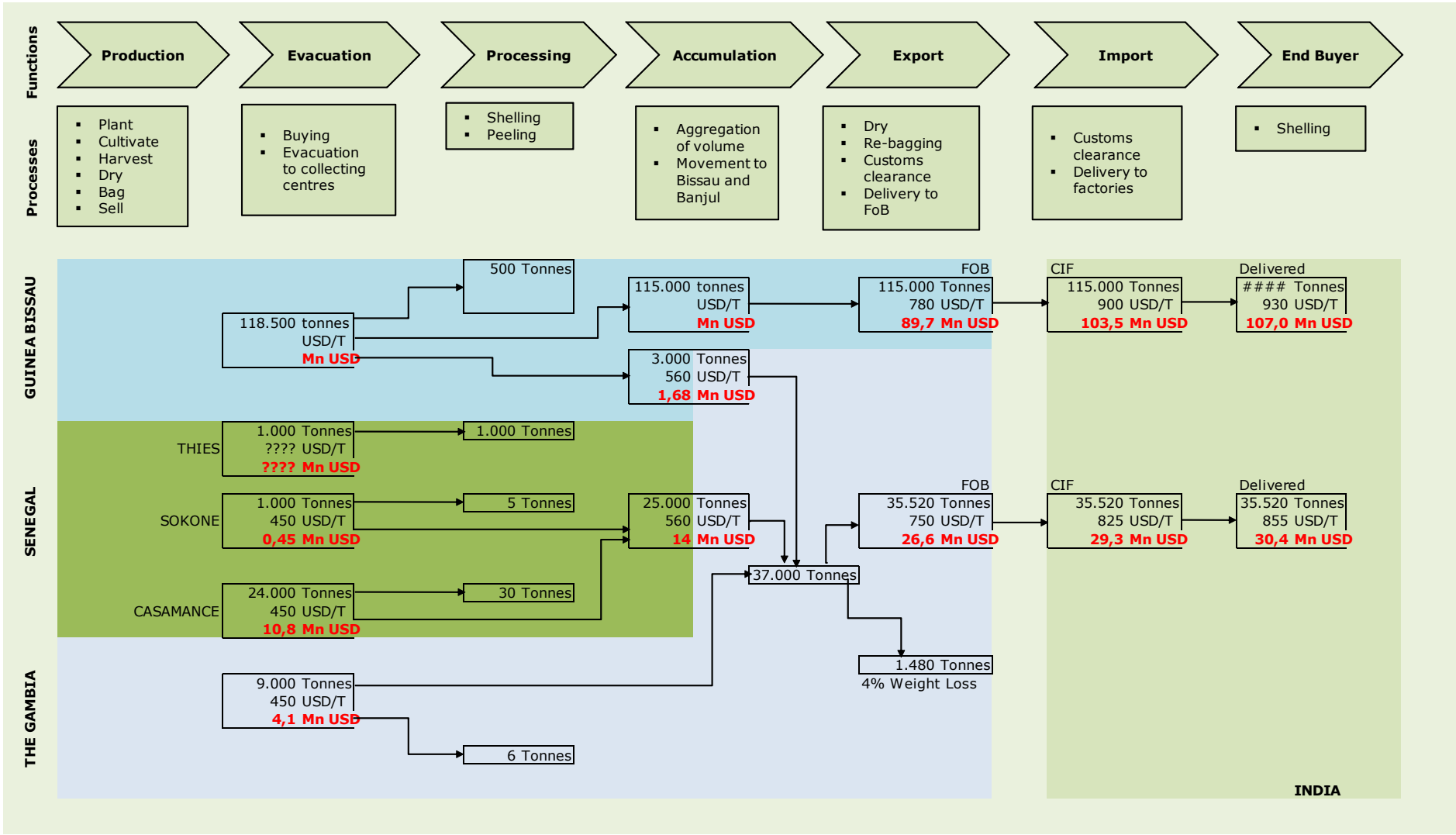
Table 4.1: Global Raw Cashew Nut Production 2010

Origin	Production of Raw Cashew Nuts (Tonnes)
Asia	**929,500**
India	465,000
Vietnam	300,000
Indonesia	90,000
Cambodia	60,000
Philippines	5,000
Thailand	4,000
Sri Lanka	5,500
East Africa	**165,000**
Tanzania	90,000
Mozambique	65,000
Kenya	10,000
West Africa	**691,000**
Côte d'Ivoire	335,000
Guinea Bissau	135,000
Benin	85,000
Nigeria	70,000
Senegal	26,000
Burkina Faso	16,000
Ghana	15,000
The Gambia	9,000
South America	**300,000**
Brazil	300,000
F	
TOTAL	**2,085,500**

Source: Adapted from Fitzpatrick (2011)

Figure 4.2 overleaf summarises the value chain in the region, and collates the data for volumes and values in order to quantify the position. We estimate the Senegal and the Gambia produce a combined 35,000 tonnes of raw cashew nuts per year. Annex 1 shows an annual increase in production but it has been a slow rate of growth. We anticipate further more rapid increases in the harvest as new plantings come on stream.

Figure 4.2: The cashew value chain in the Senegal, Gambia and Guinea Bissau region. Data apply to 2010



Source: interviews, Jaeger / Gomez' own estimates (No data for Farmgate prices was collected from Guinea Bissau. Values are indicative of the situation in quarter 2 and quarter 3 of 2010.)

4.1 Smuggling

The amount of cashew arriving from Guinea Bissau into Casamance is rather variable (Annex 1). Trade sources estimate that the imports, which are smuggled and unofficial and therefore unrecorded, are usually less than 5,000 tonnes. In 2009, however, as shipment delays resulted in a shortage of storage space in Bissau, smuggling massively increased and exceeded 30,000 tonnes.

It seems that movement of cashew from Guinea Bissau to Casamance depends to an extent on the availability of storage in Guinea Bissau as well as purchasing patterns and prices: if there is a problem in moving stocks from up-country in Guinea Bissau to the warehouses at the port, which may happen if a shipment is delayed, then there is an incentive to move product across the border in order to collect payment and return to buying. The Guinea Bissau cashew is reportedly not well dried and there is urgency to selling if the nuts cannot be dried and stored. Where the purchasing moves ahead of clearing product from the port there is no means to store the product reliably up-country smuggling becomes the best option. Further there are taxes on the export of cashew from Guinea Bissau whereas there are none from Senegal so the collectors price may be slightly better on the Senegalese side although this might be offset by the costs in delivery.

Mostly, the cashew is "smuggled" by bicycle and the border guards and customs official are included in the value addition. On the Ziguinchor road are a number of small warehouse built to receive and hold a few tonnes for the daily flow of cashew during the season.

There are reports of cashew arriving from other countries, such as Mali and Côte d'Ivoire, but the volumes are comparatively small.

4.2 Quality Standards

We recorded the following anecdotal quality data (Table 4.2):

Table 4.2: Nut quality parameters in various growing areas of Senegal, Gambia and Guinea Bissau (2010)

Country/ Region	Area	Count /kg	Outturn Kernel lbs per 80kg RCN
Senegal			
Casamance	Dioloulou	190-220	56
	Senghalene	200	54
	Sedhiou	200	52-54
	Kolda	225-250	48-50
	Ziguinchor	230	50-53
Fatick	Sokone	210-220	56
Gambia			
	South Bank	180-210	52-55
Guinea Bissau		200-210	52-53

Sources: Jaeger / Gomez' own research

Note that there may be variation between years and also within a year and this is not a representative sample. It is however, generally acknowledged that the Kolda cashew, for example, is of inferior quality with a higher nut count (i.e. smaller nut) and a lower outturn.

While there is quite a widespread understanding of cashew quality parameters, some are outside the influence of the farmer while others, such as harvesting at the correct stage, are not fully rewarded in the pricing.

Formal Quality Standards:

There are no formal social or environmental standards applied specifically by central Government or any trade associations to the cashew sector in either Senegal or The Gambia. The national, social, environmental and food standards apply but for the most part the cashew sector is free of intervention.

The only existing product standards that impact on the cashew sector in either Senegal or The Gambia are those imposed by the trade. The India-based importers may provide RCN specifications and these will relate to the nut count as a measure of nut size, the outturn of kernels from the RCN and the moisture content. They may also relate to the local origin of the nuts where the buyer has some

knowledge of the region but mixing of nuts in the exporter warehouses has obscured the relative merits of the different producing areas from the buyers. For the most part purchasing from the farmers is done without a price differential. The dealer/exporter may manage this aspect by buying from selected areas where the quality is known.

Ethical trade standards, such as organic produce or "Fair Trade", were not found in the cashew sector here. Note, also that there are few environmental issues that are impacted by cashew and as discussed above the impact of intercropping cashew on food security is limited.

No food quality standards are being applied to RCN or the kernels.

Opportunities:

The mixing of RCN in Banjul is obscuring the high quality that is available from some areas. True Gambian cashew, or that from Sokone in Senegal, has a low nut count and high outturn and should achieve premium pricing. While production was low, this is not a significant issue but as production grows the pricing of the RCN to the lowest quality will represent a more important lost opportunity. Influencing the decision of whether or not to mix a product is notoriously difficult.

If the cashew processing sector is to develop into the export market, kernel grading will need to be introduced.

The ethical trade is quite hard to develop in cashews since the bulk of the RCN is exported to India where it is mixed with other origins. While this might be seen as an incentive to process locally, the market opportunity is quite small and represents a limited opportunity.

Traceability is not yet an issue in cashew, not least because the mixing of cashew in India would make true traceability very difficult. However, Indian factories are developing a capability to trace product back and may yet require it.

4.3 Consumption

Despite the activities of a number of donor projects and a lot of entrepreneurial effort, the proportion of the regional crop that is processed is tiny. The use of local production for processing is concentrated around Thies. Elsewhere, the industries are constrained by the competition for raw cashew nuts from the export trade and also by being undercapitalised. SCPL in Ziguinchor seems to be in a position to market kernels outside of Senegal, but was dependent on finding an investor in 2010 in order to maintain growth.

The processing at Thies is more of an artisanal model than industrial and the volumes achieved are consequence of the large number of women involved in the scheme. Its success is based on the Dakar market where there is a good demand that is not too strict in quality issues. The CEP baseline study noted that there is also significant artisanal processing in the Gambian production for consumption at home.

In Senegal cashews for consumption are sold in different localities. In supermarkets the consumer can find several flavours in different packages and pack sizes for an average kilo price of 18.64 US-Dollars. Service station also sell cashew but at a relatively high price of 20.20 US-Dollars/kg on average. Therefore, quantities sold are low. Distribution through small shops is underdeveloped. They cannot provide steady supply but prices in small shops are 30% lower than in supermarkets and they pay on delivery. According Boillereau and Adam who undertook a study on cashew consumption in Western Africa hotels and restaurants in Senegal have a major potential for cashew due to the country's 17,000 expatriates and its almost 800,000 tourists yearly. Numerous luxury hotels use cashews although in small quantities. Even though, established roasters and salters generally provide good quality nuts 50% of hotel managers interviewed by Boillereau and Adam reported quality problems. Furthermore, they indicated that resupply by processors is not sufficiently stable. Besides, packaging materials need to be improved.[43]

Consumers mainly eat cashews at home or while travelling which indicates the potential of increasing sales in airports or service stations. Preferred tastes are plain, roasted and salted. Participants in group interviews in the frame of Boillereau's and Adam's study expressed their interested in broken kernels if available for a lower price. Interestingly, the awareness about cashews grown in Africa is quite low. Survey participants indicated that they would buy more African cashew if a recognized "African label" existed.[44]

Opportunities for the Senegalese market suggested in the study from Boillereau/Adam:

- *"Processors need to work more closely with retailers to ensure better distribution, particularly between processors based in southern Senegal and retailers in the North. Distribution is a major obstacle to increased sales in Senegal.*
- *Point of sale marketing (packaging and displays) to promote the health benefits of cashews could increase sales.*
- *Processors could offer hotels better service and distribution. Specifically, with better relationship management, efforts could be undertaken to increase sales in hotels, such as putting cashews into mini-bar systems.*

[43] Boillerau, N./Adam, B./WATH (2007a): Cashew Marketing & Consumption In West Africa, West Africa Trade Hub (WATH) Technical Report No. 22: 27f.

[44] Ibid: 28.

- *Target small street-side shops and bakeries, medium and larger hotels, to increase visibility and consumption.*
- *Improve information on labels to include ingredients/nutrients, origin, and an attractive design. Higher-quality retail packages—particularly small aluminium sachets—are good candidates for export to The Gambia and Francophone North Africa, including Mauritania, Morocco, Algeria, and Tunisia. (The potential of this market should be explored in a market study focused on these areas. For now, it appears that Senegalese cashew prices must decline to be competitive with Asian imports in North Africa.)"* [45]

In **The Gambia**, the cashew consumer market is highly concentrated on the small coastal region where most of the country's 80,000–100,000 tourists per year are located. Supermarkets mainly sell kernels imported from Europe or Senegal because of low quality and poor packaging of local products. The average kilo price in supermarkets is at 26.40 US-Dollar. On local markets the kilo price is 20% lower and quantities sold are much higher. "However, quality varies widely and few products are sold under a recognized brand, reducing consumer perceptions of quality."[46]

Opportunities for the Gambian market suggested in the study from Boillereau/Adam:

- *"The local market has potential*. [Regionally compared, The Gambia has a relative high GDP per capita. This means that] *consumers have relatively high purchasing power. Target local minimarkets/ occasional markets and supermarkets frequented by locals and tourists (both for snack foods and as cooking ingredients).*
- *The tourist market offers considerable possibility for increasing sales of local and regional products, if labeling and packaging can be improved. Tourists often reside in self-service apartments and thus shop for groceries and snacks. This market seems ripe for advertising Africa-themed cashew packs with high-quality labeling. Other places include airport shops, service stations, tourist shops, and bars.*
- *Supermarkets and hotels need to be convinced of the quality and reliability of local and regional processors if they are to replace imported products with local and regional ones.*
- *Hotel mini-bars and gift shops are a potential market, but hotel managers must be convinced, as they are not accustomed to distributing food products in this format. Broken/roasted and salted cashew bits could potentially replace the currently consumed peanuts in the upscale hotel bars and restaurants where tourists, expatriates and locals congregate.*
- *Because Indian and Chinese investments and expatriate populations are increasing, restaurants catering to these expatriates may be interested in using more cashews in their cuisines.*
- *Packages must be smaller, more attractive, and cheaper than the current selection while still meeting quality standards, including shelf life. Simple but colorful labels with basic information on the product will allow processors to develop consumer loyalty and build perceptions of quality.*
- *The introduction of cashew nuts in the cookies and biscuit chain, combined with a campaign to raise awareness about cashew secondary products and increase their distribution (cookies, caramelized cashews), seems to have high potential, as many consumers already appreciate these products.*
- *Popularizing the consumption of Lebanese sweets using cashews is a good way to involve the large Lebanese population in The Gambia."*[47]

4.4 Exports and Competitiveness

While there is only a minor fraction of the cashew produced in Senegal that is processed, the rest of the crop, at least 96% of the total output, is exported. Most of the cashew passes through Banjul. This is understandable:

- All the crop destined for export is produced in areas closer to Banjul than to Dakar;
- Dakar port is quite congested;
- Dakar port is more expensive than Banjul ($36/tonne vs. $21/tonne[48]);
- Banjul is considered to be a comfortable city in which to live and do business;
- Banjul has a buoyant import business based on re-exporting and currency is therefore readily available.

In consequence, the exporters and their warehouses and offices, are to be found around Banjul. Since the product of The Gambia and Senegal supplemented by some of Guinea Bissau pass through Banjul, and may or may not be consolidated. A comparison of port options in the region is shown in Annex 3. At present the cashew processing sector is of limited capacity and not actively engaged in export marketing.

The market for the nuts produced in Senegal and The Gambia is almost exclusively in India. It is the demand from India that has led to the development of cashew production in the region. The cashew business is generally profitable to all those in the value chain, and the product is clearly able to compete in the overseas market. The nut yields and counts are relatively good.

The timing of the Gambian/Senegalese crop is such that there are few other origins harvesting concurrently, but there is an increasing volume available immediately beforehand from Côte d'Ivoire that tends to put a cap on prices. It is therefore imperative that the Gambian/Senegalese crop provides a superior offering to the buyer to justify a higher price and this usually seems to be true (4.3).

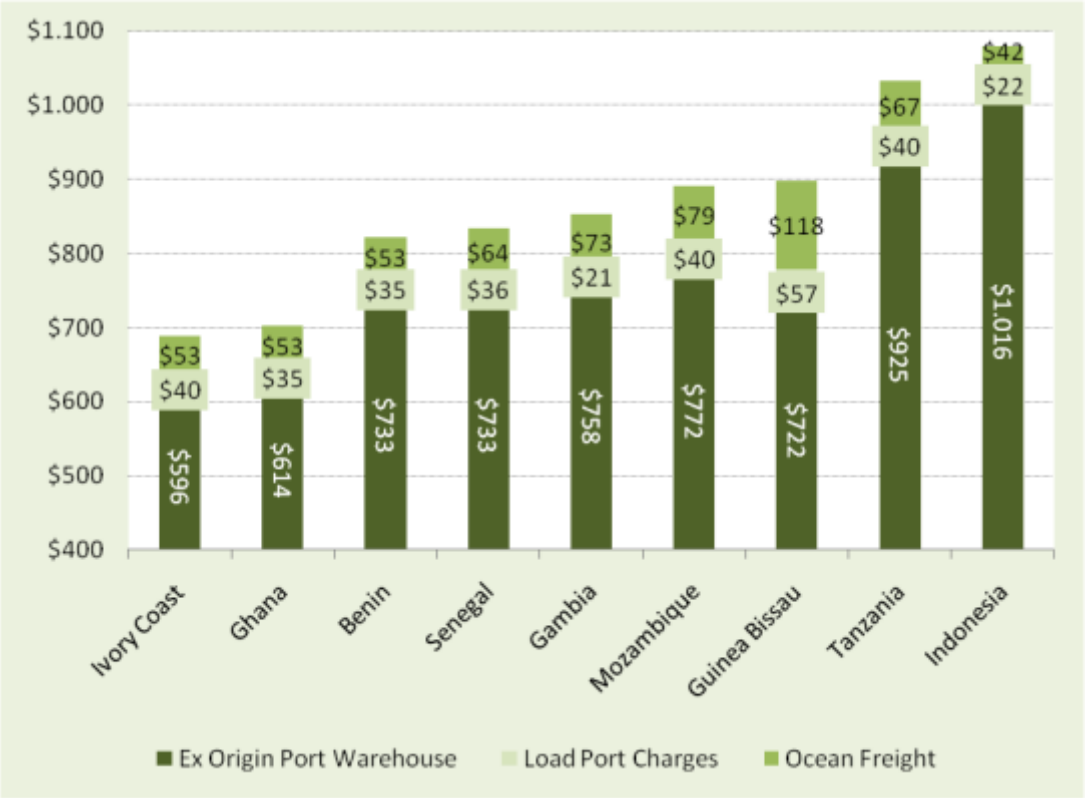
[45] Boillereau, Nicolas/Adam, Brook/WATH (2007b): 28.

[46] Ibid: 21.

[47] Ibid: 21f.

[48] Fitzpatrick, J. (2011).

Figure 4.3: Indian in-shell cashew imports by principal origin



Source: Indian customs data, Jaeger / Gomez' own research and Natural Protocol data

Although the data on "Indian in-shell cashew imports by principal origin" of Figure 4.3 are derived, the picture reflects the reality of the pricing of raw cashew nuts in India. The pricings is not simply a question of quality but also reliability/reputation and timing.

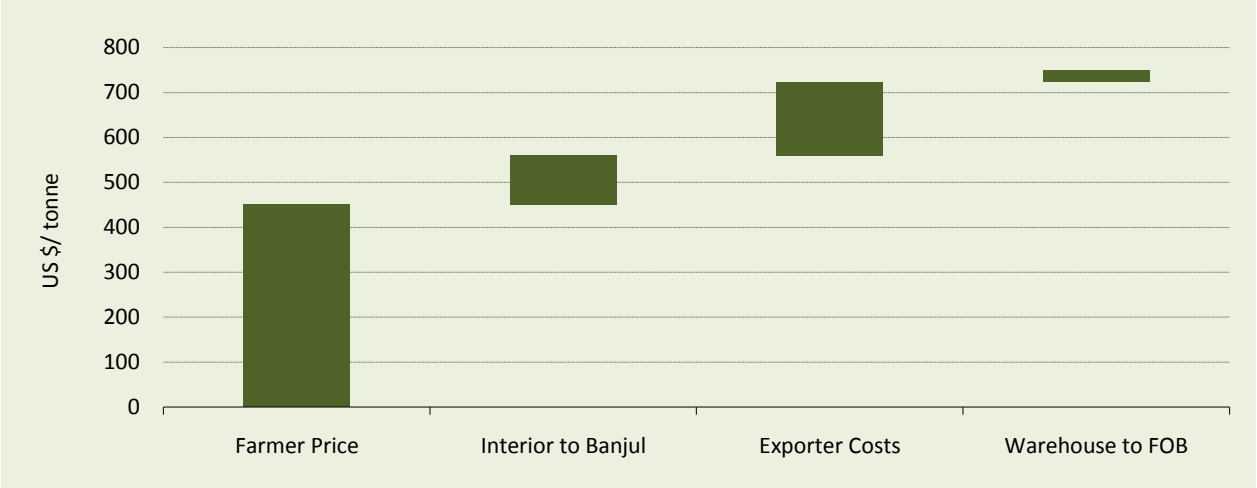
It is also interesting to note in the chart that despite the higher selling price of Guinea Bissau RCN, the returns per tonne to the country are below The Gambia which ultimately impacts on rural income.

The export destinations within India are changing slowly too. Previously, with the industry largely located in Kerala, raw cashew nuts were imported through Cochin, which was the port nearest to Quillon, the centre of processing. Subsequently, industrial disputes at the port and changes to labour laws and tax regimes, provoked a drift southwards by the processors to Tamil Nadu and eastwards for imports to the port of Tuticorin. This is reflected in the destination of exports from Banjul where containers sent to Tuticorin exceed those sent to Cochin. In 2010 Cochin leads again although substantial volumes are going to Tuticorin. Meanwhile, the east coast port of Visakhapatnam is becoming increasingly important as a destination and this reflects the growth of a processing in industry in the hinterland at Panruti.

4.5 Economics

The break out of costs and margin obtained from discussions along the value chain indicate that the farmer receives between 60% and 65% of the fob value of the product (Figure 4.4). The percentage will fluctuate according to movements in prices within the chain but Figure 4.4 shows an approximation of a typical situation.

Figure 4.4: Break-out of Values from Farmgate to FOB



Source: Jaeger / Gomez' own estimates

The greatest flexibility in the chain is found in the exporter margins. A significant margin is allowed in order to manage the risks involved in exchange rates, in market movements within the system, that is fixing a selling price but finding the farmer price rising, in speculation by the collectors, in losses in advances to the collectors and finally in weight losses while at sea. Those better able to control the risks, possibly through long established relationships, may be able to work on thinner margins.

The collectors operating between the interior and Banjul are protected from price movements and earn a fixed commission. They further increase their income through taking a position in the market and also by side selling.

The farmer returns, whether calculated as a percentage of FOB value or not, are good. The only significant cost in an established plantation is labour: some cleaning of the farm is needed during the year and then during the harvest season much time is needed in the farm to protect the crop from cattle and thieves. We estimate the labour costs (at GMD50/day) to amount to between USD64 and USD125 out of the USD450/tonne selling price. The variation depends on how much time is put into protecting the harvest from theft. In a number of areas, the fruit is also used, for drying or juicing, and this contributes further income. Interviewees reported that cashew was "more profitable" than groundnuts. The crop budget in Table 3.3 on page 31 shows that a plantation of single stand cashew is expensive in localterms to establish and takes at least seven years to break even. Planted as an intercrop however, the establishment costs are significantly lower, principally because there is less land preparation, and food security is maintained. Once the trees are established however, the owner of say 200 trees reaching maturity should receive an income of say USD405[49] per year in return for about 23 days of labour giving a return on labour of about USD18 per day. The key point however is that there are few alternative sources of income in this rain-fed resource poor environment.

[49] Assume 4.5kg/tree and a selling price of USD450.

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Abbreviations

ACA	African Cashew Alliance
ACi	African Cashew initiative
ACP	Africa, Caribbean, and Pacific (signatory countries of the Lomé Convention)
AfDB	African Development Bank
ATNA	Association des Transformateurs de Noix d'Anacarde
CEP	The Gambia River Basin Cashew Value Chain Enhancement Project
CIDA	Canadian International Development Agency
CIF	Cost, Insurance & Freight
CY	Container Yard
EC	European Commission
ECOWAS	Economic Community of West African States
EPA	Economic Partnership Agreements
EU	European Union
FAO	Food and Agriculture Organisation
FBO	Farmer Based Organisation
FOB	Free on Board
FODDE	Forum pour le Developpement Durable Endogene
GDP	Gross Domestic Product
GMD	Gambian Delasi
GSP	Generalized System of Preferences
GTZ	Gesellschaft für Technische Zusammenarbeit
Ha	Hectares
IFAD	International Fund for Agricultural Development
Kg	Kilogram
Km	Kilometre
Lb	Pound (unit of mass)
M	Metres
Mn	Million
MT	Metric ton
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
NTAE	Non-Traditional Agricultural Exports
PADEC	Economic Development of Casamance Program
PASA	Projet Anacardier Senegalo-Allemand
ProCAS	Programme d'Appui pour Développement socio-économique pour la Paix en Casamance
PROMER	Projet de Promotion des Micro-Entreprises Rurales
ProVAEC	Projet de Valorisation des Produits de l'Agriculture et de l'Elevage en Casamance
RCN	Raw Cashew Nuts (i.e. nuts with the shell intact)
SCPL	Société de Commercialisation de Produits Locaux
SeGaBi	Senegal, The Gambia and Guinea Bissau (used here as a grouping of the cashew producers in the region)
SSA	Sub-Saharan Africa
T	Tonnes
TCT	Transformatrices de Cajou de Thienaba
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WTO	World Trade Organisation

Conversions:

Metric units are used where possible in this report.

1kg	=	2.2046 lb
1lb	=	0.4536 kg
1ha	=	2.471acres
1acre	=	0.4047ha

Cashew Conversions:

Outturn (kernels from in-shell)	Usually described as weight of kernels in lbs per 80kg bag of in-shell nuts. See also Yield #1.	To convert outturn to yield Divide lbs figure by 0.176 51lbs/0.176=290grms 29%
Yield	1. Mass of kernels in grams per kg of in-shell nuts	1. typically 285 g
	2. Kernels shelled by grade	2. Reported as a percentage of each grade
RCN/Container	200 bags @ 90kg	18 tonnes gross /20ft container
Cartons	Kernel packing unit	50lbs = 22.68 kgs
Cartons/20ft container	700 cartons = 35,000lbs/2204	15.88t
Tonnes in-shell to cartons kernels	India multiply tonnes by 10	Brazil multiply by 9
W240, W320, W450, FS, FB, LWP	Cashew kernel grades	A complex grading system – W grades refer to whole and white – the standard for snack nuts. Industry benchmark is the W320

Annex 1: Gambian Raw Cashewnut Balance Sheet

		Source	2005 tonnes	2006 tonnes	2007 tonnes	2008 tonnes	2009 tonnes	2010* tonnes
PRODUCTION	Gambian Harvest	ACA	1.500	1.500	3.000	5.000	7.000	9.000
IMPORTS TO THE GAMBIA	Guinea Bissau	Traders' estimates	2.500	2.500	3.000	3.000	33.000	3.000
	Casamance	ACA; Traders' estimates; border declarations, Syndicat des Transportateurs	19.500	20.500	21.000	22.000	24.000	24.000
	Sokone	Traders' estimates	500	500	500	500	500	1.000
	TOTAL		22.500	23.500	24.500	25.500	57.500	28.000
WEIGHT LOSS	Assumption		3%	3%	3%	3%	5%	3%
	Tonnage		720	750	825	915	3.225	1.110
TOTAL AVAILABILITY			**23.280**	**24.250**	**26.675**	**29.585**	**61.275**	**35.890**
PROCESSING			<10	<10	<10	<10	<10	<10
EXPORTS	National Export Data	Gambia Bureau of Statistics	0	0	196	30.898	35.096	
	Shipping lines	Maersk; Delmas	n/a	n/a	n/a	n/a	54.868	35.322
	Inspections	Phytosanitary	n/a	n/a	n/a	n/a	n/a	n/a
IMPORTS FROM THE GAMBIA	Imports to India from Gambia and Senegal		18.542	32.425	32.225	28.459	38.967	n/a
	Imports to Vietnam		0	0	0	0	0	n/a
	TOTAL		18.542	32.425	32.225	28.459	38.967	0

* Provisional

Annex 2: Processing budget

The table below shows the budget prepared by Ziguinchor processor SCPL and the local association of processors, ATNA, to demonstrate the viability of local processing and delivering skin on kernels to the SCPL for finishing. This is one of several budget prepared for different scale production. This one assumes two cutting tables processing 60kg each for 25 days.

Activity	Quantity (Kg)	Unit Cost (CFA)	Total (CFA)
Raw cashew nuts	3,000	400	1,200,000
Labour for shelling whole kernels	783	250	195,750
Labour for shelling brokens	87	100	8,700
Transport of raw nuts	3000	10	30,000
Transport of shelled kernels skin on	870	50	43,500
Gloves	2	2,700	5,400
Total Variable Costs to skin on kernels			**1,483,350**
Fuel wood			21,000
Labour for skinning whole kernels	654.6	200	130,918
Labour for skinning broken kernels	72.7	200	14,546
Transport of kernels skin on	727.3	50	36,366
Total variable costs to skinned kernels			**1,686,180**
Amortisation		13,850	13,850
Interest		10,000	10,000
Total Fixed costs			**23,850**
Total costs to skin on kernels			**1,507,200**
Total costs to skinned kernels			**1,710,030**
Value whole kernels skin on	783	2,000	1,566,000
Value broken kernels skin on	87	1000	87,000
Value whole skinned kernels	589.1	3000	1,767,387
Value broken skinned kernels	138.2	1,500	1,974,673
Margin skin on kernels			**145,800**
Margin skinned kernels			**264,643**

Assumptions:

Yield of skin on kernels	29%
Yield of whole skin on kernels	90%
Weight loss on drying	5%
Weight loss on skinning	12%

Annex 3: Regional Ports

There are five ports in the "SeGaBi" cashew growing region. Most of the cashew of Guinea Bissau leaves through Bissau port, while the bulk of the Gambia and Senegal crops is shipped through Banjul. Banjul port operates relatively well and the local infrastructure, both physical and economic, and location has led to the establishment of the cashew export trade. The extra distance of trucking to Dakar and the higher port charges of Dakar port itself, mitigate against the use of Dakar for cashew, although some small quantities do exit this way. Against this, is the threat of border closures which could (and indeed from time to time have) seal off the route from Casamance to Banjul and from Sokone to Banjul. Lately more substantial warehouses have been constructed in Serrekunda on the southern approach to Banjul, and it seems likely that Banjul will continue as the port of choice for cashew.

The Ports of the SeGaBi Region

Source: Google Earth

Banjul port is managed by the Gambia Ports Authority. The port offers five berths on a total pier length of 750m and handles about 1.5mn tonnes of cargo per year. Access to the berths is limited to vessels under 15,000 tonnes. Of the imports about 45% arrive in container and there is a massive imbalance of trade with most containers leaving empty. The volume of traffic exceeds the rather small domestic demand of the Gambia because of thriving re-export trade which keeps the port at near capacity. Clearance for imports is held to be fairly efficient which supports the role of Banjul as a trade hub. This further re-inforces the preference for locating cashew exporters in Banjul, since the revenues from import sales are made available there for export purchasing.

Dakar has a relatively modern infrastructure and is by far the largest port in the region offering extensive quay facilities, storage and rail connections. There is a tanker terminal, container terminal, grain fishing facility, fishing port and dedicated phosphate terminal covering 326ha of land. The port handles a large amount of traffic both for the domestic market but also for the regional transit trade. The port has become increasingly congested and there renovations underway. The two Senegalese ports neighbouring The Gambia are both river ports.

Kaolack, once important for salt and groundnuts, is over 100km from the sea and lies on the right bank of the Saloum River. Total berthing length is 340 m but, importantly, the port is linked by rail to the main Dakar-Mali line. However, the estuary bar is a major constraint as are the narrow width and limited depth of the river such that only vessels below 4.3m draught can navigate to the port. While there are certainly attractions to the further development of Kaolack as a port (it is closer than Dakar to Bamako) the cost of reviving this old colonial port is likely to be prohibitive.

Ziguinchor is an important town for the transit of cashew. Here, loads are consolidated from the surrounding areas and, together with smuggled cashew from Guinea Bissau, trucked to Banjul. The port was founded in the 17th century and lies some 70km from the sea. Following renovations in the last 10 years there are now 350m of quay with three berths accommodating tankers, cargo and passengers. Vessels up to 4,000 tonnes can be accommodated. The port could be used for cashew shipment to Dakar but currently the cost exceeds road transport.

Annex 4: Climate Data

The Gambia : North Bank KEREWAN (Source: Department of Water Resources , Banjul)

Rainfall (mm)

Year	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2004	0	0	0	0	0	86,6	181,5	243	198,7	34,6	0	0	744,4
2005	0	5,2	0	0	0	34,5	145,5	353,6	353,6	129,2	0	0	1021,6
2006	0	0	0	0	0	169,9	149,7	336	232,2	57,3	0	0	945,1
2007	0	0	0	0	0	46,4	222,9	370	201,4	25,7	0	0	866,4
2008	0	1,8	0	0	0	113,6	180,9	373,3	261,9	138,7	0	0	1070,2
2009	0	0	0	0	0,8	47,8	236,6	678,4	305,5	28,7	0	0	1297,8

Maximum Temperature C

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2004	34,0	36,2	38,0	37,2	38,3	34,9	31,3	31,7	32,2	34,4	35,3	34,4
2005	33,3	34,3	39,3	39,0	37,6	36,6	32,4	32,0	31,5	33,1	34,7	35,0
2006	33,1	35,2	38,9	38,2	37,8	34,9	32,8	32,1	32,0	33,6	35,7	
2007	34,8	37,5	38,9		39,0	35,7	33,0	31,6	32,1	33,3	34,9	34,4
2008	34,0	37,1	38,6	38,9	39,7	35,3	32,0	31,3	32,2	32,9	35,6	34,7
2009	32,1	34,4	36,4	39,5	37,8	36,4	33,0	31,6	31,8	34,3	35,2	35,2

Minimum Temperature C

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2004								24,1	23,2	24,1	20,0	18,1
2005	16,0	18,0	18,8			24,8	23,7	23,5	22,8	23,3	19,5	17,5
2006	15,3	16,7	18,5	19,7	20,1	23,3	23,5	22,9	22,3	23,0	19,2	
2007	14,4	14,2	16,0		19,5	21,2	23,1	22,5	22,2	21,4	17,6	13,7
2008	11,3	14,6	17,2	17,8	18,9	19,1	18,9	18,5	18,6	18,7	18,0	14,2
2009	12,3	13,9	15,3	16,8	17,5	21,2	22,4	22,3	22,3	22,3	17,0	15,6

The Gambia: South Bank YUNDUM (Source: Department of Water Resources , Banjul)

Rainfall (mm)

Year	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2004	0	0	0	0	0	46,1	219,5	214,6	156,2	13,9	0	0	650,3
2005	0	6,6	0	0	1,1	72,5	199,2	324	307,1	127,3	0	0	1037,8
2006	0	1	0	0	0	43,3	136,4	420,7	327,5	28,5	0	0	957,4
2007	0	0	0	0	5,9	14,8	180,7	263,5	283,5	17,6	0	0	766
2008	0	0	0	0	0	82,2	419,7	477,9	223,8	119,4	0	0	1323
2009	0	0	0	0	0	45,4	361,6	654,2	277,5	71,4	8,6	0	1418,7

Maximum Temperature C

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2004	33,1	33,7	35,6	31,6	32,7	32,8	32,4	31,9	32,7	33,7	35,0	32,8
2005	32,9	32,3	36,4	33,3	33,3	33,2	30,9	31,3	32,0	32,2	33,0	33,6
2006	31,8	32,9	35,5	32,6	32,3	33,2	31,5	31,2	31,5	32,4	34,3	33,5
2007	32,9	35,5	36,2	33,3	33,3	32,1	31,3	30,5	30,9	32,6	34,3	32,9
2008	32,9	34,4	34,0	32,5	33,9	32,9	30,9	31,0	32,0	32,5	33,8	32,8
2009	30,4	31,0	31,1	33,9	33,1	33,1	31,7	31,2	31,5	33,2	32,5	32,9

Minimum Temperature C

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2004	17,9	18,5	19,7	20,2	20,6	24,3	24,0	24,2	22,8	23,5	21,5	20,0
2005	18,8	19,1	19,8	20,2	23,7	25,4	24,3	24,4	23,5	23,8	21,1	20,3
2006	17,4	18,8	18,9	20,0	20,9	24,1	24,4	23,7	22,9	23,8	20,6	16,5
2007	17,4	18,7	19,9	19,6	21,3	23,2	24,3	23,9	23,0	23,5	20,5	17,6
2008	17,1	19,1	19,6	20,2	21,6	23,7	23,2	23,2	23,2	23,0	20,8	18,4
2009	16,6	17,3	18,6	19,1	21,1	23,7	23,9	23,3	23,7	23,6	20,0	18,0

Senegal: 2009

Rainfall (mm)

2009	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Bignona	0	0	0	0	0	63,3	169,7	503,0	455,6	36,8	0	0	1228,4
Ziguinchor	0	0	0	0	4,4	79,4	206,2	693,8	343,1	47,6	0	0	1374,5
Niagius	0	0	0	0	0	69,2	252,8	414,4	538,0	52,0	0	0	1326,4
Niassia	0	0	0	0	0	121,9	262,3	456,2	342,2	21,9	0	0	1204,5
Diouloulou	0	0	0	0	0	51,4	339,0	703,4	355,1	38,8	0	0	1487,7
Oussoye	0	0	0	0	0	70,5	330,7	592,8	327,1	82,9	0	0	1404,0

Source: Agence Nationale de la Meteorologie du Senegal

Annex 5: Persons Met Senegal Cashew Mission (August – September 2010)

Name	Organisation	Position / Title
Sene, Lamine	African Cashew Alliance	Representative in Senegal
Badji, Landing	Association des Planteurs de l'Arondissement de Diouloulou	President
Dieng, Sheikh Tijane	Region de Ziguinchor	Governor
Sane, Lamine	Chambre de Commerce	Secretary General
Ehemba, Jean Pascal	Chambre de Commerce	President
Sow	Dept Eaux et Forets	Chef de Service Regional
Amara Sagnia, Jean Baptiste	Direction d'Agriculture	
Djiba, Mamadou	Direction d'Agriculture	
Diatta, Reny	Agence de Developpement	M & E Director
	Regroupement des Chauffeurs & Transportateurs de la Region Ziguinchor Secteur Poids Lourdes	
Diaw, Serigne Oumar	Ministere du Commerce, Direction du Commerce Interieure	Directeur Regional du Commerce
	Universelle de Produits Agricoles sarl	
Ba, Abdoulaye	Ets Mamadou Barry	Chief Accountant
Drame, P Elimane	Deli-Cajou	President
Martinez, Pastor Mario	LEAD International	
Bodian, Moustapha	PADERCA	Coordonnateur National
Wane, Alfouseiney	PADERCA	Responsable de Production
Diamacoune, Josef	Sengalene Open Air Processing	Proprietor
Sagna, Edouard	Unite de Transformation de la Noix de Cajou Karoghen Esukom de Djibonker	Proprietor
Diagne, Modou Marie	PROVAEC	Responsable de la Formation et suivi-evaluation
Diaoume, Ousmane	PROVAEC	Prestataire de Service
Konate, Abdoulaye	Association des Collecteurs d'Anacarde de la Casamance	Collector
Sene, Yahyah	ECOBANK	
Lo, Ibrahmi	GTZ	Assitant Technique
Goudiaby, Hamet keba	USAID	Assitant coordinateur Ziguinchor
Beye, Awa	GIE Beyecounda	President
Drame, P Elimane	SCPL	
Mansaly, Valentin	FAMVI	Secretary General
Djia, Issa		Planteur, Acheteur
Kamara, Moumoudou		Planteur, Transformateur
Papa Fall	Federation des Producteurs d. Anacarde de la Region de Kolda	President
Kao, Fernando	USAID Kolda	Coordinator
Wane, Seydou	Forum pour le Developpement Durable Endogene (FODDE)	Director
Diallo, Cheikh Daouda	PADEC	Director
Diallo, Boubacar	Wula Nafaa II	Assistant coordinator
Faye, Raphael	PROMER II	Director
Senghor, Fatou	Darsilami Soce Processing Facility	President
	Wassa	
Yande, Sarr	Association de Transformatrices de Sokone	President
Huchard, Hippolyte	Novasen s.a., Kaolack	Directeur d'Usine
Fall, Lt. Mandiere	Dept Eaux et Forets, Tivaouane	
Sowe, Lutti	Transformatrices de Cajou de Tienaba	President
Thiam, Makhtar	West Africa Trade Hub	Directeur
Dabo, Mamadou	Projet Croissance Economique	Export Value Chain Coordinator
Voisard, Jean-Michel	Projet Croissance Economique	Export Value Chain Director
Mbow, Cecile	APIX s.a.	Front Office
Fall, Cheikh Amadou Bamba	Novasen s.a., Dakar	Administrateur DG
Sagbo, Lydie K	Senar et Les Delices Lysa	Directrice
Links, Dr Rolf	GTZ PRODDEL	Directeur

Annex 6: Persons Met Gambia Cashew Mission (August – September 2010)

Name	Organisation	Position / Title
Mohan, Ram	Comafrique Ltd	Director
Yeager Sallah, Jo Anne	International Relief & Development, Gambia River Basin Cashew Enhancement Project	Country Director
Jassey, Kebba	International Relief & Development, Gambia River Basin Cashew Enhancement Project	Project Manager
Raghavan, Rammohan	Midas Commodities Ltd	Director
Iyer, Sreeram N	Little Star Gambia Ltd	Director
Dione, Lamane Sindokh	SGS	Country Director
Prajapati, Vipul	Asia Trading Enterprise	Director
Bah, Captain	Gambia Port Authority	Director
Demba, Bakary	Delmas	Sales
Basiley, Zachary	US Embassy Banjul	Political & Economic Officer
Savr, Isatou	Gambia Bureau of Statistics	
Tunkara, Momodou S	Gambia Bureau of Statistics	
Suso, Alpha	Gambia Bureau of Statistics	
Mistry, Kamlesh	Inter Agro	Director
Njie, Joseph Findin	Gambia Revenue Authority, Customs & Excise	Manager
Bojang, Amadou	Gambia Revenue Authority, Customs & Excise	Data Analyst
Gomez, Bernard Edward	Department of Water Resources	Assistant Director
Drammeh, Sait	Ministry of Agriculture, Department of Agriculture	Director General
van Rensburg, Albert	Maersk Line	Managing Director
Singh Parhar, Ravinder	International Commercial Bank (G) Ltd	CEO
Xavier, Arockiaraj	International Commercial Bank (G) Ltd	Head - Operations
Aswani, Doulat	Sara Trading	Director
Ceesay, Momodou A.	Gambia Horticultural Enterprises (GHE)	Managing Director
Jawneh, Musa	National Farmers' Platform The Gambia	President
Suwareh, Setti	National Cashew Farmers' Association	
Sanyang, Seedia	National Cashew Farmers' Association	
Sanyang, Alhagie Saituba	National Cashew Farmers' Association	
Jaiteh, Momodou	National Cashew Farmers' Association	
Mendy, Pierre	K Cashew Farmers' Association	
Sylva, Loule	K Cashew Farmers' Association	
Sambou, Ja bakary	K Cashew Farmers' Association	
Mendy, Charles	K Cashew Farmers' Association	
Mbaye, Khady	Farmers' Inter-Trade Association (FITA)	
Ndieeye, Army	Farmers' Inter-Trade Association (FITA)	
Manneh, Abba S.	National Coordinating Organisation for Farmer Association (NACOFAG)	President
Sowe, Alieu	National Coordinating Organisation for Farmer Association (NACOFAG)	National Coordinator
Darboe, Fanding		Cashew Collector
Ndiaye, Mareme Mbaye	Ecobank	Managing Director
Touray, Sana	Ecobank	Branches & Channels
Joof, Alhagie S		
Maneh, Kemo	Lower Nyumi Cashew & Fruit Growers' Association	
	Sammbollet Farmers Group	
	Njongone Farmers' Group	
Bah, Alieu K	Fass Njaga Choi	Local Cashew Facilitator
	Misranding Farmers' Group	
	Mbullum Farmers' Group	

Annex 7: Economic Metrics for Senegal and The Gambia

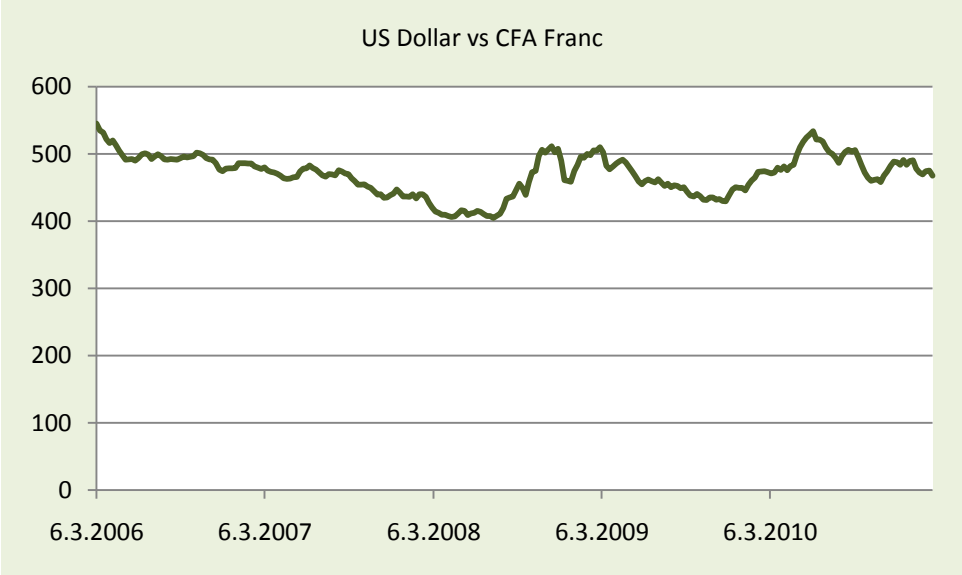
		Year	Unit	Senegal	Gambia	Source
Economy	Population	2010	Mn	12,86	1,76	World Bank
	GDP	2009	USD Mn	12.822	733,5	
	GDP per head	2009	USD/head	997	417	
	GDP Growth	2009	%	2,2	4,6	
	Life Expectancy	2009	Years	56	56	
	Poverty Ratio	2009	%	33,4	58	
	Human Development Index	2010	Rank (out of 183)	144	151	UNDP
Agriculture	Agriculture value added as a share of national GDP	2009	%	17	27	World Bank
	Arable Land (in production)	2009	ha/head	0,3	0,2	
	Rural Poulation/ Total	2009	%	57	43	
	Fertilizer consumption	2008	kg/ha	2,4	2,6	
Business Metrics	Ease of Doing Business	2011	Rank (out of 183)	152	146	www.doingbusiness.org
	Starting a business	2011	Rank (out of 183)	101	115	
	Getting credit	2011	Rank (out of 183)	152	138	
	Protecting investors	2011	Rank (out of 183)	167	173	
	Paying taxes	2011	Rank (out of 183)	170	176	
	Trading across borders	2011	Rank (out of 183)	67	87	
	Enforcing contracts	2011	Rank (out of 183)	148	67	
Agricultural Exports	Total Merchandise Exports	2008	USD mn	1.572	55	UN COMTRADE
	Total Agricultural Exports	2008	USD mn	187	33,5	
	Groundnuts	2008	USD mn	0,4	0,5	
	Groundnut oil	2008	USD mn	40	2,2	
	Grounnut cake	2008	USD mn	1,5	0	
	Sesame	2008	USD mn	1,2	1	
	Green Beans	2008	USD mn	13,3	0,3	
	Tomatoes	2008	USD mn	18	0	
	Mangoes	2008	USD mn	13,6	1,4	
	Cashew in-shell	2008	USD mn	4,8	26,7	
	Cashew shelled	2008	USD mn	3,2	0	

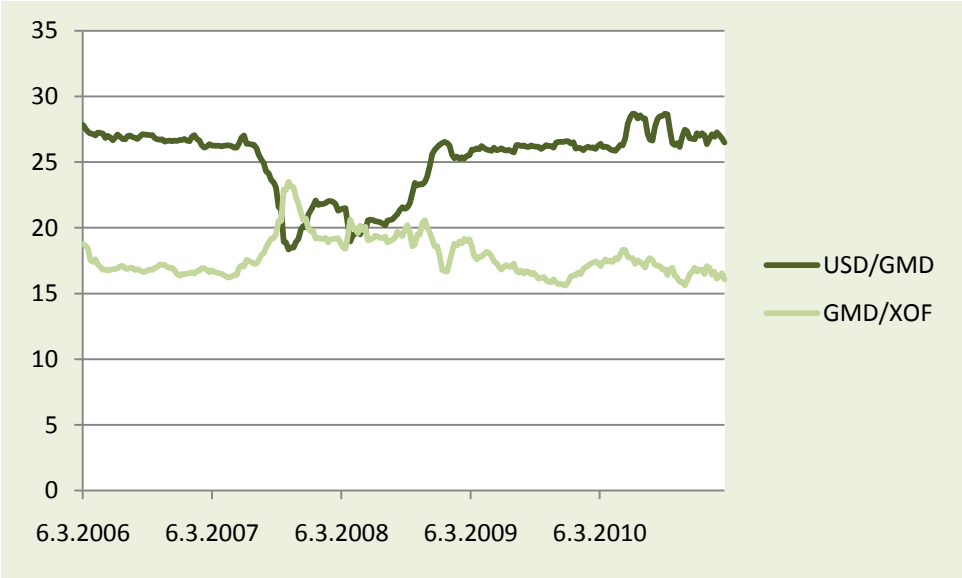
NOTE: For exports, global imports are used as a proxy since the declared export data is not reliable from The Gambia. The values of exports shown here are therefore cost and freight basis. 2008 data are used because of the high incidence of smuggling cashew into Gambia from Guinea Bissau in 2009.

Annex 8: Cashew Production Data for Senegal and The Gambia

Cashew Production Information		Senegal			The Gambia
		Tivaoune	Sokone	Casamance	
Raw cashew produced in 2010		1,000	1,000	24,000	9,000
Total number of cashew farmers		<2,000	<5,000	30-50,000	10-20,000
Average size of cashew smallholdings (ha)		<5	<5	<5	<5
Average size of farmer family		No data	No data	No data	No data
Raw cashew nut farm gate price USD/kg (2010)		450	450	450	450
Raw cashew nut FOB price (Banjul) USD/tonne (2010)					750
Average income of cashew family		No data	No data	No data	No data
Cashew related income of cashew farming family as a share of total income		No data	No data	No data	No data
Cashew intercropped with		Maize, millet, sorghum, cowpeas, groundnuts			
Other cash crops farmed		groundnuts, mangoes, citrus			
Harvest period		April to July			
Density of planting		Generally extensive with intercropping			
Annual tree productivity		No data	No data	No data	No data
Average age of trees		10-20	10-20	10-20	< 10
Inputs used for cashew farming		Hand tools, labour, bags			

Annex 9: Currencies





For this report the following rates, which were current in September 2010, are used:
1 USD = 28 GMD (Gambian Delasi)
1 USD = 500 CFA (XOF in the currency chart above)

Annex 10: Possible Upgrading Strategy

Vision and Potential Strategies

Our vision for cashew production in both The Gambia and Senegal is a flourishing sector built with businesses that are profitable, sustainable and able to respond effectively to change. In the course of the mission, we discussed the opportunities and constraints with many players along the value chain. Throughout, we found enthusiasm for the opportunities that lie in the production and commercialisation of cashew. While we discussed possibilities for efficiencies and improvements in the chain, the analysis and recommendations have been drawn up and presented after the mission rather than through finding consensus among those active in the industry. Simply put, there needs to be an engagement with the chain participants now that an overview is achieved. The revenue generation of cashew cultivation has a marked capability to improve the livelihoods of the rural poor. There are few alternatives.

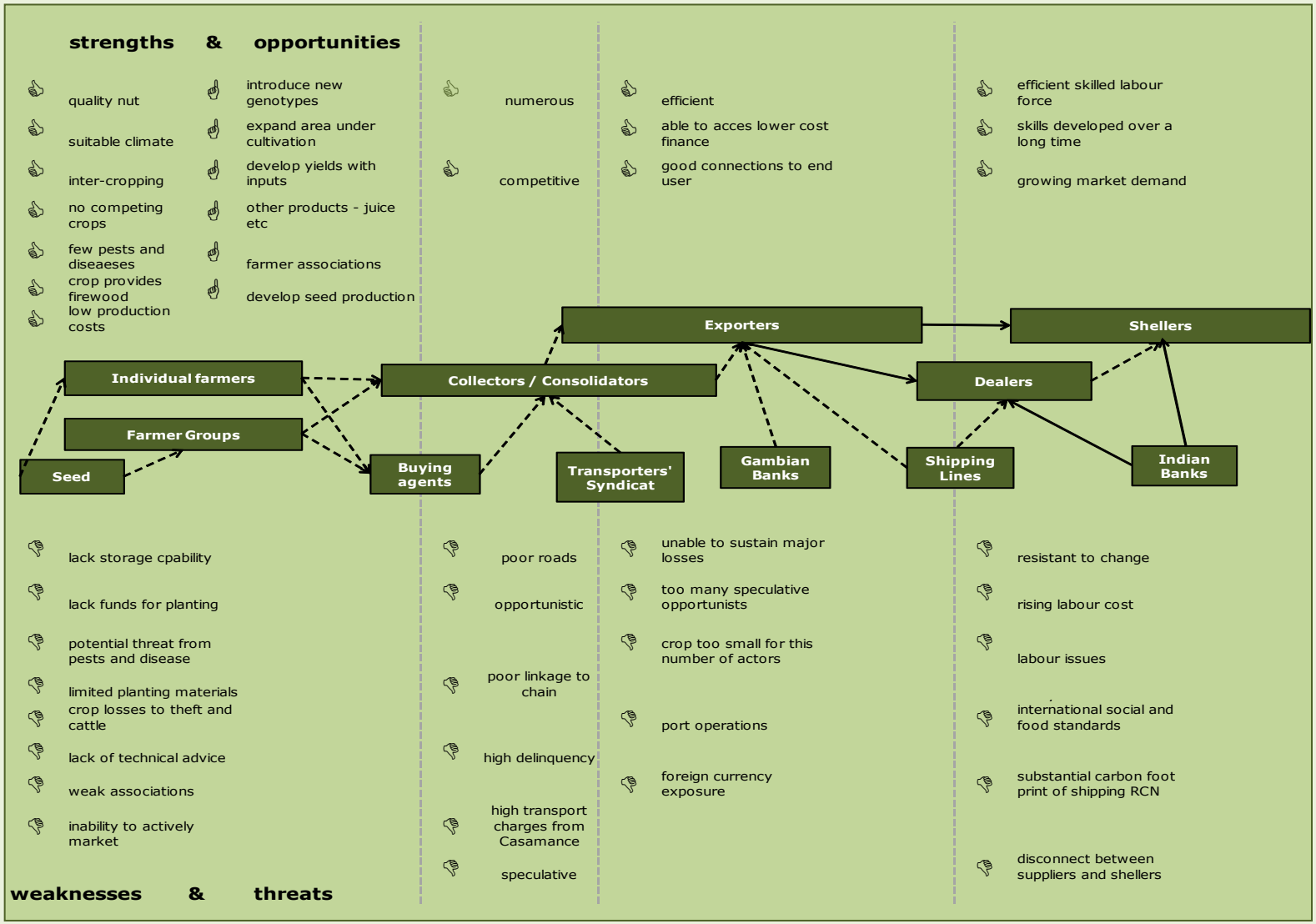
The cashew nuts of Sokone in Senegal and of The Gambia are of good quality and should be able to achieve premium prices compared to competing origins. This premium is rarely if ever captured as the higher quality nuts are used, through mixing, to raise the average quality criteria of inferior raw cashew nuts from other areas or indeed countries (Figure 4.2).

A joint strategy of expanding the supply and improving the quality management would capitalise on the potential for further production and on the quality of the nuts in the region. Acting in one country alone has the potential to increase the crop but, for The Gambia, until volumes are substantially higher, it will be difficult to get much direct interest from the end-users. A regional initiative should carry more weight.

Cashew processing is barely developed in the region, but it is already receiving significant attention. While the shelling and peeling operations of preparing cashew kernels can and do contribute meaningfully to a local community or a farm, in the broader picture of national production the numbers of players benefitting is relatively small. If cashew processing could be established, the economic gains are clear in value addition, foreign exchange, employment, and risk reduction, but despite these advantages none of the processing projects has clearly demonstrated financial viability and a return on investment. A new business model or new technology is needed before additional support is applied.

Cashew already makes a significant contribution to the rural economy and supports not only a large number of farming households with an income that is difficult to achieve elsewhere, but also a network of service providers. The trade of cashews not just from The Gambia but also the wider region is an import addition to the Gambian economy. There is little to be gained from routing the Casamance production through Dakar and the current arrangements work relatively well.

Annex 11: Opportunities and Constraints



Annex 12: Proposal of Operational Upgrading Objectives

Business Linkages and Partnerships

- **Seek a return for the quality available**. There are high quality nuts produced in the region. Mixing reduces the value overall.
- **Encourage direct marketing by farmers**. Although the marketing chains are relatively short, there are losses associated with the present system. As volumes grow the losses will represent an opportunity for the producers who can organise their own trucking and sell direct.
- **Connect larger collectors to the Indian market**. Similarly there is good reason for the larger collectors to deal directly with the Indian market.
- **Investigate and exploit opportunities in Vietnam.** India is not the only market for raw cashew nuts. The Vietnamese processing sector has outgrown the production capability and relies increasingly on imports. Some active marketing here would introduce further competition for the nuts.
- **Provide an alternative conduit for cashew nuts into the Indian market by means of an auction**. This could be tied to a warehousing scheme allowing producers to use their harvest as collateral

Service supply & demand

- **Marketing extension and market intelligence**. If more direct marketing is to be encouraged then a better understanding of markets will be needed.
- **New planting material introduction, quarantine, testing, multiplication.** It is critical that the production remains competitive not only in terms of producing high quality but also in productivity.
- **Plant protection unit**. The present situation of few pests of cashew in the region is unlikely to remain unchanged.
- **Seed producers.** As part of upgrading the tree stock.
- **Rural credit.** At present finance available to farmers is very limited.

Policies & Market Regulation

- **Information collection** – agronomic (land use, yields, harvests) and commercial (prices, exports)

Infrastructure

- **Port operations.** Although Banjul port is lower cost than some neighbouring ports any efficiencies here pass back to the farmer.

Possible Actors to Implement

- **Need for national trade associations**
- **Need for a regional umbrella organisation linking the Guinean, Senegalese and Gambian organisations**.
- **Government departments**
- **Needs to integrate with the exporters.** While the processing of cashews should be the ultimate aim, for the present and at least medium term the bulk of the cashews will be sold in-shell.
- **Collaborate with other projects, agencies and facilitators**. Table 1.1 indicated the range of project impacting on the cashew sector in Senegal.

Needs for Services in the Cashew Value Chain and Support Services

Roles and Responsibilities: Public, Private and Donor roles

Possible Entry & Exit Points

In Senegal, farmers and processors are well supported in Casamance by a number of donor projects. In The Gambia, CEP is working with a number of farmer groups but also covers Casamance[50]. In Sokone[51] and in Fatick, in Senegal, there is scope for further support at the primary producer level, but we understand that the GTZ Decentralisation of Government Project may be involved here.

Potential and Constraints for Strengthening Private Business Linkages: Vertical Collaboration: Supplier-buyer contracting

The existing mechanism for financing the commercialisation of the cashew relies on advances from the exporters to the collectors and their agents. This does not work well and every exporter is left short at the end of every season. One estimate for the current season suggests that the exporters have USD150,000 outstanding. In the bigger picture of the value of the total crop this may not be huge, but the exporter's margins are further trimmed and the cost is ultimately pushed back to the farmer.

One exporter has tried working directly with farmer associations and contracting them to supply. The experience was as bad as working with the collectors, and side selling spoiled the arrangement. Without an ability to enforce a contract the situation will not improve, so the initiative must work from the farmer upwards rather than the exporter downwards.

[50] The original intention was to include Guinea Bissau but this is suspended for the present.

[51] Projet integre de gestion des eco-systemes

Horizontal Collaboration

- Producer groups – there is a need for more producer groups particularly for provision of technical services but also for marketing opportunities. A number of the agencies are working on this aspect in both The Gambia and Senegal.
- Processor groups – the processors of Casamance already have their own association. The Plans at SPCL/Ely Bee will provide further linkage by buying the shelled, but not peeled nuts from other processors and developing a range of consumer-ready products.

Business Matchmaking

At present, there is only a limited need for matchmaking services: there are larger collectors who might work directly with India or Vietnam rather than through other links in the chain. There is however reason to encourage closer linkage between the end users and the trade in The Gambia and Senegal to improve understanding of the customers' requirements.

Among the farmer associations it is less a question of matchmaking and more a question of developing the ability to market the product actively

Alternative marketing arrangements in India and possibly Banjul, such as an auction, should also be investigated, not to replace the existing channels but to supplement them with a better price discovery mechanism and a means of establishing quality pricing.

Assessment of Lead Firms

The concept of a lead firm is important in the forward development of a value chain. The lead firm is an enterprise in the chain that can co-ordinate production and logistics along the chain in such a way that the overall competitiveness improves. They need to be close to the market such that they can transmit the requirements of the market back up the chain. They need to be innovative and capable of adding a professionalism that responds to the pull of the market and they need to have influence. It is also important that they are capable of collaborating with public assistance and so acting as a channel for support to the chain.

Lead firms are found among the Indian exporters based in Banjul. They provide the market that stimulates production and in some cases are involved directly with the producers are either co-ordinating supply or provide technical advice as well as inputs. They are the direct link between the production and the Indian market.

In Senegal the identification of a lead firm is clear. While the Banjul based Indian exporters are, of course, intimately involved in the south in buying the crop the lead firm should be local. Two enterprises suggest themselves: SCPL who are developing a processing capacity in Ziguinchor with the US NGO LEAD International, and the women's processing group in Thienaba in the north. Both are close to their markets, innovative, and professional and both show a willingness to invest.

Assessment of Typical fields of activity of a PPP

- Development of supply chains – all exporters are engaged in encouraging new supplies. A more structured approach could be recommended, in particular with the introduction of new genetic material as well as developing the husbandry appropriate to inter-cropping. The exporters are well placed to stimulate quality schemes if their customers require it: for example, separating out the Gambian nuts rather than mixing in the smaller eastern Casamance product.
- Development of Standards and codes of conduct – while contractual performance within the supply chain has been woefully absent this year, it is unlikely that a code of conduct would reduce the problem.
- Qualification of Service Providers – the liberalization of the transport from Ziguinchor to Banjul would introduce competition into the freight market and drive down prices. These savings could significantly improve returns upstream

Services in the Cashew Value Chain

Needs

1. Market Intelligence - There is a lack of market information at various steps in the marketing chain: producers reported that they did not know prices in the market, that they did not understand how prices were formed and that they did not know how otherwise they might sell their product except to the agent who visited from time to time. Equally the larger collectors would be in a position to sell to India but lack the market contacts to approach.
2. New Planting Material - The existing varieties, variously referred to as Costa Rican, Mozambique, Bissau without any consistency, grow well. In a rising market we can expect a continued good demand at least in the short to mid-term. But, in the longer term, the global cashew market will become more competitive and only the more efficient producers of the better quality nuts will keep their market share. Further, the possibility of pests or plant diseases arriving in the region should not be underestimated and access to new genetic material will be important.
3. Husbandry - The best practice for inter-cropping cashew needs to be understood to maximize the

returns per hectare.

4. Organization of Producers - There are a number of farmer groups operating but these account for only a small proportion of total farmer numbers. A number of agencies are tackling this issue.
5. Transportation - At present the *Syndicat de Transportateurs* controls all road freight leaving Ziguinchor and Kolda. The price of sending a truck to Banjul is undoubtedly higher than the free market rate. We understand that the USAID Croissance Economique project plans to investigate solutions here.

Possible Actions

- Provide training in marketing and price formation – this already features in some donor project interventions.
- Provide market price information during the season – it is difficult to make market news services sustainable as users are often reluctant to pay for the service and the continuation depends on outside funding.
- Establish a regional plant introduction, quarantine and multiplication service – an appropriate intervention when there is already much happening at the farmer level in southern Senegal.
- Work with the *Syndicat* to move away from a cartel arrangement, which usually results in lower revenues for the members of the *Syndicat* because there are more of them, towards a liberalized and competitive market.

Financing the Cashew Value Chain

Existing arrangements and opportunities

The current sources of finance available to the dealer/exporters include:

- Pre-financing by the buyers based in India
- Own funds
- Banjul-based textile or agri-product Importer funding, particularly where a subsidiary of the importer is involved in exporting
- Bank loans – not common as the cost is prohibitive (18-24%) and the banks averse to the risk.
- Bank discounting of invoices for product shipped.

Ecobank is well positioned now to support the cashew trade with branches in all the major cashew centres of the region. They are thus able to support Banjul based exporters and collectors who buy in Senegal. They are now also clearing documents in Banjul for exporters sending product out of Bissau port.

Funds are advanced by the exporters to the collector/consolidators who will either advance the funds to their own agents or buy direct from the farmers.

The arrangement has two significant areas of risk:

- Exchange rates – the exporters are selling in US dollars but buying either in Gambian Dalasi, which moves independently, or the CFA, which is tied to the Euro. Exporters have found the currency fluctuations since late 2007 particularly problematic.

- Counter-party – the advancing of funds into the chain of buyers relies heavily on relational trust. While there are written agreements confirming the advance, all the exporters, and indeed the collectors too, complain of side-selling along the chain, particularly in a rising market where there is a temptation to sell the crop purchased with funds of one exporter to another buyer. Without any reasonable ability to enforce these contracts, the exporters are obliged to write off the unfulfilled advances every year. The situation was particularly difficult in 2010 with higher than usual rate of delinquency caused by the rising market and a short crop.

This flow of funds reaches the farmer who is paid on purchase. Some collector/consolidators, however, have a close relationship with the farmers or villages and will provide credit through the year in rice or other foodstuffs for example. The credit may be repaid in cashew.

Processors currently rely on their own funds for purchases. Since most are severely under-capitalised their purchasing ability is quite limited.

The farmers and the processors suffer from an inability to access credit. The chain maps in Figures 4.1 and 2.2 here show how financing is provided quite far down the chain. At present, the farmers and farmer-groups have scant opportunity to obtain funds other than through the cashew chain. In Senegal, these issues are being addressed by some of the development work there. There may be an opportunity to work in The Gambia on rural credit either through village mutual societies[52] or through a wider agricultural credit bank.

The trust-based flow of funds through the purchasing system, and the losses incurred by the exporters from delinquent suppliers, is likely to remain a problem unless the farmers collaborate to build up a stock and then organise their own transport. We spoke with a large farmer group in Kolda, Senegal who was investigating the possibility of aggregating their joint production and making direct sales.

10,000 tonnes of additional raw cashew nut output would bring a further USD4.5mn into the rural economy

[52] Visacas in The Gambia or Mutuelles in Senegal

Improving the Business Environment of the Cashew Value Chain.

Support to Private Initiatives to Address Macro-Level Constraints

As noted above, there has been almost no central government recognition of the cashew value chain until recently in either Senegal or The Gambia. It is likely that this will change as the volumes grow and indeed there were a number of calls from interviewees in Ziguinchor for the government to intervene and regulate the sector. This somewhat surprising development reflects the chaotic trading conditions of 2010 as well as the sense that while the number of players in the commercialisation of the RCN is increasing, so is the disorder.

There are no strong associations providing industry-wide support that might interact with government on the various macro-constraints. In view of the size and rate of growth of the cashew industry, it is probably time to form a regional association linking Senegal and The Gambia and correlating public-private dialogue. National groupings might also be desirable, but a regional organisation, possibly including Guinea Bissau[53], would best represent the cross-border reality of the trade. This would also tie in with regional services such as plant introduction, multiplication and phytopathology.

Proposals for a Coherent Value Chain Promotion Policy

Cashew has an important role to play in improving rural incomes and poverty relief. As such, the importance of the crop should be recognised in the agricultural strategy and poverty relief strategy of central government. The impact of inferior roads on transaction costs and the delays and costs of inefficient port operations all result in lower value for the farmer.

The active promotion of larger investments in cashew is not needed as there are few economies of scale.

[53] Sometimes referred to by the trade as SeGaBi - Senegal, The Gambia and Guinea Bissau

Published by:

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

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