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VALUE CHAIN ASSESSMENT REPORT: CASHEW VALUE CHAIN

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TRADE HUB AND AFRICAN PARTNERS NETWORK

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The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID) or the United States Government.

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ACRONYMS

ACA	African Cashew Alliance
ACASEN	African Cashew Alliance Senegal
ACi	African Cashew Initiative
ACTE	Africa Competitiveness and Trade Expansion Initiative
CAG	Cashew Association of Gambia
CONEC	Benin's National Exporters Association
DFID	Department for International Development
ECOWAS	Economic Community of West African States
EPV	Export production village
EU	European Union
FAO	Food and Agriculture Organization
FOB	Free-on-board
FTF	Feed the Future
GIZ	German Society for International Cooperation
ha	Hectare
IFAD	International Fund for Agricultural Development
kg	Kilogram
LBAs	Local buying agents
mt	Metric ton
NCAN	National Cashew Association of Nigeria
NGO	Nongovernmental organization
RCN	Raw cashew nuts
SWOT	Strengths, weakness, opportunities, and threats
USAID	United States Agency for International Development
VC	Value chain
WATH	West Africa Trade Hub Project

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1. INTRODUCTION AND BACKGROUND

1.1. CASHEW VALUE CHAIN

This report focuses on the cashew value chain (VC) in the West Africa region, within the framework of newly launched Trade Hub Network and African Partners Network. It summarizes the current structure, competitiveness, socio-economic importance, and dynamics of the cashew value chain in the region. The report briefly describes the key challenges and growth options facing the value chain, and suggests strategic directions that will lead to sustainable growth and competitive upgrading of the value chain, enabling West Africa to emerge as a leading global producer, supplier, and marketer of raw and processed cashew nuts.

1.2. VALUE CHAIN ASSESSMENT

Following the submission of a Value Chain Selection Report, the Trade Hub is producing a set of Value Chain Assessment Reports. During May 2014, the project carried out assessments of each value chain that the selection report recommended for targeted support from the Trade Hub.[1] The assessments are the second step in planning activities for the project.

The Value Chain Selection Reports provide brief overviews of each value chain; the Assessment Reports offer deeper perspectives about the current status, structure, performance, and challenges of the value chain. They update previously available information where possible. Based on this information and analysis, they recommend a vision and upgrading strategy for each value chain, and outline possible support roles for the Trade Hub in helping value chain stakeholders achieve their strategy.

As the first opportunity for the Trade Hub team to resume interacting with industry stakeholders and to begin identifying lead firms and areas where the project can have a positive impact, the value chain selection and assessment process also provides an initial basis for dialogue, brainstorming, and planning with key sector and value chain stakeholders. This phase, nonetheless, provides only a brief glimpse of each value chain and serves as a vehicle to commence discussion and idea-sharing with partners. Given the limited time that was available for this process, the assessments do not constitute detailed value chain analyses.

1.3. ABOUT THE TRADE HUB AND AFRICAN PARTNERS NETWORK

USAID/West Africa's strategic goal is to support the emergence of a politically stable and economically prosperous West Africa. The Trade Hub's goals are to promote increased regional trade in key agricultural commodities (a goal of Feed the Future, or FTF) and to reduce poverty through value-added exports (a goal of the Africa Competitiveness and Trade Expansion Initiative, known as ACTE).

The overall objective of the Trade Hub and African Partners Network is to increase Africa's share of world trade by increasing exports at a faster rate than the rate of growth in overall trade, and by improving West Africa's international private sector competitiveness in targeted value chains other than extractive industries.

The project will achieve two intermediate results: 1) improve the private sector capacity of the region's farmers and firms by addressing constraints to targeted value chains; and 2) improve the business enabling environment by addressing economy-wide constraints such as the transport and trade barriers that affect the efficiency of the region's ports, corridors, and borders.

At its heart, USAID/West Africa's Trade Hub and African Partners Network is a capacity building effort that will entail working with several key groups of African partners. The project's focus will be on developing associations and regional alliances that can act independently from donor support and take on a greater leadership role in promoting reforms, attracting buyers and investors, and adopting improved practices. The project will also work with individual companies that have a regional scope and could serve as lead firms in targeted value chains.

The Trade Hub will achieve its objectives by improving the private sector competitiveness of certain value chains. Based on the initial assessments made in USAID/West Africa's Feed the Future Multi-Year Strategic Plan, five value chains were pre-selected for the project: rice, maize, millet/sorghum, livestock (cattle), and livestock (sheep and goats). They were selected based on the following criteria: importance to intra-regional trade, high potential for value addition, production by a large number of stakeholders, and synergies with other supported value chains.

The Trade Hub team also examined the development potential of a number of value-added value chains and selected several for possible inclusion in the project's portfolio. This selection was based on six high-level criteria:

1. Potential to increase trade
2. Potential to create jobs
3. Potential to attract investments (including from the U.S.)
4. Number of households participating
5. Extent of geographic dispersal in West Africa
6. Current level of exports to global markets

The assessment phase thus focuses on the following short list of value chains:

FTF Regional value chains:

- Maize
- Millet-Sorghum
- Rice
- Cattle
- Small ruminants

Value-added Global value chains:[2]

- Apparel
- Cashew
- Honey
- Mango (and possibly other cut fruits/vegetables)
- Sesame
- Shea

[2] The home décor value and fashion chain was handled differently. Only a limited Trade Hub initiative is recommended for home décor and fashion. An assessment was not conducted for this value chain, since it was no longer considered for a core Trade Hub focus.

West Africa is on the verge of a transformative change—if it can create a new dynamic for intra-regional and export trade. At present, intra-regional trade is inefficient, characterized by unpredictable distortions and uncompetitive practices, and subject to overly restrictive regulatory regimes. West African exports have limited success in the global marketplace due to poor quality, inconsistent supply, and high delivery prices, which can be traced back to the absence of economies of scale, high transaction costs, and a poor enabling environment.

The Trade Hub and African Partners Network aims to promote broader, more sustainable growth by improving both private sector capacity and the policies, rules, and practices that govern regional and external trade. This will achieve sustainable and measurable increases in regional and international exports, jobs, and investment by strengthening vertical and horizontal integration within value chains, assisting representative associations to become more effective and inclusive, and improving the enabling environment for trade. The project will also mount a cross-cutting effort to increase the professionalism of all major participants by providing role-specific competency training, facilitating access to modern technologies, and improving market linkages. The Trade Hub will:

- **Leverage and strengthen already-identified or new private sector and public sector partnerships for commercial and development activities.**
- **Target the highest-impact opportunities in the value chains and policy regimes, to alleviate specific constraints hindering private sector growth.** The cornerstone of our structured approach to value chain development is identifying, in collaboration with our for-profit value chain partners and our public and nongovernmental organization (NGO) partners, where high-impact change can be achieved to maximize the return on project resources. Our trade and transport enabling environment staff will target specific policy and regulatory constraints which, once changed, will open up regional and external markets, reduce seasonal blockages, lower supply chain friction, and encourage trade-based investment and growth. They will work closely with stakeholders to advocate and enforce reforms.

The Trade Hub's higher-level results targets are summarized in Table 1 below.

Table 1: Highest Outcome-Level Results

Results	Through Year 3	Through Year 5
Increase in the value of global and regional transactions, on average, in targeted sectors of livestock, grains, and value-added products in West Africa	30%	50%
Creation of new jobs in Trade Hub-assisted West African firms	15,000	23,000
Facilitation of new investment in targeted sectors	$62.5m	$102.5m

Because different partners have different needs and levels of maturity, the project will tailor upgrading activities to each partner. We have recommended and will select value chains that offer opportunities to substantially contribute to achieving these objectives. We will choose value chains that can benefit from Trade Hub-supported activities such as:

- Improved buyer-seller intermediation
- Expanded use of grades and standards
- Increased access to and use of market information
- Increased access to and use of financial services
- More competitive transport and logistics enabling environment
- Reduced legal and regulatory barriers to trade

2. METHODOLOGY

Value chain assessment is the second of three phases that will lead to agreement on the Trade Hub's target value chains:

1. Phase I: Select (recommend) value-added value chains
2. Phase II: Assess selected value chains
3. Phase III: Vet and obtain feedback, leading to confirmed selection

Eleven separate Value Chain Assessment Reports—one for each value chain—present the results of the project's assessments.

As part of the research for the assessment reports, subject matter experts collected and updated data and trend information relevant to each of the value chains. The value chain assessments use a common set of criteria to describe the short-listed value chains and update information about them. In contrast to the selection process, which used subjective measures of only certain criteria based on expert opinion, the assessment process utilized the full set of criteria, quantifying them as much as possible. Based on this analysis, the reports discuss strategic approaches that could be supported by the Trade Hub to achieve the value chain's vision.

Existing value chain studies and their conclusions were strongly considered in the assessments; the Trade Hub team held meetings and phone/Internet discussions with knowledgeable stakeholders.[3] The assessment team also began to analyze and discuss with stakeholders the opportunities and challenges facing each value chain and to make initial proposals for an upgrading strategy. If the stakeholders and the Trade Hub are able to identify a clear path for upgrading the value chain, it is more likely that the value chain will be ultimately included in the project's set of focus value chains.

2.1. VALUE CHAIN ASSESSMENT PROCESS AND SUBSEQUENT STEPS

Table 2: Steps in Value Chain Assessment and Final Selection

Task	Method
Assess short-listed value chains	Assess the five preselected value chains and the other short-listed value chains against a full set of criteria through desk studies, review of existing value chains studies, and key informant interviews with members of partner network
Obtain USAID/West Africa's feedback on Value Chain Selection Report	Review Value Chain Selection Report; meet with Value Chain Development Specialist and value chain team
Submit Value Chain Assessment Reports	Assess all VCs, obtaining data and information through value chain studies, desk research, and key informant interviews; include discussion of potential value chain vision, upgrading strategy, and Trade Hub interventions

[3] Given time constraints, we did not collect primary market data from the field or hold extensive interviews with a full roster of key informants.

Task	Method
Prepare facilitation guide for value chain stakeholder vetting	Based on the assessments, prepare summary presentation and process for vetting value chains
Vet value chain selection and assessment with stakeholders	Hold session within Project Partners Kick-off Workshop with Trade Hub stakeholders
Refine value chain selection and assessment, based on stakeholder feedback and suggestions	Continue interacting with key stakeholders and USAID as needed

The final selection will only take place after the official Project Launch event, which will take place on or shortly after July 15, 2014. Immediately following the Launch the Project will engage individual value chain partners to discuss and vet the Assessments and come to a common vision of the value chain and how the Project will work with them. The final action plans for each value chain will be set after the engagement meetings, and will take into account the stakeholder feedback.

2.2. SOURCES OF INFORMATION

The team obtained data and information for this value chain assessment through:

- Desk research of value chain analyses, studies, reports and web-based material, including reports and information available through the African Cashew Alliance (ACA) and the African Cashew Initiative (ACi) (See Annex 1)
- Meetings and interviews with key stakeholders in Ghana (farmers, farmer organizations, processors, end-users, consultants, partner organizations) from April 30 to May 17, 2014
- Phone calls, Skype conversations, and interviews with members of the partner network and other stakeholders in Senegal, Gambia, Benin, Nigeria, and Burkina Faso (See Annex 2)
- Quick email surveys with value chain players in several countries

2.3. DATA LIMITATIONS

The assessment was carried out within a very short period of time and with limited field visits (in Ghana only). The available time did not permit substantial collection of primary market data or extensive interviews with key informants.

The 11 cashew-producing countries in West Africa comprise a vast region with a population of around 300 million. About 6.3 million households[4] are directly or indirectly economically connected to the cashew value chain. Value chain specifics, including information on production practices, prices, factor costs, market characteristics, and distribution channels vary from country to country. It would be challenging to obtain robust data and information from the 11 countries. The information and findings discussed in this report are based on information that could be collected during the short assessment period, and on the personal experience of the author. Every attempt has been made to obtain the most essential information for understanding the value chain and to enable the stakeholders and the Trade Hub to develop priority decisions and strategies.

[4] ACA estimates

3. DESCRIPTION OF THE VALUE CHAIN

3.1. PRODUCTS INCLUDED IN THE VALUE CHAIN

Given the current status of the industry, the cashew value chain products included in this assessment are mainly:

1. Raw cashew nuts (RCN), also known as shelled cashew nuts
2. Processed cashew kernels

There may also be a possibility to facilitate the development of value-added products from cashew apple. A fourth product, cashew nut shell liquid, which is mainly produced in large cashew processing countries such as India, is not considered in this analysis.

3.1.1. RAW CASHEW NUTS (SHELLED CASHEW NUTS)

Raw cashew nuts are currently mainly for export, with only a limited quantity being locally processed. RCN are produced by subsistence or commercial farmers and are directly harvested, sorted, and dried initially at the farm or household level, and sometimes bagged. Then the nuts are supplied to different buying channels.

The marketing channel includes supply to local buying agents (LBAs) or aggregators (collectors), or directly to exporters' agents. Exporters' agents are wholesale or semi-wholesale dealers who supply to local or (typically) Indian exporters. Value addition comes through harvesting, drying, and packing the nuts in jute bags. The exporters, after controlling for quality through their own agents, dry and re-bag the nuts and ship to international buyers, mainly in India. Quality control, drying, grading, and bagging before shipping are key operations. The Indian buyers have their own agents in the country during the harvest season. RCN exporting operations are seasonal, generally from February to August in West Africa, with country-level variations in timing.

Prices of the nuts vary at every level and by country. The 2014 free-on-board (FOB) price reported by exporters is typically $800 to $1,100 per metric ton (mt). On this basis, with a low estimate of production at one million mt, the value of West Africa's export of nuts with shells is about $975 million (at an average value of $975 per metric ton).

3.1.2. PROCESSED CASHEW KERNELS

Cashew kernels are locally produced at the household level using artisanal methods and by small-scale and industrial-scale processors. Some operations are simply a form of primary processing, only extracting the kernel by shelling the nut. There are also some secondary processing activities, ranging from roasting to various other forms of downstream value addition, and some packaging in bulk for retail sale. The value addition at primary processing is estimated to be around 20 to 30 percent above the value per ton of raw nuts.

The recent introduction of a shelling machine originating from Sri Lanka has revolutionized the potential for local processing. In place of hand-shelling the cashew nuts, an electrically powered shelling machine

can now de-shell more than 30 to 40 kilograms (kgs) per hour. Processors in several countries have started using this machine and it is now manufactured in India and Vietnam.

The locally processed nuts are sold in a variety of markets. Many street vendors sell processed nuts in urban centers (a common practice in Nigeria and Senegal). Production from industrial units is also available at retail shops and supermarkets. However, production from organized industries is mainly exported. Cashews are not a traditional part of African diets; therefore the local market for cashews is quite limited.

3.1.3. CASHEW APPLE AND ITS BY-PRODUCTS

The cashew apple is not widely used or consumed in Africa. It is used locally in some countries (notably Guinea Bissau) to make a beverage. Cashew apple is also used to make jams, juices, and fermented products at a small-scale level. Asian and Latin American countries, however, widely produce juice and other products from the cashew apple. Following a successful pilot trial, a proposal is being developed for commercial production of cashew apple juice with assistance from Technoserve.

3.2. VALUE CHAIN MAP AND PRODUCT FLOW

The cashew value chain is straightforward. The product changes hands several times along the value chain, from primary production to end markets. Table 3 lists these operations.

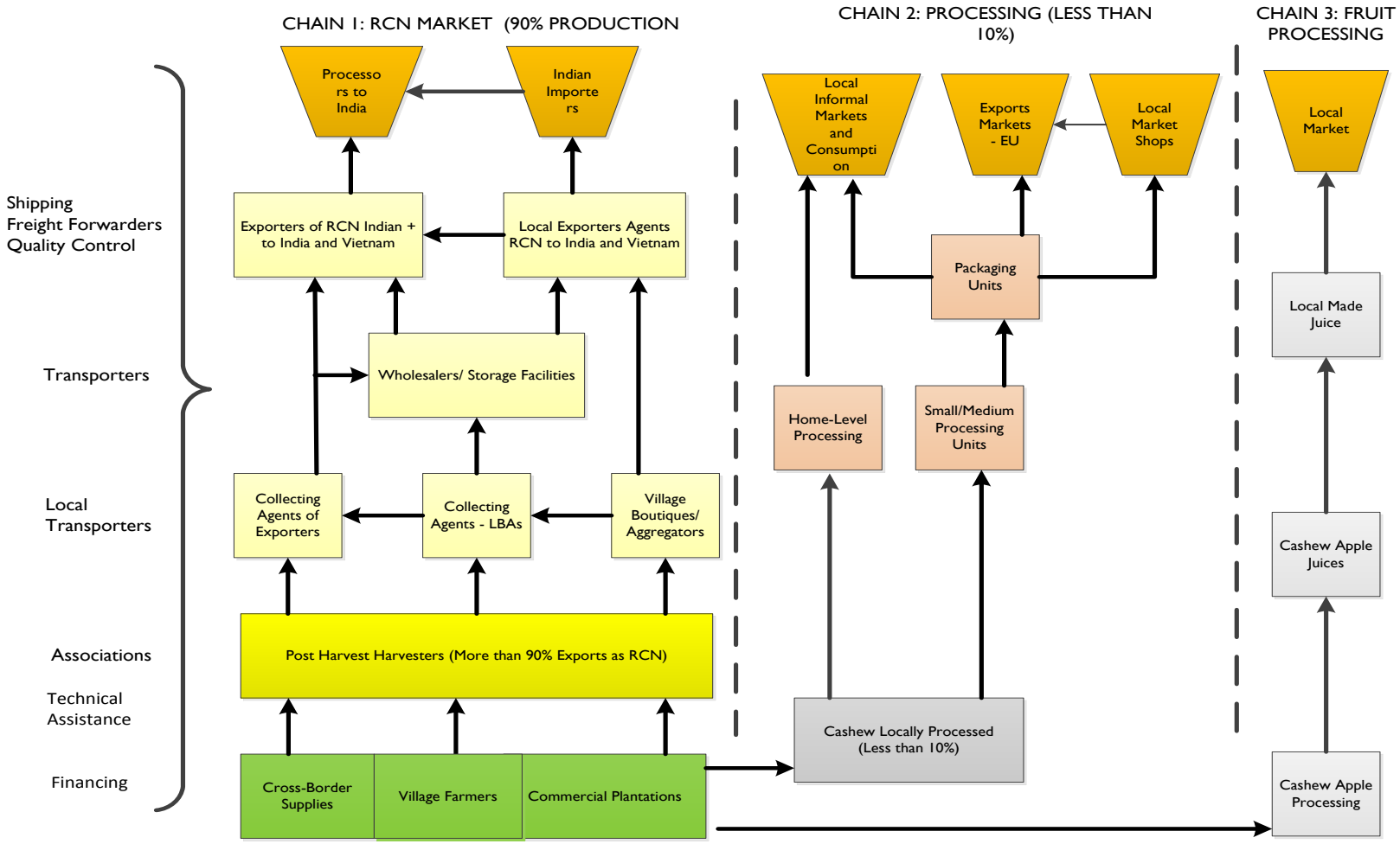
Table 3: Cashew Value Chain Product Flow

Value Chain Actor	Operation
Primary production-level/supply-level farmers	• Production for subsistence and commercial cross-border trade • Imports from neighboring countries
RCN sellers in local markets	• Sales in local markets through LBAs or wholesalers to exporters/processors directly or through their agents
Suppliers of RCN for exports	• Exports by Asian or local exporters agents /wholesale dealers • Supplies to processors
Exporters—Asians and locals	• Exports to India and Vietnam
Producers—nuts processing chain	• Sales by traders, buyers, or processors—exports/local market
Producers—cashew apples processing	• Local processing for local and domestic market

The RCN generally flow from farmers to exporters, either directly from farmers to exporters or through intermediaries, and—in the case of processing—to the processor. Cross-border trade is significant in West Africa.

Until recently, RCN from Côte d'Ivoire crossed the border, often unofficially, to exporters and processors in Ghana. Based on this flow, several local and foreign companies invested in processing units and storage facilities in Ghana. Until recently, RCN exports from Ghana were greater than local production. After the recent Ivoirian ban on cross-border cashew exports, these Ghana-based investors face difficulties. Production from Senegal crosses to Gambia to be exported from the Banjul port. Similar situations are common in many West African cashew-producing countries. The value chain map in Figure 1 shows these operations.

Figure 1: Cashew Value Chain Map[5]



[5] Based on work done by Dr. Patrick Nugawela from 2006 to 2014 on cashews in Senegal, Gambia, Nigeria, and Ghana.

3.3. CASHEW DATA AND INFORMATION

3.3.1. RAW CASHEW NUT PRODUCTION AND WEST AFRICAN SHARE OF GLOBAL PRODUCTION

The statistics on world cashew production vary among sources. The data in Annex 4, which is based on data from the Food and Agriculture Organization (FAO) and adjusted with data collected from several countries, suggests a global production of 2.8 million mt of RCN. Some other sources, including unpublished data from TechnoServe in Ghana, the ACA, and other organizations, suggest a global production of around 2.4 million metric tons.

West African production is estimated at about one million mt (based on FAO and adjusted data). Other sources suggest production of about 940,000 metric tons. In the context of this analysis, the West African share of RCN in global world production is considered to be 35 percent to 40 percent.

The table below indicates that Asia accounts for 47 percent and West Africa for 38 percent of world RCN production. However, considering recent production declines in Vietnam and in Latin American countries, West African RCN production is gaining importance in the international RCN market. More than 90 percent of West African cashew production is exported as RCN to India and Vietnam.

Table 4: World Cashew Nuts Production—Share by Region

Region/Country	2011	2012	2012 (%)
Asia Cambodia, India, Indonesia, Philippines, Sri Lanka, Thailand, Vietnam, others	1,137	1,151	47%
West Africa Benin, Ghana, Bissau, Côte d'Ivoire, Burkina Faso, Nigeria, Senegal, Togo, Gambia, others	818	941	38%
East and Southern Africa Kenya, Madagascar, Mozambique, Tanzania	247	222	9%
Latin America Brazil, Peru, others	162	143	6%
Total Production	**2,364**	**2,457**	**100**

Source: TechnoServe, May 2014S

3.3.2. RCN PRODUCTION BY WEST AFRICAN COUNTRIES

Table 5 below shows the production of cashew nuts by each of the 11 West African cashew-producing countries. The production of nuts in the region is almost one million metric tons; Côte d'Ivoire accounts for 45 percent of the total. The region's production covers a cultivated area of around two million hectares (FAO). According to ACA data, more than 6.3 million household economies rely in whole or in part on cashew production (see Annex 6). ACA data indicates that for every ton of cashews produced in West Africa, an average of six to seven households receive income.

Table 5: Production of Cashew Nuts with Shell, ECOWAS Countries

Countries	2011 (mt)	2011 (Percent)	2012 (mt)	2012 (Percent)
Côte d'Ivoire	393,000	42	450,000	45
Benin	162,986	17	170,000	17
Guinea Bissau	128,684	14	130,000	13
Nigeria	99,120	11	99,120	10
Burkina Faso	45,000	5	45,000	4
Senegal	38,000	4	38,000	4
Ghana	35,736	4	36,500	4
Gambia	12,500	1	12,500	1
Guinea	8,458	1	8,500	1
Togo	6,700	1	6,800	1
Mali	5,000	1	5,000	0
Production (total)	**935,184**	**100**	**1,001,420**	**100**

Source: Amended FAO data (Annex 5)

3.3.3. RCN PRODUCTION YIELDS

The yield per hectare in West Africa is reported to be in the range of 300 to 600 kgs per hectare. Taking into consideration the area cultivated (two million hectares) and 2012 production estimates of one million mt, the average yield is around 500 kgs per hectare (see Annex 5). Yields in West Africa are relatively low compared with cashew productivity in India and Vietnam.

3.3.4. PROCESSING OF CASHEW NUTS IN WEST AFRICAN COUNTRIES

West African countries' local value addition through processing of RCN is still low. The processing capacity of 41 known units accounts for about 117,450 mt[6] (or about 12 percent) of RCN production.[7] The overall processing of cashew nuts locally is less than 10% of the total CRN production of the region, and the effective utilization installed capacity is also low. In Ghana, 36% of production is processed locally, Nigeria (22 percent), Burkina Faso (12 percent), Côte d'Ivoire (8 percent), and Benin (5 percent). However, the Trade Hub team's research suggests that new investors are interested in processing and that at least one large new production unit is under construction.

A larger portion of locally processed cashews are exported to the European Union (EU), and some quantities are regionally marketed. Gambia imports from Senegal, especially for the market in the tourism industry.

[6] Source: TechnoServe

[7] Source: TechnoServe

In other countries (such as Vietnam) the processing sector is an important source of off-farm employment, particularly for women. The existing processing units in West Africa employ 14,700 people; 11,500 of them (78 percent)[8] are women (see Annex 7).

3.3.5. PRICES AND PROFIT MARGINS

The prices and margins for actors in the value chain vary considerably. Table 6 below summarizes prices and gross margins in the raw nut trade in 2014, based on a quick survey carried out in April and May 2014 with traders and exporters in three countries.

Table 6: Prices and Margins in the Cashew Value Chain, 2014

Actor	Role in the Value Chain	Cost/Buy Price ($ per mt)	Selling Price ($/mt)	Margin—Gross (per mt)
Farmers	Production of raw nuts		600–700	Seasonal income
LBAs/traders	Transport, aggregation	600–700	660–800	60–100 (12%–14%)
Wholesale dealers	Supply to exporters	660–800	700–850	40–50 (6%–10%)
Suppliers of raw nuts for export	Export of raw nuts	700–850	800–1,100	100– 250 (14%–28%)

Source: Author's surveys with selected actors in three countries in April and May 2014

3.3.6. KEY INDICATORS OF THE ACTUAL STATUS OF THE CASHEW VALUE CHAIN IN WEST AFRICA

Table 7: Key Indicators of the Cashew Sector in West African Countries

Cashew-producing countries in West Africa	11 countries[9] —90% dominated by four countries: Côte d'Ivoire, Guinea Bissau, Nigeria, and Benin
Regional production—volume	One million mt (2012) (FAO data, adjusted)
Regional production—percent of world total	35 to 40% of RCN
Share of RCN exported	90%
Share of production locally processed	Less than 10%
Potential capacity installed for processing	More than 12%
Yields	300–600 kgs/ha
Status and quality of supply of raw materials (RCN)	Sustainable and good quality
Number of participating households	6.3 million households (ACA estimates) Six to seven households per ton
Value of West African cashew production (RCN)	More than $975 million per year (based on 2014 estimated average FOB prices)
Price received per mt of RCN (est. 2014)[10]	$800 to $1100

[8] ACA data

[9] Côte d'Ivoire, Benin, Guinea Bissau, Nigeria, Burkina Faso, Senegal, Ghana, Gambia, Guinea, Togo, Mali

3.4. MAIN ACTORS IN THE VALUE CHAIN

The relationships among vertical actors in the value chain are established and they are known to stakeholders. The general categories of actors in the value chain are:

- Subsistence and commercial-scale farmer/producers
- Collectors known as local buying agents (LBAs)
- Local village groceries shops, which in some countries play the role of local aggregators
- Small traders, semi-wholesale and wholesale dealers
- Exporters of raw nuts, typically Indians, but also local exporters who have established market links with foreign buyers in Vietnam and India
- Thousands of other formal and informal microenterprises, small enterprises, and individuals who provide services (e.g., transporters, inputs and logistics suppliers)
- Processors:
    - Domestic-level artisanal processors
    - Small processing units[11]
    - Medium and large formal processing enterprises[12]
- Retailers, including street vendors, retail shops, and supermarkets

3.4.1. DESCRIPTION OF THE VALUE CHAIN ACTORS

3.4.1.1. Lead Firms

There are number of lead firms in the region engaged in RCN purchases and processing. In all the cashew-processing countries in the region, there are a few companies that purchase RCN for exports and some that process nuts locally. Ghana alone has more than 41 companies licensed for the cashew trade. Based on the data from Ghana, there are probably several hundred cashew traders in the region. Local companies in every country are engaged in the commodity trade, and most of them are members of the ACA or local associations of cashew actors.

In addition, seasonal buyers come from India and elsewhere and engage in large-scale buying of RCN. They have their own or hired storage facilities. They buy nuts from licensed buyers, or have their own buying centers in the regions. Before the cashew season starts, exporters usually make arrangements with a few LBAs in different locations to assist in sourcing the commodity. Trusted and reliable LBAs are given cash advances for procurements. Olam Nigeria Limited is the largest exporter of cashew in several countries in the region, including Nigeria, Ghana, Côte d'Ivoire, Senegal, and Benin.

There are many small processors throughout the region, and about 41 established medium- and large-scale processing operations. In Ghana, a foreign investor—USIBRA Co.—is constructing a large (35,000 mt capacity) processing unit. Annex 7 lists processing companies assisted by ACA, by country. **Error! Reference source not found.** shows the main processing companies in the region.

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[10] Based on a rapid survey carried out in May 2014 in the region

[11] A study by the West Africa Trade Hub (WATH) project recorded more than 68 small processors in the region.

[12] Technoserve records 41.

Table 8: List of Cashew Processors by Country

Country	Processors
Benin	1) Nad & Co, 2) SITAB, 3)Tolaro Global
Burkina Faso	1) Anatrans, 2) Sotria-B
Côte d'Ivoire	1) Olam, 2) SITA
Ghana	1) Mim Cashew, 2) Rajkumar
Guinea Bissau	1) CPC Processors, 2) Djonde Ltd, 3) Sicaju/Agribissau
Guinea	1) SAI
Nigeria	1) ACET, 2) Food Pro, 3) Matnad, 4) Olam
Senegal	1) SCPL, 2) Cajou Casamance, 3) IRD Processors Sne
Gambia	1) Cashew Gam Company, 2) IRD Processors
Togo	1) Cajou Espoir Tchamba, 2) Cajou Espoir Blitta

3.4.1.2. Micro-, Small, and Medium Enterprises

The cashew value chain offers opportunities for a large number of micro-, small and medium-sized enterprises (MSMEs) to operate and develop in a well-functioning value chain. MSMEs operate in the following activities:

- LBAs—aggregators of cashews
- Transporters
- Storage facilities maintenance
- Traders—semi-wholesalers, wholesalers, and suppliers
- Logistics suppliers—jute bags
- Service providers to cashew processors—maintenance of machines, fabrication of small machines

The cashew sector provides seasonal on-farm employment to farmers. Each household becomes an informal micro-enterprise, carrying out harvesting and post-harvest operations during the season. In addition, a large number of traders (typically informal MSMEs) participate in the sector. Many small businesses earn income within the chain, including transporters, suppliers of bags and other logistics, small processors, street vendors, and retail traders.

Countries such as Sri Lanka have developed export production villages (EPVs) in cashew processing. This model consists of villages that participate in drying, peeling, or de-shelling nuts and supplying them to lead firms who do the finishing and packaging. In this model every household in the EPV is a processing micro-enterprise that supplies the export processor.

3.4.1.3. Other Actors and Stakeholders

The cashew value chain has increasingly become a dynamic income-generator over the past few years, as a result of several mechanisms, including:

1. *Private investment.* There is a flow of private investment in the cashew processing sector in West African countries.

2. *The ACA.* The ACA provides a platform for the cashew sector, covering all the cashew-producing countries in Africa. Members receive information, assistance, networking, and technical support.
3. *The ACi.* This organization delivers technical assistance in production and processing, mainly at the farmer level, in several countries in the region.
4. *Public sector supporting institutions.* These include Côte d'Ivoire's Cotton and Cashew Development Board.
5. *Supportive national-level associations.* All the cashew-producing countries have national associations, such as Ghana's Processors and Exporters Association, the National Cashew Association of Nigeria (NCAN), Burkina Faso's Regional Farmer Association, and Benin's National Exporters Association (CONEC) (see Annex 3).
6. *Technical assistance.* USAID and several other donor-supported initiatives—including the German Society for International Cooperation (GIZ), the UK's Department for International Development (DFID), and the International Fund for Agricultural Development (IFAD)—provide continuing technical assistance.
7. *NGOs.* The cashew sector in West Africa has attracted a large number of NGOs due to its socio-economic impact. The NGOs promote the sector to produce fair trade and organic products for export and to create employment.

3.4.2. RELATIONSHIPS BETWEEN KEY ACTORS

West Africa's cashew sector has benefited from a value chain-based approach for development. Many technical assistance programs are being implemented with participation by value chain actors and stakeholders. These value chain actors and stakeholders are well-aware of the "rules of the game" and of the roles of each stakeholder. Some exporters and processors have established their own centers and buying agents to link with farmers and LBAs to purchase RCN. There is increasing interest in forming actors' associations, and many stakeholders are becoming members of regional organizations such as the ACA.

3.4.3. OPPORTUNITIES AND ISSUES

3.4.3.1. Opportunities

Cashew is a growing value chain in nine of the 15 ECOWAS countries. The region represents 35 to 40 percent of world production of cashews, and Côte d'Ivoire is the second-largest RCN producer in the world (after India). The region includes the three largest RCN-exporting countries in the world: Côte d'Ivoire, Guinea Bissau, and Benin. Cashew production in West Africa is increasing; the product is good-quality and there is a sustainable supply. For all these reasons, the sector offers several opportunities. The most important are:

1. *Potential exports of raw nuts.* This is a confirmed and sustainable market. The potential is mainly to export to India and Vietnam. Until the recent restrictions on cross-border cashew trade, processors from Ghana obtained nuts in large quantities from Côte d'Ivoire. There is potential to increase export value by improving quality, and to increase production by increasing yields.
2. *Potential for local processing.* At present, less than 10 percent of production is processed. The main value addition could come from local processing for exports. West African income from this sector could be increased by promoting local high-quality processing.

3. *Improving yields.* Yields could be increased through training in better agricultural practices and introducing high-yielding and early-bearing varieties. The ACi is already carrying out this activity in selected countries. There are also private sector initiatives for commercial cashew plantations in Ghana, Nigeria, and Benin.
4. *Markets for local service providers.* The cashew sector offers direct and indirect opportunities for linked services (e.g., supplies of bags and other inputs, transport, warehousing facilities, training).
5. *Value addition from cashew apples.* The cashew apple weighs at least five times more than the nut, and is not well-utilized at present.
6. *Domestic market for cashews.* Generally, cashew has little market in African countries, but the domestic market is growing in some countries. Many major supermarkets, hotel chains, and Chinese restaurants have branded cashews in salted and peppered flavors in response to growing demand. Local processors have taken advantage of this to supply the domestic market. West Africa has a population of more than 325 million; it represents an emerging market for new products.
7. *Potential for organic cashews.* Production of cashew in Africa is generally considered to be organic. Organic snack products are in demand in traditional cashew kernel markets.

3.4.3.2. Issues

Some of the issues often mentioned in cashew sector development are briefly discussed below.

- **Consistency of the quality of the raw nuts supply**. Although there are many improvements in the RCN supply, quality standards and grading will require participation by all players—from production to exporting and processing. Currently, farmers sell all the nuts irrespective of quality to seasonal visiting buyers. It is important to have a consensus on the code of practice (quality standards, grading methods) and for it to be accepted and respected by all major players.
- **Access to finance.** Finance is a major issue, mainly for traders and processors. Intermediaries and other operators also have difficulties accessing financing during the harvest season.
- **Slow progress in the processing industry.** Although there are initiatives to promote processing nuts at their origin, other issues need to be addressed. These include the technology for processing, the availability of trained labor, working conditions in processing factories, disposal of shells and environmental concerns, promotion of export markets, and export market norms and standards.
- **Limited capacity of sector associations.** The ACA is a valuable platform for actor for networking, information, and other services. However, national-level sector associations are very weak in terms of resources, technical capacity, and operations
- **Other issues:**
    - Availability of high-quality, high-yielding, early-cropping planting material (although the ACi is working on this in some countries)
    - Infrastructure in production areas (storage, access roads)
    - Factors related to competitiveness, such as high costs of factors of production and financing (especially for processers)
    - Research and development support for the sector (realted to agriculture, processing, and markets)

4. DISCUSSION OF VALUE CHAIN ASSESSMENT CRITERIA

4.1. MARKET INFORMATION

The main products of the cashew value chain are raw cashew nuts and processed kernels. The present market for RCN is India and Vietnam. Currently, West Africa exports nearly 900,000 mt of raw nuts to these two destinations.

With expansion of processing, the RCN market within the West Africa region can increase. Most West African processed kernels are sold to European markets. The U.S. and other countries, such as China, Japan, and Australia, are potential markets. Linkages and collaborations with lead international firms and supermarket and wholesale chains such as Costco, Global Trading, and Olam International, could provide wider opportunities for West African processed cashews to serve new markets.

4.2. CONTRIBUTION TO ECONOMIC GROWTH

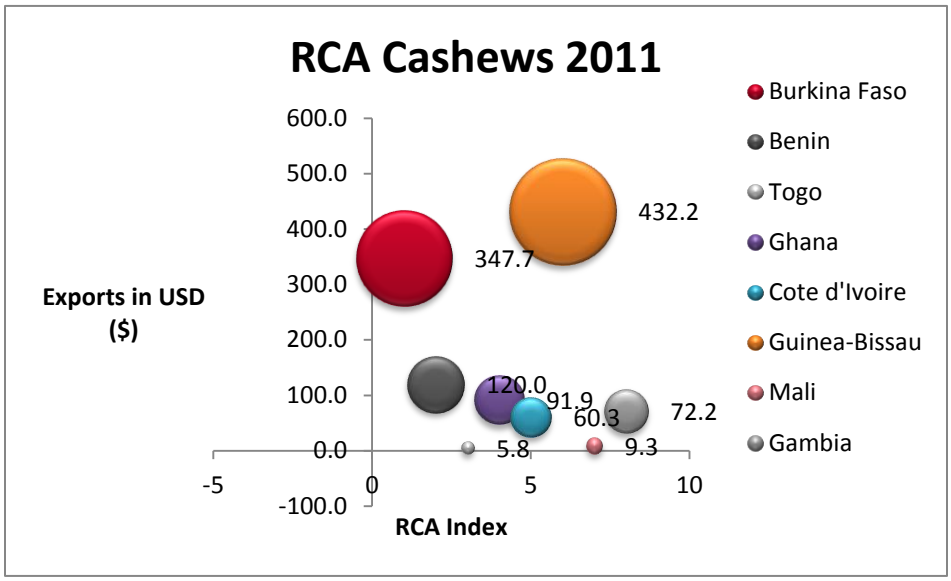
4.2.1. POTENTIAL TO INCREASE TRADE

The cashew value chain offers major potential to increase trade in both RCN and kernels. About 90 percent of West Africa's total production is exported as RCN. The sector has grown at 6 percent per year in terms of production and, even if the processing sector expands, RCN exports will continue to be a key commodity from West African countries in the coming years. The present value of the raw nut production is more than $900 million.

Increased trade in processed kernels is also very possible. West Africa currently has a processing capacity of around 120,000 mt of kernels. A new investment for a unit of 35,000 mt is being built in Ghana. The Trade Hub team met other potential investors during the field mission in May 2014.

Included in Annex 8 is a brief analysis of "Revealed Comparative Advantage" for the cashew sector in West Africa. The table below indicates where each country's measurement for RCA, based on 2011 data. The RCA index ranges from 0 to infinity with 1 as the break-even point. That is, a RCA value of less than 1 means that the product does not have export comparative advantage, while a value above 1 indicates that the product has a "revealed" comparative advantage. The majority of countries in the sample showed a high revealed comparative advantage in cashew exports to the rest of the world. One of the lowest RCAs was through Togo (5.8). The leader of these exports was Guinea-Bissau, with a revealed comparative advantage of 432. Many of the countries fell within this range. This means that Guinea-Bissau has the top RCA for cashew exports to the rest of the world.

Figure 2: Revealed Comparative Advantage: Cashews



4.2.2. POTENTIAL TO CREATE JOBS

Large numbers of people are employed in cashew cultivation, harvesting, and RCN marketing, as well as in related services such as retail buying and transport. Cashew processing is generally a labor-intensive activity. A recent study supported by the ACA indicates that every metric ton of cashew nuts produced and sold provides work for an average of 37 persons and generates additional income for many households.[13] The data further indicate that every metric ton of nuts produced creates 0.3 jobs.

4.2.3. POTENTIAL TO ATTRACT INVESTMENTS

There is investment potential in the cashew sector in the following areas:

1. Commercial farming for planting new high-yielding varieties
2. Introduction of better agriculture practices to existing farms to increase yield
3. Local processing of cashews
4. Export businesses for RCN and processed cashews
5. Processing of cashew apples and possibly other new marketable products

4.2.4. POTENTIAL TO GENERATE VALUE ADDITION

The cashew value chain includes several levels of value addition, most of which can be expanded.

- Value can be added to raw nuts by improving quality, drying, storing, and bagging, all of which substantially increase the prices paid by exporters. Training farmers in harvest and post-harvest techniques in Senegal from 2007 to 2010 (under USAID's *Projet Croissance Economique*) increased the premium paid by exporters for well-dried, high-quality cashew nuts. Further steps in this direction

[13] Unpublished data provided by ACA office in Ghana, 2014.

would include providing training and raising awareness on post-harvest value addition and grading of nuts.

- A second area of value addition lies in promoting processing at the producer level. Currently, less than 10 percent of total production is processed locally, even though there is a sustainable supply of quality nuts available in all of West Africa's cashew-producing countries. Increasing local processing capacity could bring substantial income to a country if a greater volume can be processed for local and export markets.
- It may also be possible to promote production of by-products from cashew apples. In Asia particularly India, cashew apples are used in a variety of products, including juices, jams, sweets, and pickles. TechnoServe has already advanced a proposal for commercial production of juice from cashew apples.

4.2.5. POTENTIAL TO GENERATE MARKET-BASED IMPROVEMENTS IN PRODUCTION YIELDS

West African cashew yields are low compared with those in Asia. Improved yields stem from better varieties and increased use of good agriculture practices. In West Africa, large numbers of plantations owned by traditional farmers are left to grow without much maintenance. This leaves great potential to increase productivity and production without extending cultivated land area. Every additional ton of cashews produced contributes $500 to $600 or more to household incomes.[14]

4.3. IMPACT ON FOOD SECURITY

The cashew sector generates annual revenues of close to $900 million for about 6 million households in 11 countries in West Africa. This income, which provides farmers with cash to purchase food and improves their livelihoods, could be expanded. It could be substantially increased by increasing primary processing, improving yields, and obtaining revenues from by-products that are not yet adequately commercialized. ACA data shows that 6.3 million households depend on the cashew sector for all or part of their income. This confirms that an average of six to seven households receive income from every ton of cashew sold for export or local processing.[15]

Cashew is primarily produced through a smallholder farming system. About two million hectares are under cashew production across the 11 West African countries. Generally, these lands are not highly productive for other food crops; hence the income from cashews is a particularly important element of household income and livelihoods. Experience in other countries suggests that systematic cashew planting permits other crops, especially short-term food crops, to be grown between the rows of trees. This is an opportunity for experimentation and demonstration.

4.4. SOCIAL IMPACT

The cashew value chain offers substantial opportunities for women and youth. Harvesting and processing activities are female-dominated. Collecting, drying, and bagging operations are generally performed by women. Collection and processing and selling of cashew apples at the rural level are also done by women. Existing cashew processing establishments in the region employ about 14,700 persons, of whom 78 percent are women. Youths are employed or find remunerative work in several activities within the cashew value chain, including farming, transporting nuts, serving as local buying agents, and working in

[14] ACA data, 2014

[15] Calculations based on FAO data indicate that the population involved in the cashew sector in West Africa was around two million households. ACA data appears to be more up-to-date in this area.

processing units.

4.5. COMPETITIVENESS

West Africa's cashew sector benefits from two main comparative advantages:

1. Growing volumes and sustainable production of raw nuts currently represent 35 to 40 percent of world production.
2. There is potential to promote local processing, since less than 10 percent of local RCN is processed.

The West Africa is considered the global center—the "power base" for growth of RCN production. Thirty-five to 40 percent of world cashew production comes from West Africa, despite the region's low productivity. West Africa includes the world's second-largest producer (Côte D'Ivoire: 450,000 mt) and three of the world's top five RCN exporters (Côte d'Ivoire, Guinea Bissau, and Benin). Production in this region is sustainable and is considered to be of good quality for processing. Prices are competitive in the world market. Production of RCN is seasonal, but availability within the region is spread out over six to eight months of the year, from about February to August. For importers of RCN (India and Vietnam) West Africa fills a supply gap for a long period when East African supply is in its off-season.

Processing cashew nuts in West Africa and exporting to EU and U.S. markets is becoming commercially attractive. Transport with the shell is becoming increasing costly; the unutilized shell represents about 80 percent of the weight of the nut. On average, one ton of nuts produces only 200 kgs of kernels. Local processing could reduce transport cost and make kernel prices more competitive in the market.

4.6. FACTORS THAT WOULD SUPPORT UPGRADING

The guiding principle of supporting upgrades to the value chain is facilitating market-based business growth at critical points of the value chain. The focus should be on expanding options or opportunities to generate market outcomes that promote sustainable growth and high levels of performance. To achieve these purposes, the interventions for upgrading should focus on:

- Improving quality and standards and growing the supply of RCN. This should include promoting research and development to introduce new plants varieties and improve yields.
- Promoting local value addition through processing, by encouraging investments and partnerships with lead national and international firms. This should include technical training to upgrade the processing industry.
- Strengthening national associations of cashew value chain actors.
- Facilitating access to finance for the actors and advising on creating an enabling environment to promote the value chain's growth activities.

4.6.1. CHAMPIONS FOR CHANGE

Over the past few years, West African cashew value chain actors have become increasingly organized and aware of potential and opportunities in the sector. The ACA plays an important role in the sector. The Trade Hub team has identified many existing and potential champions of change, including the following (names are not provided pending formal consultations):

- Existing exporting and processing multinational companies operating in the region

- Large exporters of RCN in the region
- Existing national processors
- Foreign investors and importers of cashew nuts and kernels
- Professional associations

Due to the high potential of the cashew value chain in West Africa, several actors contacted confirmed their interest in working with the Trade Hub to upgrade and enhance the value chain's performance.

4.6.2. ACCESS TO FINANCE

The formal banking system's direct involvement in the cashew sector is limited; for many actors, this is a constraint to investing in the sector. At the local level, access to finance is a limiting factor for engaging investments throughout the value chain. Traders complain of difficult access to working capital during the season; working capital for LBAs is a major constraint, as it is for existing and emerging processors. The potential investors contacted who are interested in establishing processing units confirmed that it is difficult to access finance, particularly at prevailing interest rates of 25 percent or more.

This situation is less critical for raw nut exports. Seasonal traders from Asia and cross-border traders often provide short-term funds to LBAs and other traders. Large exporters and processors also provide finance to LBAs by pre-financing their purchases.

4.6.3. PRODUCTIVE INFRASTRUCTURE

Stakeholders and actors often mention infrastructure facilities for the cashew trade as an area of significant inadequacy. The poor status of access roads and inadequate storage facilities are the main issues underlined by the actors.

4.6.4. SYNERGIES WITH EXISTING PROGRAMS

The cashew sector has benefited from support from USAID and several other public, private, and donor organizations. The previous West Africa Trade Hub (WATH) projects played an important role in organizing and addressing the value chain's development issues. The ACA, which continues to develop its capacity, provides a variety of services to the value chain both regionally and internationally. The ACA established the ACi, which is beginning to address production- and processing-related needs in selected countries. Collaboration may also be found with other cashew-focused assistance programs in the region, such as the United States Department of Agriculture-supported Cashew Sector Support Program in Gambia and Senegal.

4.6.5. POLICY ENVIRONMENT

For this assessment, the details of the policy environment could not be adequately considered within the time available. Each country in the region has adopted its own guidelines and policies; these need to be analyzed at a later stage.

4.7. CLIMATE RESILIENCE AND ENVIRONMENTAL SUSTAINABILITY

Cashew is a tree crop that is well-suited to poor, sandy soils; it thrives in soils that are otherwise unfit for food crops. Cashew can be planted in degraded areas; this was the purpose of original planting in

several countries. The cashew tree also protects soil from erosion and is highly drought-resistant. These characteristics make cashew a good candidate for protecting areas degraded by inappropriate farming and other practices (e.g., slash and burn farming, cutting trees for firewood).

On the other hand, cashew processing can cause an environmental issue with regard to disposal of cashew shells. Large quantities of cashew shells that accumulate near processing factories may have a negative environmental impact. Some units try to use the shells as a source of fuel, along with firewood, for boiling or roasting nuts. Cashew shells contain oil that has a polluting effect.

4.8. OTHER HURDLES TO SUCCESS

Cashew is a regional value chain in which products often cross borders for economic reasons. Despite being the second-largest RCN producer in the world, West Africa has not yet achieved its full potential. It is important that the cashew kernels processed locally be competitive in the marketplace at both local and international levels. Several key interventions are key:

- Creation of an enabling policy environment to facilitate supplies and exchanges of raw materials within the region, in areas where there are investments in the processing industry.
- Reductions in barriers and costs for transport. Development of access roads in production areas to bring down costs.
- Facilitation of specific incentives to encourage investments and access to finance to promote the processing industry.

4.9. SWOT ANALYSIS

The section summarizes the main strengths, weakness, opportunities, and threats (SWOT) related to the success of the cashew value chain.

Strengths

- World's second-largest producer of RCN
- Sustainable production of quality nuts
- Competitive prices, with price competition created by the presence of a large number of buyers in the region
- Relatively easy access to shipping ports
- Substantial producer awareness of quality requirements

Weaknesses

- Low level of local value addition; little local processing
- Low yields
- Good agriculture practices not applied
- Weak national value chain associations
- Poor infrastructure and access roads in producing areas

Opportunities

- Increasing export market for RCN
- Possibility of promoting processing of nuts locally; with export especially to EU and U.S. markets
- Possibility of increased production and productivity
- Natural resource management; cashew is a soil protection and reforestation plant

- An effective stakeholder networking platform provided by the ACA

Threats

- Dependence on two RCN export markets
- New, high-yielding varieties not being planted
- Slow progress in attracting investments for processing

5. VISION AND UPGRADING STRATEGY

5.1. VISION

The West African cashew value chain can become a leading player in the global edible nut market, and a center of excellence and repute for quality and branded cashew nuts. West Africa's production supply to the world's markets can enable millions of farmers to grow their wealth and achieve sustainable incomes from their own resources, and can create remunerative on-farm and off-farm employment for women and youth. Cashew cultivation can be used to safeguard the environment against degradation and add value to marginal lands unsuitable for other food crops.

5.2. UPGRADING STRATEGY

A collaborative and participative approach involving private and public sector stakeholders is needed to develop and implement a strategy to achieve this vision. The Trade Hub recommends a strategy built on four pillars:

1. Consolidating and increasing the sustainable production of quality cashew nuts
2. Promoting value addition at all levels of the value chain, including raw nuts, kernels, and cashew apples, with greater participation and investment by the local and global private sector
3. Strengthening local capacities of member-based organizations, including their ability to deliver services to support members
4. Improving access to finance and creating an enabling environment that is efficient and supportive of improved productivity, value addition, and investment

5.3. RISKS AND MITIGATION

The main risks are supporting this value chain are:

Extent of the area to be covered under the cashew sector development program. The Trade Hub will not have the resources to deeply cover all 11 producing countries. To address this issue, the project can plan to work with selected countries initially and then expand the area of coverage progressively using tested business models. The Trade Hub should work closely with private champions to catalyze investment and improvements. In addition, the project should work closely with other programs and with national and regional entities to extend the reach of the Trade Hub's initiatives.

Possible slow progress in investments in local value addition through processing kernels. To achieve the Trade Hub's objectives and the industry strategy, factors such as investors' access to finance, linkages with external investors and markets, and implementation of an effective policy environment for new investments are important. The Trade Hub's finance team can work with stakeholders to address the issue of access to finance. The project should work very closely with the private sector and existing networks, such as the ACA and national organizations, to develop market and investment linkages. To achieve policy-related outcomes, the Trade Hub can help subsector working groups develop agendas and advocate for improved policies and procedures.

6. ADDITIONAL INFORMATION NEEDED

There are numerous information gaps in looking at the cashew value chain. Collecting information and additional data will assist all actors with forward planning. Some priorities include:

1. Details on cashew-related policies and relevant regulations and the impact of those policies and regulations in the region and in each country
2. More information on production characteristics and challenges to growth
3. Information on the large private sector firms active in the industry
4. Details on specific interventions by donor-assisted projects, NGOs, and private and public sector entities
5. Details on the market for cashew kernels, to update the work done by WATH in 2008
6. Details on the current status of cashew apple processing and value addition in the region

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ANNEX 2: PERSONS AND ORGANIZATIONS INTERVIEWED

	Organization	Name and Designation	Country and Contact Details
1	African Cashew Alliance (ACA): Ghana	Roger Brou, MD	Ghana: +233 544 316 510 rbrou@africancashewallienace.com
		Earnest Dankwa, Finance Manager	Ghana: +233 544 33 52 82 edankwa@africancashewalliance.com
		Sunil Dahiya, Business Adviser	Ghana: Cell +233 544 340 040 sdahiya@africancashewalliance.com
		Olivier Kabre, MIS and M&E Officer	Ghana: Cell +233 544337608 olivierkabre@gmail.com
2	Exporter of raw nuts to India and Vietnam	Andrew Quainoo	Cell +233 202011688
3	TechnoServe	Shakthi Pal	Ghana: shakthi.tns@gmail.com
4	African Cashew Initiative (ACi)	Rita Weldinger	Ghana: cell +233302774262 rita.weldinger@giz.de
5	Exporter	Ram Mohan	Gambia: rammohangambia@gmail.com
6	Cashew Support Programme: Gambia and Senegal	Joanne Yeager Sallah, Cashew Suport Programme	Gambia: jsallah@irdglobal.org
7	Olam Group (exporter, processor)	Vishal Mittal	Nigeria: Cell +234 08071994043 vishal.mittal@olamnet.com
		Sameer Kumar	Ghana
		Olam representative	Côte d'Ivoire
8	Ghana Cashew Industry Association	Winifred Osei Owusu	Tel. +0302237474 seiwus@yahoo.com
9	Cashew sector expert, Nigeria	Roland Aroch	Tel. +08037186228
10	Cashew sector expert, Senegal	Mamdou Dabo	Tel. +221 776307516

ANNEX 3: CASHEW ASSOCIATIONS IN WEST AFRICA

Cashew Associations in West Africa: Contacts—National ACA Representatives

N°	Country	Structure	Representative	Email
1	Benin	Nad & Co	Mme Taraf	tarrafgeor@yahoo.fr
		CONEC	Oura Rigobert	rigoura@yahoo.fr
2	Burkina Faso	Anatrans	August Boudo	boudoaugustem@gmail.com
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ANNEX 4: CASHEW NUTS WITH SHELL—WORLD PRODUCTION

Cashew Nuts with Shell, World Production (mt)							
Countries	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2012 (%)**
India	620,000	665,000	695,000	613,000	674,600	680,000	23
Côte d'Ivoire	280,000	330,000	350,000	380,000	393,000	450,000	16
Vietnam	300,000	300,000	300,000	350,000	350,000	350,000	12
Brazil	140,675	243,253	220,505	104,342	230,785	320,000	11
Benin	60,000	86,000	117,000	102,137	162,986	170,000	6
Philippines	112,558	112,334	111,993	134,681	133,388	132,541	5
Guinea Bissau	98,000	99,000	99,500	108,029	128,684	130,000	4
Tanzania	92,600	99,100	79,100	74,170	122,274	122,274	4
Indonesia	146,148	156,652	147,403	115,000	114,600	117,400	4
Nigeria	90,000	90,000	90,000	90,000	99,120	99,120	3
Mozambique	74,395	85,000	64,000	96,558	112,796	64,731	2
Burkina Faso	38,000	38,000	40,000	40,000	45,000	45,000	2
Senegal	30,000	30,000	35,000	35,000	38,000	38,000	1
Ghana	40,511	22,000	27,000	30,000	35,736	36,500	1
Thailand	43,048	40,612	38,184	37,857	29,060	31,500	1
Kenya	13,520	17,000	17,683	17,568	20,927	29,026	1
Malaysia	13,000	12,935	12,830	13,543	15,118	16,000	1
Gambia	10,000	10,000	12,000	12,000	12,500	12,500	0
Sri Lanka	7,050	7,120	6,770	6,970	6,890	10,000	0
Guinea	6,500	7,000	7,497	7,100	8,458	8,500	0
Madagascar	6,900	7,607	8,000	9,000	10,000	7,000	0
Togo	1,400	2,100	3,500	4,900	6,700	6,800	0
Mexico	2,998	4,171	4,108	4,406	4,260	4,423	0
Mali	5,867	3,600	2,873	2,900	3,600	3,600	0
El Salvador	2,700	3,687	3,380	3,380	3,400	3,450	0
Peru	2,350	2,350	2,535	2,124	2,588	2,700	0
Angola	1,894	2,088	2,113	1,750	2,085	2,000	0
Honduras	1,479	2,019	1,851	1,900	1,950	2,000	0
Production Total	**2,241,593**	**2,478,628**	**2,499,825**	**2,398,315**	**2,768,505**	**2,895,065**	**100**

Estimates/adjustments done on FAO data with data collected for Nigeria, Vietnam, Brazil, Senegal, Gambia, and Togo.

ANNEX 5: CASHEW NUTS WITH SHELL—ECOWAS PRODUCTION

Cashew Nuts with Shell, ECOWAS, Production (mt)				
Country	**2011**	**2011 (%)**	**2012**	**2012 (%)**
Côte d'Ivoire	393,000	42	450,000	45
Benin	162,986	17	170,000	17
Guinea Bissau	128,684	14	130,000	13
Nigeria	99,120	11	99,120	10
Ghana	35,736	4	36,500	4
Guinea	8,458	1	8,500	1
Togo	6,700	1	6,800	1
Senegal	38,000	4	38,000	4
Burkina Faso	45,000	5	45,000	4
Mali	5,000	1	5,000	0
Gambia	12,500	1	12,500	1
Production (Total)	**935,184**	**100**	**1,001,420**	**100**

Cashew Nuts with Shell, ECOWAS, Area Planted (ha)				
Country	**2011**	**2011 (%)**	**2012**	**2012 (%)**
Côte d'Ivoire	877,813	43	900,000	44
Benin	465,675	23	468,000	23
Nigeria	365,000	18	366,000	18
Guinea Bissau	222,517	11	223,000	11
Ghana	60,223	3	61,000	3
Senegal	16,500	1	17,000	1
Burkina Faso	9,100	0	9,000	0
Mali	9,200	0	9,000	0
Guinea	7,349	0	7,400	0
Togo	4,700	0	4,750	0
Gambia	1,600	0	1,650	0
Area (Total)	**2,039,677**	**100**	**2,066,800**	**100**

ANNEX 6: PRODUCTION AND HOUSEHOLDS ENGAGED IN CASHEW SECTOR IN WEST AFRICA

West Africa - Cashew Production and House holds 2013				
Country	**production MT**	**Housholds**	House holds per ton	% of House holds by country
	2013E	**2013 E**		
Benin	90,000	600,000	7	9.4
Burkina Faso	32,000	213,333	7	3.3
Ghana	40,000	266,667	7	4.2
Guinea	7,500	50,000	7	0.8
Guinea-Bissau	180,000	1,200,000	7	18.8
Cote d'Ivoire	470,000	3,133,333	7	49.0
Mali	6,000	40,000	7	0.6
Nigeria	90,000	600,000	7	9.4
Senegal	30,000	200,000	7	3.1
The Gambia	11,000	73,333	7	1.1
Togo	3,000	20,000	7	0.3
Total West Africa	959,500	6,396,667	7	100.0
Source -Based on ACA data				

ANNEX 7: WEST AFRICA CASHEW PRODUCTION, PROCESSING, AND EXPORTS

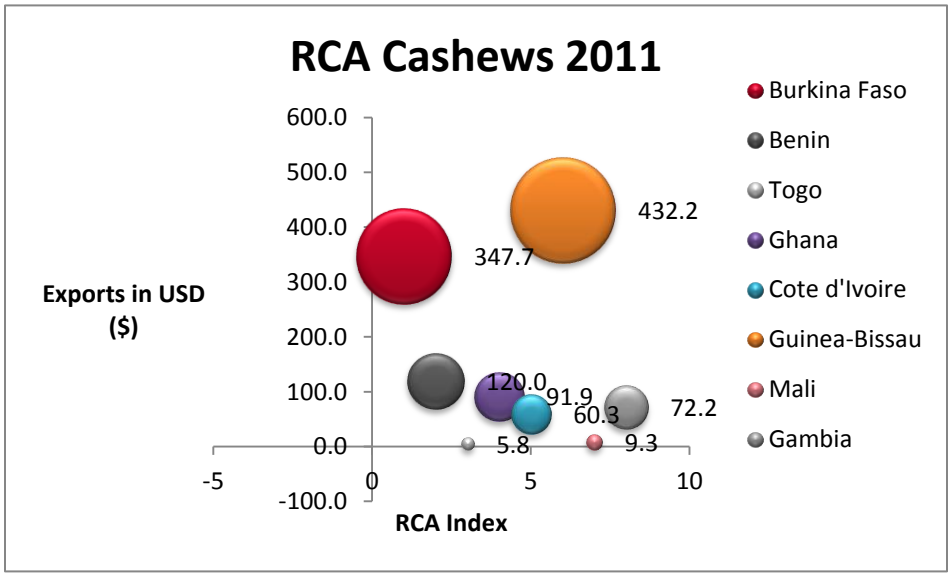
Country	Produced (mt)		Processed (mt)		Exported (mt)		No. Households
	2013 Est	**% of Total**	**2013 Est**	**% of Total**	**2013 Est**	**% of Total**	**2013 Est**
Benin	90,000	9	4,000	4	86,000	96	600,000.00
Burkina Faso	32,000	3	5,333	17	26,667	83	213,333.33
Ghana	40,000	4	13,853	35	26,147	65	266,666.67
Guinea	7,500	1	747	10	6,753	90	50,000.00
Guinea Bissau	180,000	19	2,533	1	141,000	78	1,200,000.00
Côte d'Ivoire	470,000	49	22,800	5	445,000	95	3,133,333.33
Mali	6,000	1	100	2	5,900	98	40,000.00
Nigeria	90,000	9	23,000	26	67,000	74	600,000.00
Senegal	30,000	3	100	0	29,900	100	200,000.00
Gambia	11,000	1	25	0	50,000	455	73,333.33
Togo	3,000	0	1,733	58	1,267	42	20,000.00
Total West Africa	**959,500**	**100**	**74,225**		**885,275**		**6,396,666.67**

Source: ACA May 2014

ANNEX 8: REVEALED COMPARATIVE ADVANTAGE

The Revealed Comparative Advantage (RCA) for Cashews and its supporting data is shown below:

Export data 2011 except: Benin (2010), Guinea and Gambia (2008), Guinea-Bissau (2005), and Senegal (2012)



Commodity data from UN Comtrade and FAO, world exports from FAO, and country totals from WTO.org

	A	D	E	F	G	H	L	M	N	P
1	Products	Burkina Faso	Benin	Togo	Ghana	Cote d'Ivoire	Guinea-Bissau	Mali	Gambia	World
2	Cashews (with shell)	$55,882,426	$22,975,630	$1,057,782	$469,342,509	$262,564,948	$22,915,273	$1,789,725	$2,086,738	1,120,801,000
3	Cashews-shelled	5,753,000	523,000	459,644	$33,950,927	$8,826,353	$30,191	$648,016	$128,854	$3,034,312,000
4	Cashews-Total	$61,635,426	$23,498,630	$1,517,426	$503,293,436	$271,391,301	$22,945,464	$2,437,741	$2,215,592	$4,155,113,000
5	Country Total Exports	768,000,000	$848,000,000	$1,132,000,000	23,731,000,000	19,500,000,000	230,000,000	1,139,000,000	$133,000,000	
6	World Total Exports									17,999,547,615,000
7	RCA Cashews	**347.7**	**120.0**	**5.8**	**91.9**	**60.3**	**432.2**	**9.3**	**72.2**	
8	RCA Cashews (with shell)	$1,168.5	$435.1	$15.0	$317.6	$216.2	$1,600.0	$25.2	$252.0	
9	RCA Cashews (shelled)	$44.4	$3.7	$2.4	$8.5	$2.7	$0.8	$3.4	$5.7	

Explanation of Revealed Comparative Advantage

The idea to determine a country's 'strong' sectors by analyzing the actual export flows was pioneered by Liesner (1958).

The procedure was refined and popularized by Bela Balassa (1965, 1989) it is popularly known as the Balassa Index. Alternatively, as the actual export flows 'reveal' the country's strong sectors it is also known as Revealed Comparative Advantage.

Balassa defined the export performance of a specific product/industry from a country – as measured by revealed comparative advantage index – as the relative share of the country's export of the product in the world export of the same product, divided by the overall share of the country in world exports. More specifically, the revealed comparative advantage index of product j exported from country i (RCAji) can be expressed as follows:

RCAji = (Xji/Xjw) / (Xi/Xw), where:

Xji = exports of product j from country i Xjw = world exports of the product j Xi = exports of country i Xw = world exports

The RCA index ranges from 0 to infinity with 1 as the break-even point. That is, a RCA value of less than 1 means that the product does not have export comparative advantage, while a value above 1 indicates that the product has a "revealed" comparative advantage.

For the case of cashews:

Export data (Xji) for each country are shown in row 4 under their respective country names; so the formula can be written as X (cashews, Nigeria); X (cashews, Burkino Faso), etc.

Xjw or X (cashews, World) is in the cell P4 = $4.2 Bil (rounded)

Xi, exports of the countries, are shown in row 5

Xw, world total exports, Cell P6 = $18Trillion

The majority of countries in the sample showed a high revealed comparative advantage in cashew exports to the rest of the world. One of the lowest RCAs was through Togo, where (F4/P4)/(F5/P6) = 5.8. The leader of these exports was Guinea-Bissau, with a revealed comparative advantage of 432. Many of the countries fell within this range. This means that Guinea-Bissau has the top RCA for cashew exports to the rest of the world.

These calculations are limited to some degree by the availability of export data.