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Special Edition to Celebrate

6TH WORLD CASHEW CONVENTION & EXHIBITION

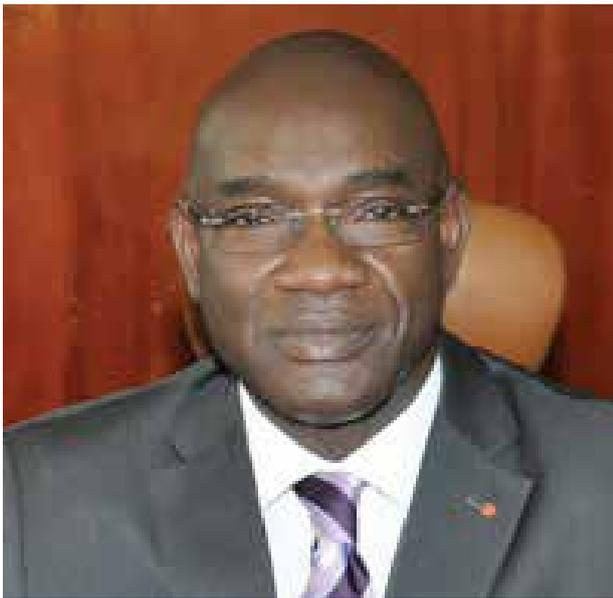
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Message



Côte d'Ivoire hosts the 6th edition of the World Cashew Convention which is being held for the first time in Africa. It is both an honour for our country and a satisfaction for me to receive the great cashew family in Abidjan.

The convention is being held at a time when Côte d'Ivoire is showing promising results in the sector.

Indeed, the sanitation and organization of the cashew nut sector initiated since 2013 have made it a strategic sector for the development of Côte d'Ivoire. In this context, statistics reveal that cashew provides a livelihood for about 350,000 direct beneficiaries and more than 2,450,000 indirect beneficiaries, i.e. about 10% of the Ivorian population. **The country has passed the 700,000 tonnes threshold since 2015, becoming the world's leading producer.**

The growing interest of investors in processing has led the Government to put in place important measures to create a favourable environment for the development of the sector and local processing. In this regard, in addition to the general and specific provisions listed in the Investment Code relating to industry, the Cotton and Cashew Council which I have the honour to chair, implements specific incentive measures to encourage investment in processing.

These key measures include subsidies for local processing, the establishment of bank guarantee mechanisms up to 25 percent of the financing of the raw material, total tax exemption on both the export of kernels and the import of equipment and spare parts.

In addition to these measures, there are other strong initiatives of the Cotton and Cashew Council such as the International Cashew Processing Equipment and Technology Exhibition (SIETTA), the next edition of which will be held in November 2020 in Abidjan. **It also involves the creation in Yamoussoukro of the Cashew Industry Innovation and Technology Centre (CITA), which is both a factory for testing technological innovations and a training center for the sector's professions.**

Moreover, in the same logic, the Project for the Promotion of the Competitiveness of the Cashew Value Chain (PPCA) is implemented for the benefit of small farmers and the processing industry, with among other purposes, the development of dedicated Agro-



Industrial Zones in four (04) main production regions of the country.

All in all, the challenge of the reforms undertaken by the Government and implemented by the Cotton and Cashew Council is to build a strong and sustainable sector by 2025 with optimal added value that guarantees a distribution of wealth to a greater number of people.

The Government of Côte d'Ivoire thus intends not only to consolidate its position as the world leader in the production and export of raw cashew nuts, but also to give Côte d'Ivoire, in the medium term, a position as a major player in the processing and trade of kernels and other derived products.

I hope that the Abidjan meeting will serve as a lever for us to take up this other challenges.
I wish you all a good convention.

Dr Adama COULIBALY,
Managing Director of the Cotton and Cashew Council
Coordinator of the PPCA

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BIOGRAPHY

With more than 30 years of experience in rural development, Dr Adama COULIBALY has been the Director General of the Council for the Regulation, Monitoring and Development of the Cotton and Cashew Sectors (CCA) for the past 3 years. In this capacity, he is the Coordinator of the Project for the Promotion of the Competitiveness of the Cashew Value Chain called (PPCA). In addition, Dr. Adama Coulibaly has been elevated to the ranks of Officer of the National Order and Commander of the Order of Agricultural Merit, in recognition of his rich and varied services to the nation.

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The Cashew Production and Business Scenario of Vietnam in 2019 and Forecast for 2020

Pham Van Cong, VINACAS President, Vietnam



As we have witnessed, the period of 2017 – 2018, wherein the global cashew production and businesses have faced numerous difficulties and challenges. In 2019, with the combined efforts of all businesses in the industry, VINACAS members, foreign businesses/partners and the guidance of the VINACAS Board of Directors, **Vietnam's cashew industry has maintained the growth momentum well both in export volume and value with an annual export turnover of US \$ 3.6 billion (including all deeply processed products, cashew nut shell oil, etc.);** a new record set by the cashew industry in Vietnam, and this has helped the country to retain its top position in the world cashew exports market for the 14th consecutive year and thus, accounting for over 60 percent of the global cashew exports.

The export of cashew kernels that are deep processed (fried, roasted, seasoned only) taste, honey, cashew confectionery), domestic consumption has increased

sharply, accounting for 15 percent of the total processed cashew nut production of the whole industry, as against last year's figure was 7-8 percent.

Regarding import of raw materials: Vietnam has imported over 1.5 million tons of raw cashew nuts, plus about 400 thousand tons of raw cashew nuts harvested domestically (excluding Cambodia); **The total output of raw materials being processed is 1.9 million tons of raw cashew - this is the second record of Vietnam cashew industry in 2019; thus, Vietnam has risen to become the largest importer of raw cashew nuts in the world.** The largest import markets of Vietnam's cashew nuts include West Africa (Ivory Coast, Ghana, Benin, Nigeria, Guinea Bissau, etc.), while strong growth markets include: Tanzania and Cambodia.

The highlight of 2019 is that for the first time a large corporation of Vietnam has resonated in the international raw cashew market with the historic deal of the world cashew industry "Tanzania - TL176", along with it continues to develop buying large quantities of raw cashew nuts from some countries. This is also a pioneer enterprise in Vietnam supplying large quantities of raw cashew raw materials to the Indian market. **According to VINACAS's Board of Directors, the "Tanzania - TL176" deal is one of the highlights of Vietnam's cashew industry in 2019 and contributes significantly in stabilizing kernel as well as raw prices in the second half of 2019.**

VINACAS has cooperated with leading inspection agencies in Vietnam such as Vinacontrol, Cafecontrol, SGS Vietnam to research and propose the State to



promulgate and implement the application of Vietnam Raw Cashew Standards (TCVN 12380-2018). This is an important set of standards in checking, evaluating and classifying the quality of imported raw cashew raw materials and handling disputes, contributing to ensuring the production and business efficiency of businesses and traders of Vietnam cashew industry. As planned, in 2020, VINACAS will continue to coordinate with relevant organizations and units to promulgate mandatory regulations - Vietnam technical regulation on raw cashew nuts. I would like to take this opportunity to invite all African partners and businesses across the world to work with Vietnamese businesses to refer to TCVN 12380-2018 in the contract for buying and selling of raw cashew from the 2020-2021 crop season.

With respect to forecasting the cashew production and business situation in 2020, the disease caused by the new strain of Corana virus in China is causing a lot of concern, plus the complicated developments of international economic - political situation (US - China relations, US - India, the UK withdrawal from the EU "Brexit"), the growth of the cashew industry will be more or less likely to be affected. If 2019 is a "Positive" growth, then 2020 will be a "Negative" growth. **VINACAS forecasts that cashew nut exports to China (the second largest export market of Vietnam's cashew industry) may decline sharply in 2020 because**

of the above factor. In addition to that, at present, cashew kernel prices are also adjusting to the negative environment, affecting the production and business efficiency of enterprises in the industry.

Regarding the cooperation between Vietnam and Ivory Coast, VINACAS is always interested in building relationships and cooperating with Ivory Coast's partners, specifically signed a Memorandum of Understanding with the Association of Cashew Exporters of Ivory Coast (AEC-CI), often exchange delegations and cooperation in four (4) areas: information, agriculture, trade and technique.

VINACAS desires that the Government-level cooperation between Vietnam and Ivory Coast will be increasingly developed, thereby opening up new opportunities and prospects in exchanges and cooperation between the governments and people of the Ivory Coast and Vietnam, including the cashew industry of the two countries.

As for VINACAS is concerned, we are always looking forward to working with cashew organizations around the world in key areas: information sharing, agricultural technical assistance, cooperation to minimize post-harvest losses, and preventing and limiting trade risks.

Vietnam Can Benefit from Importing NWP Borma Kernel from African Countries

Vu Thai Son, General Director, Long Son - Vietnam



In 2019, we witness the strong rise of cashew industry in African countries, especially led by Ivory Coast. The evidence for this strong rise is the increasing number of factories located in Africa and the volume of cashew kernel exported from African countries to the world including Vietnam.

However, the processing industry in African countries still faces many difficulties due to limitations in technology, experience and human resources. These difficulties contribute to industry a new type of semi-finished product that is the borma kernel (kernel with husk). And with its cashew business experience, Vietnam has quickly become a customer, the largest market of Africa (especially in Ivory Coast) for this borma kernel. **The trade of borma kernel brings many benefits to both Vietnam and Africa.** On the Vietnamese side, we can see some of the main benefits as follows:

Regarding the environment: Viet Nam is the country with a small, limited land area and high population density. Almost the factories are near the cities, town with many people living. So the shelling will adversely affect the air, soil, water of the residents nearby. **So, importing borma kernel will help Viet Nam save huge environmental treatment costs and land Resource.**

- **Regarding Constructions:** Building factories (only from the stage of peeling to finished products) is easier, lower construction costs, do not need large areas, so it will be easier to build in rural areas far from towns, cities... and create more jobs for people in those areas.
- Shipping costs: **Reduce 70 percent of shipping costs from Africa to Vietnam compared to importing raw seeds.**
- **Reduced reliance on import of raw cashew nuts which has recently led to speculation of raw cashew nuts, which forced factories to buy at high prices, leading to unprofitable processing.**
- **Help deep and effective division of labour** between African cashew production countries and Vietnam cashew processing countries, helping both sides benefit. For the benefit of Africa, you can contact us for more sharing.

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Author Profile

Vu Thai Son is the founder and General Director of Long Son Joint Stock Company, the biggest processor and second biggest kernel exporter of Viet Nam. He has more than 25 years' experiences in cashew business (RCN, Kernel global trade, processing etc.)

The Status of Cashew Processing in Africa

Cashewinfo Research

Summary: In Africa, the overall installed processing capacity is likely to be around 550,000 tons by the end of 2020. But in 2019, the RCN processed locally is estimated in the region of 190,000 and 200,000 tons, of which Cote d’Ivoire accounts for 65,000-70,000 tons, followed by Mozambique at around 50,000 tons and Nigeria processed in excess of 25,000 tons.

BENIN

- In Benin, there are about nine cashew processing factories having an installed processing capacity of 43,500 tons. However, the operating capacity is less than 50 percent at around 20,000 tons (approximately). In 2019, Benin is estimated to produce 140,000 tons of RCN.
- ETG (Export Trading Group) is currently setting up a processing facility in Benin with an installed capacity of 7500 tons, which is scheduled to be operational by June 2020. Including ETG, the installed cashew processing is likely to increase to 50,750 tons in 2020.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
FLUDOR Cana/Bohicon	15,000	info@fludorbenin.com +229 94787007
TOLARO GLOBAL Tourou	6000	serge@tolaroglobal.com
AFRICA NEGOCE INDUSTRIES Djrègbé	5000	anindustrie@gmail.com +229 95957311
AFOKANTAN Tchaourou	5000	info@afokantan.com josiane@afokantan.com
KAKE-5 Savalou	3000	kake5industry.sa@gmail.com +229 95157941
DONGA TREASURES Djougou	3000	omarbtchane@gmail.com +229 67083479
BPS Akassato	3000	henrystanly@eisenbps.com +225 97975846
LA LUMIERE Tchetti	2500	lalumieresarl@yahoo.fr +229 95450790
NAD & CO Badekparou	750	tarrafgeor@yahoo.fr +229 97898120

BURKINA FASO

- In 2019, Burkina Faso RCN production is estimated at around 90,000 tons. It has 14 cashew processing factories having an installed capacity of 18,000 tons.
- SORTIA-B is planning to increase the cashew processing capacity from the present level of 3000 tons to 5000 tons in the next three years. About 400 tons of cashew kernel is being exported to California/USA.
- ANATRANS sources fair trade, organic and conventional cashews from around 3500 local farmers. It then shells, peels and grades them for export to clients in Europe and the United States.

- ANATRANS has been certified fair trade by FLO-Cert since 2011 and is certified organic by Ecocert. It meets internationally recognised standards, including those set by the International Labour Organisation (ILO). ANATRANS has been an Oiko Credit partner since 2017.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
ANATRANS Bobo Dialaso	10,000	harm.anatrans@gmail.com hvoortman@anatrans-bf.com +226 66975265
SOTRIA-B BANFORA	3,000	burkinacajou@gmail.com +226 70232796,+226 20910995
GEBANA Burkina Faso (formerly known as GEBANA Afrique) Bobo Dialaso	1,500	

Cote d'Ivoire

- In 2015, the Côte d'Ivoire introduced a relatively high export tax of FCFA 30 per kg of RCN. Since 2016, funds from this tax are used to subsidise the local processing industry at a rate of FCFA 400 per kg of processed cashew kernels and FCFA 150 per kg for unpeeled kernels. The export tax adds to existing export levies (FCFA 10 per kg of RCN) to finance critical sector support functions. An obligation for exporters to reserve at least 15% of their RCN volumes for local processing (Côte d'Ivoire).
- In 2019, the Cote d'Ivoire RCN production is estimated at a new record in the region of 780,000 and 800,000 tons, in the process emerged as world top producer as well as exporter of RCN.
- In 2011, the Cote d'Ivoire processed around less than 10,000 of cashew locally and in 2019, it is estimated to have processed close to 70,000 tons.
- By the end of 2020, the Cote d'Ivoire cashew processing installed capacity is likely to exceed 200,000 tons. In 2018 and 2019 Cote d'Ivoire has processed in the region of 65,000 and 70,000 of cashew locally.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
FMA Industry SAS KORHOGO	10,000	contact@fma-industry.com +225 793788 41
CAJOU DES SAVANES (CASA- SA) Bouaké	5,000	hussain.gilani@casa.ci +225 05950800
KIYO Zuenoula	6,000	hussen.kirmani@gmail.com +225 07057070
SITA.SA Odiene	20,000	sitasa06@yahoo.fr +225 076868 37
OLAM Bouake	2017:20,000 2018:20,000 2019:20,000	+225 06727313
OLAM Dimbokro Djekanu Toumodi complex	2017:15,000 2018:17,000 2019:18,000	+225 06727313
CILAGRI Abidjan	30,000	niamoutie1@gmail.com
QUAN THIEN IMEX Abidjan, ZI Yopougon	10,000	bobby.vo@qtimex.ci +225 21326313/07886809

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
IVOIRIENNE DE NOIX DE CAJOU Azagué	12,000	salma@seetarooconsulting.com +225 89709119
AFRIQUE AGRI INDUSTRIES Lomo, Gouméré, Near Bondoukou	7000	dafttotal@gmail.com +225 49993338
SOTRAPACI (GROUPE S3C) Yopougon	6000	naomais@stnc-ci.com +225 08667566
AFRICA NEGOCE Bouaké	5000	usineaffricanegoce@gmail.com +225 07226869
NORD CAJOU Seguela	6000	alfarissiriki@gmail.com +225 07445184
ICN- Ivory Cashew Nuts Bouaké	10,000	olivier.pezenec@icn.ci +225 86535740
NOVAREA Yamousoukro	15,000	aboubacar.toure@novarea.net +225 08775975
SOBERY Bouaké	5000	didier.coulibaly@sobery-ci.com +225 08515994
AFRICAJOU Bondoukou	2500	diabylucman@gmail.com +225 07093084
AGRO FRONAN Katiola, Fronan	3000	ayepa.charles@yahoo.fr +225 58581144

GHANA

- In Ghana, two major cashew processors USIBRAS Ghana Ltd (installed capacity of 35,000 tons) and Rajkumar Impex Ghana Ltd., with installed capacity of 15,000 tons have stopped their operations citing lack of raw materials to process.
- Now, very few factories are operating in Ghana; at present with overall installed processing capacity of less than 10,000 tons.
- Kona Agro processing has partnered with Maxwell foods and is planning to increase its installed capacity from 2500 to 10,000 MT over a four-year period.
- In 2019, Ghana's RCN production is estimated at 110,000 tons.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
Mim Cashew & Agricultural Products Ltd Bonkoni	4500	matthew@mimcashew.com +233 285331675
Kona Agro Processing Accra	2500	Taylorraymond@hotmail.com Kwabenat@yahoo.com +233 504229559 /+233 244272299
Gensap Ventures Sunyani, Bono Region	500	Gnsarp123@hotmail.com +233 285331675
Winker Investments Ltd. Mobole Ningo, Prampram District	500	niismith@winkerghana.com +233 207211341
Nafana Agro-Processing Co. Ltd. Sampa	500	Joseph.d.obah@gmail.com , info@nafa-naagro.com +233 549047595
Nimdee Hyeren Company Limited Jaman North	500	ckkumah@gmail.com +233 24230399602

Mozambique

- Mozambique is by far the African country with the highest utilization rate. The Government has imposed a levy of 18 percent on export of raw cashew and has provided protection to Mozambican cashew processors. In addition, before opening the export of RCN, there is privilege of the right to supply raw cashew material to national industry.
- The country has observed a major expansion in local processing, from 3000 Ton in 2003 to 110, 000 Ton in 2018. In total, there are 17 processing plants.
- Condor started its operations in Cashew since 2004 with the opening of the Nametil Factory. In 2008, the Condor opened its second factory in the outskirts of Nampula and in 2018 the third factory was inaugurated. The combined installed RCN processing is 25,000 per annum.
- The main markets are the EU, USA and the Middle East (especially for broken grades). Condor nuts are sold worldwide under the Zambique brand.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
Condor Nuts Anchilo	10,000	condornpl@teledata.mz +258 826015560
Condor Caju Nametil	10,000	condornpl@teledata.mz +258 826015560
Olam Moç. Monapo	13,500	+225 06727313
Olam Angoche	2000	
Olam Mogincual	500	
Caju Ilha Lumbo-Ilha Moç	4500	myagafar@agtmz.com +258 826012400
Caju Ilha Angoche	4500	myagafar@agtmz.com +258 826012400
Oziva Caju Mogincual		846034967
Indo Africa Mecua-Meconta	2000	shuj22@yahoo.com +258 826700620
Korosh Chiure-Cabo Delg.	5000	
Korosh Nampula	7000	
MOCAJU Murrupula	3000	ajit@metl.net +258 846359059
EMAJU Monapo		else_marie@gmail.com +258 872249773
ADPP ITOCULO		cajito@tdm.co.mz +258 864749131
SUNNY M. I REX	10,000	caetano.bernardo@gmail.com +258 842999808
Gowri Shankar, Lda. Liupo		eugeniodelima7@gmail.com +258 848098272
Condor Anacardia Macia	5000	condornpl@teledata.mz +258 826015560

RCN processed by Olam in Mozambique during 2017 to 2019

City	RCN Processed (tons)
Monapo	2017 : 9600 2018 : 10,928 2019 : 9800
Mogincual	2017 : 1100 2018 : 500 2019 : 710
Angoche	2017 : 1770 2018 : ,991 2019 : 2000

ETG in Cashew Processing

- ETG (Export Trading Group) is present in over 25 countries in Africa. Currently has plants for processing in East African countries of Tanzania and Mozambique, having a combined annual cashew processing capacity of 25,000 tons.
- ETG is currently setting up a processing facility in Benin with an installed capacity of 7500 tons which scheduled to be operational by June 2020.
- ETG exports its processed cashew to various countries including USA, Canada, UK, Europe, Middle East, Japan and other countries under the brand name “KOROSHO”.

NIGERIA

- In 2019, the Nigeria RCN production was estimated in the region of 230,000 to 240,000 tons. Vietnam is the largest RCN importer from Nigeria where in 2019 having accounted for 157,000 tons, which is more than two-third of the total Nigerian production.
- In Nigeria, the total cashew installed capacity is about 48,000 tons. Olam and Valency are the two top cashew processors and Huxley is slowly emerging as the third largest processor.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
Olam Ilorin	2017 : 4500 2018 : 6000 2019 : 12,000	+225 06727313
VALENCY Cashew Processing Ltd Ogun State	12,000	arvind@valencyinternational.com +234 9070060300
Huxley Industries Ltd Lagos	12,000	satya@huxleyglobal.co.uk +234 8027099999
Abod Success Inv. Ltd Ogun State	2500	Tunde@abodsuccess.com.ng +234 8038282779

SENEGAL, GAMBIA and GUINEA BISSAU

- The combined RCN production of SEGABI (short form) is estimated at around 250,000 to 260,000 tons in 2019. Guinea Bissau alone accounts for 190,000 to 200,000 tons.
- The combined installed cashew processing capacity in SEBAGI in 2019 is estimated well over 38,000 tons, in which Bissau alone accounts for 29,000-30,000 tons. But the actual processing is estimated about 12,000-13,000 tons. Here also Bissau accounts for nearly two-third of the processed cashews.
- In Bissau, some of the medium scale cashew processing factories are Arrey Africa SARL and West African Cashews.
- Senegal is having a cashew processing capacity is over 5000 tons. Cajou Casamance is the largest cashew processing factory having an installed capacity of over 1000 tons. Okio Credit provides working capital for the company to process cashews. SCPL Cajou, comes next, which sells under the brand name DeliCajou, with installed capacity of 600-700 tons.

TANZANIA

- In Tanzania, the current cashew processing installed capacity in around 48,000 tons. During 2018-19 and 2019-20 season, the Tanzanian RCN production is estimated around 225,000 tons. But the actual cashew processed locally is estimated at less than 15,000 tons.

TOGO

- Togo is estimated to produce about 24,000 tons of RCN in 2019 and is planning to increase the production in excess of 30,000 tons in the next few years.
- The Swiss Investment Company responsAbility made their first investment in Togo in Cajou Espoir. The first container of processed cashews was exported to Europe in 2010 and started exporting kernels to US in 2012. In 2019, the Togo's cashew kernel exports are estimated around 500 tons, of which 75 percent to Europe and 25 percent to USA.
- Togo has also adopted a tax on cashew exports, baptized Cashew Nuts Tax (PNC). The tax which was established in line with a decree issued on October 3, 2018, amounts to CFA40 per kg of raw nuts and CFA5 for processed nuts.

Company	Installed RCN Capacity (tons)	Contact Details (Email id and Phone)
Cajou Espoir Tchamba	3000	info@cajouespoir.com +228 90 04 59 14
Cajou Espoir Blitta Bilita	3000	info@cajouespoir.com
Cajou du Centre Lome	4500	+228 90 04 00 66

Cashew Processing in Mozambique: Critical Success Factors

Ilidio Bande, National Director at INCAJU, IP



Located in the South-eastern part of Africa, Mozambique is one of the fastest growing economies, bordered by Swaziland, Zambia, South Africa, Tanzania, Zimbabwe and Malawi. Its long Indian Ocean coastline position serves as a gateway to global markets for some of these neighbouring landlocked countries.

In Mozambique, cashew nut is the main source of income for over 1.4 million smallholders, representing up to 70 percent of their revenue. The national cashew orchard comprises of ~40 million cashew trees, correspondent to 778 thousand Ha. Cashew trees are distributed along the coastline, which spans over 2470 km. There are nine provinces that are major producers, namely Nampula,

Cabo Delgado, Zambezia, Inhambane, Gaza, Manica, Sofala, Maputo and Niassa.

Cashew subsector is one among the main contributors in export earnings from Mozambique. For example, from 2014-2019, the industry exported almost 40 thousand tons of cashew kernels and earned US \$ 250 million. The United States of America and Europe remain the preferred destination for processed kernels from Mozambique. With regard to the export of raw cashew nuts, a total of 160 thousand tons were exported, generating over US \$ 240 million. India and Vietnam are the major buyers of raw cashew nuts from Mozambique.

Mozambique is by far the African country with the highest utilization rate. This relative advantage of the Mozambican processor is a result of the protection provided by the Government through the application export of raw cashew subject to 18 percent tax. In addition, before opening the export of RCN, there is privilege of the right to supply raw cashew material to national industry.

Due to the seasonality of the crop, processors require large amounts of liquidity during the harvest season to buy and store an entire year's stock of raw material for processing. In response INCAJU, IP created in 2000 guarantee fund, where the fund supports up to 80 percent financing. The fund is a risk-sharing system aiming to finance the acquisition of cashew raw material, establishment processing plants and purchase equipment.



During the last five years, the average RCN farm gate price was 1 USD/kg. In order to ensure price transparency and reducing asymmetric information the Government introduced the reference farm gate price. For this season the farm gate price set was at 34 Meticals/kg the parity price was 45 Meticals/kg.

The country has created a robust processing industry. In recent years, processors invested in automatization, mixing of manual and mechanical technologies to achieve a better balance between the need to create employment, increase capacity and reduce costs based on a more stable workforce. As a result, the country has observed a major expansion in local processing, from 3,000 tons in 2003 to 110,000 tons in 2018. In total, there are 17 processing plants employing nearly 17,000 people, from which 10,000 are women's.

The average processed price exported during the last five (5) years was 7,000 tons. More than 50 percent of processed kernel were exported to USA, the remaining to EUROPE. The average price was 6.5 USD/kg. The government body is considering suggestions with regards to the 'premium' for single origin in-situ processed raw cashews.

As a final remark, to enhance business with worldwide cashew stakeholders we propose the following solutions:

- Building a strong reputational image by increasing

domestic processing

- Ongoing market intelligence and development in local and foreign markets
- Encouraging innovation through value chain funded for new product development and differentiation
- Engaging in partnership, especially in research, crop managing, processing, equipment and packaging
- Piloting a feasibility study to assess the cost and benefits associated with processing cashew by-products, and evaluate the economic and social effects of value adding in Mozambique
- Attract investment in cashew industry prioritizing domestic processing, food safety standards, and traceability.
- Join forces aiming to provide information about global market trends and technological innovations.
- Provide an assistance and advocacy for the stakeholders in order to strengthen cashew business environment and industry sustainability.

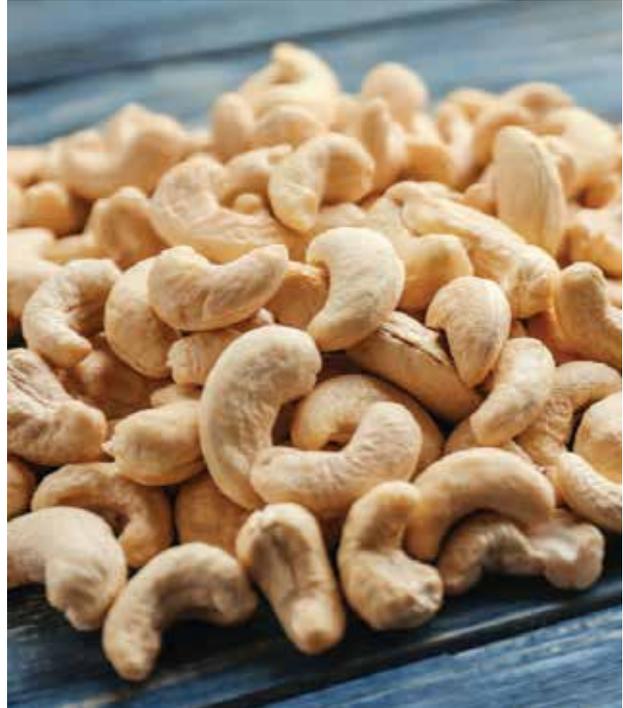
Authors Profile

Ilídio Afonso José Bande, National Director at INCAJU IP. He is an Agronomist, working on the Agriculture Sector for almost 30 years.

In 2016, Mr Ilidio Bande was appointed as National Director at INCAJU. Recently, he was directly involved on the development of the Institutional Policy Reform which will contribute to improve the performance and competitiveness of the Cashew Subsector in Mozambique.

The Spectacular Growth of Cashewnut Kernels in European Countries Over the Years

Kees Blokland, Director of Global Trading & Agency BV, Netherlands



The overall growth of cashew imports in to the EU since 2015 is spectacular, except for the year 2018, where the growth has been negative in 2018.

The price increase of cashews that started during the 2016/2017 season only hit the shelf prices hard during 2018 which caused the shrinking of the market size.

As the shelf price for the consumer was up quite a bit, the consumption has slowed down. It shows the vulnerability of the cashew market, which will remain volatile and sensitive and really moves on crop volume being in balance (or not) vs the market demand.

Year	Imports EU	Growth in mTon	in %
2015	170.277		
2016	178.622	8.344	4,90%
2017	187.945	9.324	5,20%
2018	178.324	-9.621	-5,10%
2019	196.025	17.701	9,90%
2020	209.123	13.099	6,70%

Country	2015	2016	2017	2018	2019	Grand Total
Africa	3,774.80	5,137.00	3,516.50	4,480.90	8,492.93	25,402.13
India & Vietnam	85,250.80	87,892.90	94,689.60	93,516.80	1,23,696.23	4,85,046.33
Grand Total	89,025.60	93,029.90	98,206.10	97,997.70	1,32,189.15	5,10,448.45

Country-Wise Import (For 2019, figures mentioned are from Jan to Oct) – QTY in tons

Countries	2014	2015	2016	2017	2018	2019	Grand Total
Austria	201.10	239.30	315.70	85.80	243.80	641.20	1,726.90
Belgium	3,755.60	3,824.10	3,430.80	3,983.70	5,128.80	7,274.70	27,397.70
Bulgaria	593.30	622.60	449.50	430.30	548.90	626.70	3,271.30
Croatia	70.30	60.60	93.20	67.20	84.90	140.50	516.70
Cyprus	176.00	146.70	116.30	109.40	126.00	145.70	820.10
Czechia	555.10	568.10	317.00	444.30	385.10	522.40	2,792.00
Denmark	387.90	360.80	445.60	364.60	487.70	412.90	2,459.50
Estonia	108.80	290.20	433.10	262.20	270.20	238.40	1,602.90
Finland	305.60	220.90	267.20	176.00	185.70	214.80	1,370.20
France	5,741.60	5,335.70	5,337.00	5,523.90	6,062.20	6,721.20	34,721.60
Germany	12,752.50	17,385.00	22,749.60	26,686.20	23,786.90	32,095.70	1,35,455.90
Greece	1,863.30	1,490.10	1,477.80	1,162.20	1,420.20	1,835.00	9,248.60
Hungary	286.20	238.50	238.40	190.80	320.30	273.60	1,547.80
Ireland	-	-	-	0.60	48.40	67.70	116.70
Italy	6,131.90	5,924.40	6,438.70	5,763.70	7,144.10	8,752.80	40,155.60
Latvia	231.80	111.10	124.60	150.40	129.50	165.10	912.50
Lithuania	947.90	1,002.10	820.60	809.30	930.10	1,531.50	6,041.50
Luxembourg	81.50	84.50	429.90	-	55.20	184.50	835.60
Malta	58.40	27.40	20.80	-	10.90	31.80	149.30
Netherlands	41,206.30	44,809.40	44,146.50	44,368.60	39,674.20	40,536.40	2,54,741.40
Poland	876.30	1,134.40	1,126.80	909.50	936.40	1,567.00	6,550.40
Portugal	398.30	429.80	524.40	476.60	572.00	743.80	3,144.90
Romania	240.20	111.50	171.20	15.90	78.60	185.20	802.60
Slovakia	35.20	1.30	0.50	0.40	67.10	41.70	146.20
Slovenia	0.60	0.40	0.40	-	0.50	63.60	65.50
Spain	3,291.40	3,800.10	3,011.10	4,216.40	5,704.20	7,178.40	27,201.60
Sweden	1,238.20	1,168.70	1,415.20	1,119.80	1,515.70	1,621.80	8,079.40
United Kingdom	13,977.40	16,224.20	16,663.30	17,081.60	16,716.90	17,018.20	97,681.60
Grand Total	95,512.70	1,05,611.90	1,10,565.20	1,14,399.40	1,12,634.50	1,30,832.30	6,69,556.00

The year 2019 has witnessed the strongest growth in the past 5 years and would one expect the market to continue to grow, the only question is at what percentage will it grow? Should one have to take an average of the three (3) positive growth years, this comes to 6-7 percent, slightly at a slower pace than the 2019 increase and one can expect 2020 EU imports to climb to approx. 209,000 tons of kernels.

In the last decade, WW320 average price ranges from USD 3.22 to 5.02 per lbs. The highest average price was observed

in 2017; in 2019 ww320 averages USD 3.63 per lb.

The million-dollar question is: will the world wide crops of Cashews grow sufficiently as well and will the Raw Cashew Nuts (RCN) be at the right destinations for processing in time to cater for the increasing demand for cashew kernels?

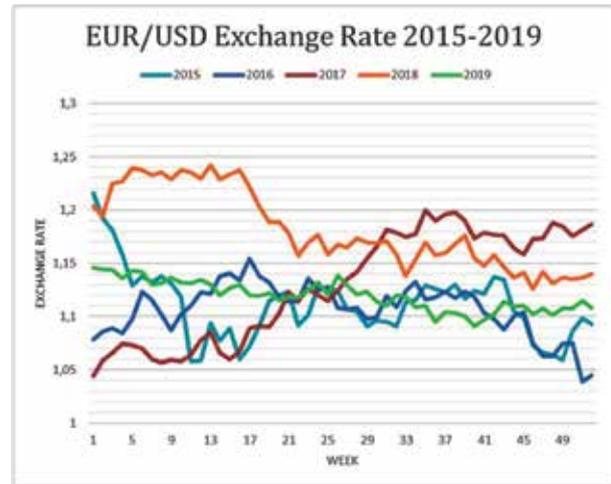
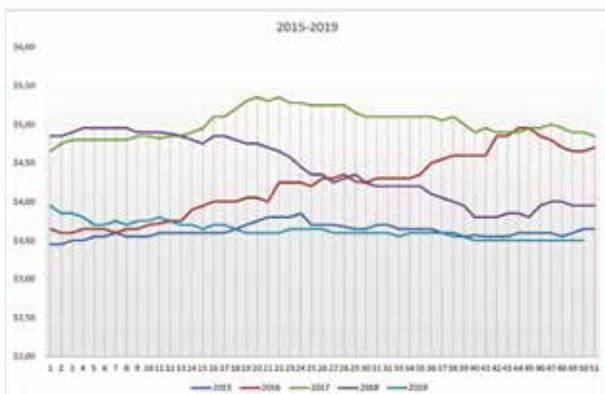
Generally, Cashews are the most favorable nut for single consumption and nuts in general are more and more considered as healthy food. Trends that are seen in the

past 12-24 months are:

- Cashew pieces are used to make cheese & butters, feeding into the vegan diet, that many embrace these days.
- Cashews being organic, which is a strong growth market, even though it is still niche. Demand for natural products (super foods, etc.) has shown strong growth and since cashews have had some form of heating during the process, raw cashews are in fact a delicacy.
- More demand for cashews in the industrial market.
- Stronger focus on African processing of cashews.
 - a. What impact does it have on social life of the farmers & employees (requiring for example SEDEX certification) and environment.
 - b. A call for more transparency in the supply chain and a request for analysis on -for example- the CO2 footprint of African cashews processed in Asia.
 - c. Story telling on cashews seems to gain some momentum.

The question is if this is a trend and therefore potentially a turn around in the cashew industry, since a cashew with a good story may cost a bit more than a cashew without a story.

In the below charts you see the cashew price movement for WW320 in the past five (5) years, as well as the exchange rate of the past five (5) years. EU being a Euro country, the strengthening of the US dollar has had an impact too. So to analyze the real price impact is always a combination of the US dollar prices and the EURO/USD exchange rate for that period when we take Euro prices on the shelf.



Maybe another point that needs to be considered: will the EU imports beat the US imports? America shows import growth too, but our observation is that the current lower prices have not reached the consumer to the full extent.

With the increasing almond prices, almond consumption does not grow while cashew consumption is increasing so the appetite for cashewnut kernels is there and has potential to grow again on the back of the lower market prices.

All in all, the cashew market must be expected to be vibrant and active for the 2020 season and beyond.

Authors Profile

Kees Blokland is a Director of Global Trading & Agency BV in the Netherlands. Global Trading & Agency BV is a broker in all kinds of tree nuts and dried fruits. We have a strong reputation, being trustworthy and experienced nut brokers in the international market ever since. Our strong expertise is in cashew nut kernels and macadamias.

I was involved in the founding of the ACA (African Cashew Alliance), am ambassador for the INC and arbiter of the Dutch Dried Fruit Association.

What's New in FSMA: Food Safety Dashboard to Track FSMA Progress

Bob Bouer, President, AFI



The U.S. Food and Drug Administration (FDA) recently established a Food Safety Dashboard, designed to track the impact of the seven foundational rules of the FDA Food Safety Modernization Act (FSMA). The seven rules are:

- Preventive Controls for Human Food
- Preventive Controls for Animal Feed
- Third-Party Lab Accreditation
- Produce Safety Standards
- Foreign Supplier Verification Program
- Sanitary Transportation of Human and Animal Food
- Intentional Adulteration

The dashboard will help measure the progress/ effectiveness of the rules, help the agency make any needed refinements to its implementation and provide a valuable tool for industry to stay current with FSMA

enforcement. The dashboard is available as part of the FDA-TRACK program, the FDA's agency-wide performance management system.

In September 2019, FDA announced the availability of the initial metrics that begin to track outcomes for three FSMA rules in the areas of inspections and recalls:

- “Current Good Manufacturing Practice, Hazard Analysis and Risk-Based Preventive Controls” rules for both human food and food for animals (preventive controls rules).
- Imported food safety, including data relevant to the “Foreign Supplier Verification Program” (FSVP) rule.

FDA says additional performance measures and data will be released for other FSMA rules in the future.

All FDA-regulated products imported into the U.S. are required to meet the same laws and regulations as domestic food. The current data on inspections provide a snapshot into both domestic and foreign industry compliance with these regulations. The effectiveness of U.S. importer oversight of foreign suppliers is tracked through the classification of FSVP inspections.

FDA said it recognizes that the prevention-oriented system FSMA created is not failproof. With this in mind, it's also tracking the speed of response to problems when they do arise. One of the metrics the agency is beginning to track on the dashboard is how quickly a firm issues public notification for a Class 1 recall – the most urgent type of recall – for human and animal food. A salmonella issue on a product such as cashews is an example of a Class 1 recall. The dashboard will be updated periodically with metrics for Days from Recall Initiation to Firm Press Release to the Public.

Many factors will influence the interpretation of the data, especially in the early phases of FSMA implementation. For example:

- The preventive controls and FSVP rules featured staggered compliance dates based on business size to allow smaller businesses more time to comply
- FDA does not inspect the same firms on a quarterly or annual basis, so these inspection results do not represent a consistent cohort of firms
- **The FDA's approach to implementing the FSMA rules has been to "educate before and while we regulate." That means some shortcomings found in earlier inspections did not result in enforcement; FDA's intention was to help bring the industry closer to compliance. The focus is shifting to enforcement, which likely will create different numbers.** (It should be noted that even during the education phase, the agency took enforcement actions on food safety problems that posed a threat to public health.)

Other variables factor in as well. For example, FDA conducts two types of inspections related to the preventive control for human food rule. One is a complete inspection of all aspects related to FSMA; it's referred to by the agency as a full-scope inspection. The other is focused more on the Current Good Manufacturing Practices (CGMP) portion of FSMA, referred to by FDA as a limited-scope inspection. A CGMP inspection provides FDA with a snapshot of a facility's food safety practices. These inspections take much less time than a full inspection but conducting them enables the agency to increase its inspection footprint. If, during a CGMP-type of inspection, an inspector thinks it's necessary, the inspection can be ramped up to a full FSMA inspection. As of now, the statistics on the dashboard pertain only to full FSMA inspections.

Given the factors above, the agency expects it will take several years to establish meaningful trends to evaluate progress toward achieving the performance goals presented on the dashboard. **However, periodically**

reviewing the data on the dashboard will allow foreign exporters and U.S. importers to better understand emerging compliance issues and be in a better position to take proactive steps to ensure compliance.

An example of how the data is impacted by the phased-in compliance dates is the percentage of inspections in which facilities have a written food safety plan when required. In 2017, when only large companies – which, for the most part, have more resources to put toward compliance – were inspected, 100 percent had food safety plans. By 2019, that number dropped to 91 percent. That might sound alarming but it's likely that all large companies were still in compliance and that FDA worked to educate the smaller companies who fell short.

Preventive Controls

The identification and creation of preventive controls to mitigate identified food safety hazards are key components of FSMA. A preventive controls approach to food safety builds on – but is not the same as – Hazard Analysis Critical Control Points (HACCP), something some in the industry haven't realized yet. In fact, the data to date shows that nearly one-quarter of the facilities inspected that did have a food safety plan did not have appropriate identification of hazards and preventive controls identified for those hazards.

Therefore, producers of food reading the information in the dashboard should immediately review their food safety plans to ensure they appropriately identify hazards and include the preventive measures needed to mitigate or eliminate them.

Of interest to readers of this publication because of tree nut allergies, the dashboard shows that 10 percent of the facilities inspected are not compliant with all applicable allergen control requirements. Of course, that doesn't apply to facilities producing only cashews; it applies to facilities where there's a risk of allergen cross contact with another product that is not an allergen.

U.S. Importers

A separate part of the dashboard tracks the compliance rate of U.S. importers; they're required to have documentation on hand that demonstrates compliance with the FSVP rule. That rule says all imported foods must meet the same food safety standards as food produced in the U.S.

By inspecting importers, FDA is again increasing its inspection footprint because these inspections give FDA a portrait of foreign facilities. If in reviewing an importer's records related to a foreign facility an FDA inspector can see there are no known food safety issues, the agency has saved valuable resources compared to having to travel to that foreign facility to conduct an inspection. Of course, if an issue is found, the inspection has enabled FDA to act much sooner to address that food safety problem.

FSVP is new territory for industry and FDA. Before this regulation, importers were not required to have such documentation. (Some were already requesting it, though not at the level required.) So the compliance rates for FSVP are expected to be lower than those for producers and that's how things are playing out. The information is reported differently than for producers, so a direct comparison isn't available. However, 76.1 percent of FSVP inspections in Fiscal Year 2019 resulted in no action needed – the FSVP was sufficient. Another 23.8 percent resulted in voluntary action by the importer. Only .02 percent required official action by FDA. It's expected that as the industry continues to learn about the rule and compliance, the 76 percent number will climb and the 23 percent number will decline.

Benefit of the Dashboard

It's important to note reading the dashboard will not tell a reader how to comply. The biggest benefit to reading the dashboard is that it provides the reader with information on where others are falling short. The reader should then refer to his/her own food safety plan to ensure the shortfalls noted on the dashboard aren't an issue for his/her facility.

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Authors Profile

Bob Bauer is the President of the Association of Food Industries, headquartered in Neptune, N.J. The association has approximately 1,000 member companies throughout the world.

Bauer has served as President of AFI since January 2002. Prior to that, he served as Vice President of the organization for nearly six years.

In 2016-17, he was invited to and served on the task force that developed the Food Safety Preventive Controls Alliance course – with curriculum recognized by FDA – to teach the food industry about the requirements of the Foreign Supplier Verification Program provisions of the Food Safety Modernization Act. Mr. Bauer has been an instructor in more than 30 offerings of the course since it was launched in 2017.

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Tanzania Aims to Produce 10,00,000 tons of RCN by 2025

Francis Alfred, Director General, Cashewnut Board of Tanzania



Tanzania is among the traditional cashew nut producers in the world. Its production capacity stood over 20 per cent of global production in the 1970s peaking at 145,000 tons in 1974. From 1975 to 1987 production decreased to 16,000 tons due to abandonment of farms, severe outbreak of pests and diseases and low prices. Production regained again significantly from 2003 and reached 158,000 tons in 2010s and latest paramount increase of production was observed in the year 2017/2018 when 313,000 tons was produced.

Tanzania has a potential of increasing production internally due to availability of ample land for farm expansion, increasing productivity from the current average of 10kg per tree per annum to 25 kg per tree per annum, attractive farm gate prices given to the farmers through Warehouse Receipt System (WRS) and market opportunities provided by seasonality influences.

Growth prospects for both production and processing are high, due to the following aspects; Area under cashew production is significantly expanding as the crop is being planted in the new areas; rigorous support given to the farmers through effective distribution of improved seed

varieties especially to new areas which has increased acreages under cashew production; enhanced extension services to the farmers and commitment from stakeholders to scale up processing activities by investing in the processing facilities in Tanzania.



Production of Cashew nuts in Tanzania is characterized by a large number smallholders' farmers operating a subsistence level as important source of income. This is mainly observed in the Southern and Coastal regions of Mtwara, Lindi, and Ruvuma which account for 80-90 percent of Tanzania's marketed cashew crop. **Due to expansion program of planting cashew trees in new areas, cashew production regions have increased from previous 5 regions to 17 regions with acreage of 2,353,147 and 280,510 farmers as per Cashew Farmers Information system.** Tanzania is in progress of registering all cashew farmers in the country. Its estimated that, currently there are 317,000 cashew farmers and the number keeps on increasing.

Cashew nuts sub sector is one among the main contributors in export earnings, ranked the first among the export cash crops from Tanzania since 2017/2018. That contribution is mainly from the exports of RCN. The contribution will be even higher in future due to increasing interests among local and foreign investors in establishing local processing facilities, which will bring paradigm shift in terms of food quality, safety and hygiene, as well as market orientations.

Nonetheless, Tanzania is known to produce premium quality cashewnuts fetching higher prices in the world markets compared to cashewnuts from other countries in Africa. Such quality is attributed to favourable weather and soil conditions coupled with good agricultural

practices exercised in the farms. Most of the cashew nuts production in Tanzania (90 percent) is exported without being shelled. The main destination of exports being India and Vietnam where raw cashew nuts are processed and kernels exported or used locally.

Tanzania is endowed with huge fertile and arable land where large plantations can be established to feed into processing factories and export markets. This opportunity is open to both local and foreign investors looking for areas to develop viable business ventures in agriculture. The county has a substantial potential to increase production and value addition domestically beyond the current less than 20 percent while also capitalizing in production of other by-products. **Incentives in cashew processing include availability of land for building factories, good roads in cashew producing areas, reliable electricity, availability of cheap labour and Decision by the Government to devise special arrangement for local processors to access raw materials (RCN) during the season. Further no export levy is charged on cashew kernels compared to export of RCN which is charged USD 160/ton of 15% of FOB Value, whichever is higher.** We hereby invite investors to invest in establishment of cashew processing factories to utilize unexploited potentials.

After a record high RCN production of 313,000 tons in 2017/18, Tanzania produced 225,000 tons in 2018/19. The drop-in production was mainly attributed to bad weather condition in 2018. **Plan of the government is to plant at least 10,000,000 new cashew nut trees each year. Objective is to produce 1,000,000 tons of RCN by year 2025 and increase value addition from the current 20% to 60% of the locally produced RCN.**

The current season 2019/2020 began in 1st September 2019, and officially opened on 07th October by the Deputy Minister of Agriculture, Hon. Omary Mgumba. Buyers were invited to participate and they were able to apply for the buying licence which permits them to participate in the season auctions. There were 100 companies which were registered but only 63 companies were able to get the buying licence after meeting all the requirements and they were given clearance to fully participate in the auctions that started on 31st October, 2019. Up to now the total of 58 auctions have taken place in different locations.

Projections RCN production for this season 2019/2020 was approximately 290,000 tonnes but as we are coming to the end of the season, it shows that the target will not be achieved due to weather changes. Early rains which commenced in October and continued throughout to December has affected Cashew nut flowering and also contributed large amount of post-harvest losses. This was highly observed in the Coast region whereby more than 10,000 tons could not be sold in the auctions due to poor quality. **Since the beginning of the auctions to date 12th January, 2020 (11th Week) a total of 208,343.383 MT of RCN have been sold in 58 auctions worthy TZS Billion 546,114,867,695. The average price was TZS 2,612 per kg, the highest price being TZS 2,890/=per kg and the lowest is TZS 1,600/=per kg.**

In this current season the RCN have mainly been exported to two countries; India and Vietnam and the total RCN exported up to 12 January, 2020 is 138,529 tons of which 47,308 tons have been exported to Vietnam and 89,781 tons to India through Dar es Salaam and Mtwara port.

Cashew nut Board of Tanzania is expecting to adjourn the auctions by the end of January, 2020 in order to start another cashew calendar which involves various activities such as farm clearance, pruning and planting of new cashew trees.

Authors Profile

Francis Alfred is working as Director General Cashew Board of Tanzania (CBT) under the Ministry of Agriculture since April-2019.

Education: PGD- Project Management; Masters in International Business; BSc Agriculture General

Experience: Vast Experience in Management of both Private and Government Institution having worked with National Development Corporation for five years as a Director of Value Addition Industries.

Francis also has a wide experience in conducting research and consultancy works in agribusiness and Microfinance.

Utilisation of Cashew Shell Cake for Energy Generation

Sankaran Damodaran and Shankar Damodaran

Thermodyne Technologies Private Limited, India

PREAMBLE

In Cashew Processing Factories, a significant amount of Cashew Shell Cake is available. These may be disposed off in one of the following three ways.

- Land fill
- Organic manure
- As fuel for Process Steam / Power Generation

ENERGY GENERATION

The Cashew Shell Cake has a good Heating Value to be used as a fuel to generate steam. This can be low pressure for process steam or high pressure for power generation.

Cashew De-Oiled Cake (DOC) as fuel:

Typically, the Cashew DOC has the following properties:

Element	% by weight
Carbon	48.00
Hydrogen	06.00
Oxygen	35.00
Nitrogen	00.50
Sulphur	00.07
Moisture	08.20
Ash	02.23
Gross Calorific Value	4700 kcal/kg
Fuel size	Top Size – 25 mm
	6 mm – 25 mm - 40%
	Less than 6 mm- 60%

Good combustion characteristics are indicated based on its heating value, elemental analysis and sizing. These make it highly suitable for firing in a Steam Generator with a Spreader Stoker. High pressure steam generation

with compatible superheat can be generated to couple with a Steam Turbo Generator to produce power.

POWER GENERATION

Power Generation is an attractive option due to the following main factors:

- Cashew DOC has desirable properties to be used as a good fuel.
- Low fuel cost would result in low cost of Power Generation.

Power generation can be in one of the following two ways.

- When the cashew processing unit size is small and export of power may not be techno-economically viable, power can be generated just to meet the captive power load.
- For medium and large size units (say 3 MW and above), excess power can be generated for export.

For Typical cashew DOC, to generate 1 MW, you would need, 900 Kg/hr.

Allowing for variations in the DOC characteristics, and fuel handling spillages, add about 10% margin. Hence, let us consider 1tonne /hour, for 1 MW. This is assuming that the steam parameters are 45 Kg/cm²g at 425 deg C.

Design Considerations

Cashew DOC is to be considered as a Specialty Fuel and requires several factors to be taken into account for design of a Steam Boiler.

Major factors to be considered are mentioned below:

- Boiler Parameters:

Preferred steam outlet parameters would be 45 – 50 kg/sq.cm(g) and 400 – 425 Deg.C considering ash fouling characteristics. Since the typical Sulphur content is less than 0.1%, an Atmospheric Deaerator with Feed Water Temperature of 105 Deg.C to Economiser Inlet can be considered. Higher feed water inlet temperature can be an option from cycle efficiency point of view.

- Heat Transfer Surfaces

- Tall Furnace
- Low furnace outlet temperature
- Moderate superheat steam temperature
- Super heater spacing

- **Combustion System**

Combustion System forms a vital part of the Boiler, more so in the context of a speciality fuel, such as Cashew Deoiled Cake. Sizing and Bulk Density largely determine the type of grate system.

A Spreader Stoker with continuous ash discharge grate (either Reciprocating or Travelling) would be the preferred choice.

There are basically two types of Spreaders, namely, Pneumatic and Mechanical. In order to determine the best suited spreader sufficient quantity of sample fuel was obtained and trial tested in the “Fuel Flow Test Station” at Thermodyne Technologies in-house facility. Based on the flow tests, it was determined that Mechanical Spreader

would be the appropriate choice.

Case Study

Thermodyne Technologies has successfully designed, manufactured and supplied a 34 TPH / 45 kg/sq.cm(a) / 420 Deg.C Cashew DOC Fired Boiler. This has been coupled to a 6 MW Turbo Generator Set. The Turbo Generator and other Power Plant Auxiliaries like Condensing Turbine, Air Cooled Condenser were supplied by others.

The Boiler Parameters were chosen based on the quantum of cashew DOC available and the selection criteria already mentioned.

The Boiler is a Bi-drum Water Tube type with Reciprocating Grate Drag Chain Feeders and Mechanical Spreaders. The Boiler is also provided with Pneumatic Spreaders, Rotary Drum Feeders for firing other light density biomass fuels, suitably prepared.

The plant is located in Southern part of the State of Tamilnadu, India and has been in successful operation for over nine years.

Conclusion

Power generation utilizing Cashew DOC as fuel and with Boiler Steam Turbine route offers one of the best techno-economic choices for utilization of Cashew DOC. This is considering the electricity revenue benefits

- when maximum potential of Power Generation is achieved, revenue benefits accrue due to both saving of captive power and export of excess power.
- when matching power generation is done, benefits will be due to saving of captive power cost.

The choice depends on the size of Cashew Processing Unit and infrastructure availability for power export.

AUTHORS PROFILE



Sankaran Damodaran, Director / Thermodyne Technologies, B.E. (Mechanical)

Total experience over 50 years in engineering and development of Industrial Boilers, Fuel Systems and Pulverised Fuel Technology and Management of Medium Size Manufacturing Enterprise.

Has travelled widely to US, UK, Europe, South East Asia and Latin America in connection with business. Over Thirty-Five years of experience in establishment and management of Industrial Boiler Manufacturing Industry.



Shankar Damodaran, Vice President / Thermodyne Technologies

B.E. (Mechanical), University of Madras, India
MBA/MS Dual Degree, University of Tennessee, USA

Over 20 years of experience in Procurement, Manufacture, Supply Chain Management and Engineering (U.S. based Companies 16 years and India based Company four (4) years).

Has worked in Companies in USA and India in a chosen discipline mentioned above.



The Benefits of Having Roof Top Solar in Cashew Processing Factories

Urmil Raval, Director, Dryfruit Factory LLP - India

There's no other way but only a sustainable development is needed in order to create a greener and healthier environment. In this aspect, solar energy has many advantages and is one of the most beneficial and effective types of renewable energy.

DFFL would like to lead the change towards a greater use of Sun energy, thus putting Solar rooftop to handle its growing power requirements of the plant.

With solar on the roof, the power bills will be reduced massively as you will need less electricity from the grid. The cost of electricity generated from the grid is likely to rise in the coming years, so the cost of savings should also rise and with a linear power warranty of 27 years, one can expect long-term cost savings, thus avoiding the cost of expensive electricity from the grid.

The cost of installing solar panel is INR 60,000 per KVA which includes all other charges. In case of temporary power cut in the grid, the factories will run through solar and generator. There is a mechanism in CSS which will synchronise this system. If the power is not drawn from the grid, then you need battery back to run the factory.

The operational maintenance of solar is free. But, the thing you have to clean it with water periodically one in a week or every 15 days, which depends on plant location, dust and atmosphere.

Cashew processing factories are nowadays turning with highly automation and hence the power requirements are increasing when compared to last decades' trend of processing. Charges per unit of electricity is also increasing. Any cashew factory can save 50 percent of



their electricity bill each year and the investment may be free within seven years. The remaining 20 years is a surplus.

Typically, a large cashew processing factory involves a lot of labour oriented activities. When sunlight hits our factory, it warms our roof and pushes heat into the factory. Installing solar panels will block this sunlight from hitting the factory roof, thereby preventing heat from entering into the factory. So it will help to control the inside temperature of the factory and give an appropriate atmosphere with minimum ventilation facility which will help to prevent the product and working environment for the workers.



For a cashew processing plant with capacity of 24 tons per day requires approx. 350 to 375 KVA of total power. In general, factories usually install 50 percent of solar installation of their requirement of total power.

In DFFL, right now have 230 KVA of total power in grid and we have 110 KVA solar system which is sufficient up to 20 tons per day production. Note, DFFL has 28 tons of HVAC (heating, ventilation, and air conditioning) system in high care area and two (2) big AHU units too in plant apart of cashew processing machines. DFFL has also all other high

power machineries like IR dryer, cyclone for shell wastage other than usual shelling to packing machineries.

So overall Roof Top Solar is smart investment with:

1. Increases access to energy
2. Handsome returns with safe investment
3. Reduces carbon footprints
4. Green source of energy
5. Low maintenance cost
6. It doesn't required additional space for installation
7. Suitable to India climate

nanoPix Mayur: Customizable Colour Grading in Single Pass

Sasisekar Krish, CEO & Co-Founder, nanoPix



nanoSorter Mayur: **Mayur is the state-of-the-art grading system developed to deliver the highest quality standards of cashew kernel grades for our customers. nanoSorter Mayur has 12 very high-accuracy high-speed cameras and is based on imageIn Technology. The new Mayur, released on Nov-2019, has enhanced colour and characteristics resolution ability for accurate and absolute grading.**

Mayur can

- Produce 200KG/Throughput per hour with 7+2 Grades
- Detect and grade 25 top value cashew grades through planned 2 pass logic
- Give packable grades in a Single Pass
- Reduce labour
- Give higher throughput with lesser breakage
- Achieve consistent and predictable grades

nanoPix is an Image processing based product company from India focusing on cutting edge applications in the space of grading. Our flagship product, the nanoSorter range of machines, is based on the patented imageIn Technology. It offers cashew grading starting from 50KG to 200KG/Throughput per hour. **600+ nanoPix nanoSorter machine are in the market grading cashews in six different countries.**

It has a patented camera-guided singulation technology which pick-n-places kernels into individual scanning cups at incredible speed.

Overall, nanoSorter Mayur has helped in increasing quality and accuracy and has boosted productivity on the floor.

For further information on our company and the product please visit www.nanopix-iss.com.

Authors Profile

Mr. Sasisekar Krish is the CEO and Co-Founder of nanoPix, the man behind its patented technologies such as imageIn and nanoSorter that is making waves in the food-processing industry. He is an expert on VLSI and digital image processing.



Fuelling the Value Chain – Cashew Industry

Shoby Jose, Product Head – SME & Customer Engagement, Maersk Trade Finance

Trade is the engine of economic growth and the gains are well documented and multiple. However, the scale and complexity of the global trade eco-system is unparalleled. These global value chains add to the complexity with multiple goods and lending intermediaries, information asymmetry, and paper intensive processes, amongst others. These are all woven in a complex web of regulations, customs and currencies across geographies. It becomes extremely critical to streamline both the physical flow of goods as well as the money to succeed.

The Organisation of Economic Co-operation and Development (OECD) estimates that 15 percent of the overall cost of traded goods around the world is comprised of hidden costs, much of it a result of the manual processes still used by companies and vendors worldwide. Hurdles such as finding buyers, accessing funds, finding means to transport goods and managing risks can pose considerable stress and manpower.

“According to the World Trade Organization, access to trade finance is the second biggest obstacle to trade – infrastructure being the first. To stay relevant in today’s business environment, we need to keep pace with our customers’ needs and constantly strive to make things simpler for them. **With that in mind, Maersk Trade Finance has created a simple, end-to-end digital solution, removing the paper trail from traditional banking options, providing easy access to capital to customers when they need it the most,”** explains Vipul Sardana, CEO, Maersk Trade Finance.

Maersk Trade Finance, over the last four years has worked with its customers in the cashew industry, across Singapore, UAE and India. Cashew is one of the world’s biggest nut trading commodity. The primary flow of raw cashew happens from West and East Africa to India and Vietnam. **Maersk Trade Finance has financed over USD 200 MN of cashew trade and helped its customers grow**



their business by facilitating timely access to capital and simpler documentation which have always been a challenge.

Maersk Trade Finance provides an efficient and effective way of managing flow of goods and flow of money through a simple digital interface. **It offers financing solutions for both exporters and importers. This enables customers to work with a reliable transportation partners who is also funding their global trade.** The benefits include

- Easy access to capital to finance their business needs when they need it
- Quick and easy credit assessment, rewarding mutual relationship with customers
- Paperless transactions enabled digitally
- Faster release of funds enabling liquidity as there is no need to wait for a physical B/L
- Avoid the collateral trap as financing is primarily based on the cargo, that Maersk controls
- Reliable transportation and logistics partner

The Challenges of Cashew Processing in West Africa Despite the Availability of Adequate Funding

Dètongnon ATINHO, BeninCaju



West Africa produces about 45 percent of the world's cashew nuts. Local processing of cashew nuts allows West Africa to increase its wealth. It adds 50 percent more value as compared to the nuts exported in their raw state. Consequently, the States and their development partners are committed to supporting the West African cashew processors to better prepare them to seek appropriate financing. On the other hand, financing institutions are seeking to improve the supply of financing by controlling the financial risks of the sector.

Despite these efforts, access to financing remains one of the difficulties encountered in West Africa, which often boils down to the following points at the level of processors :

- Low management capacity
- Diversions
- Poor preparation for the kernels market entry (standards and quality, certifications, regulations) and
- Unfavourable evolution of raw nut prices locally and internationally

On the side of financial institutions, the challenges can be summarized as follows:

- Unpaid credits
- Lack of information on the sector, in particular the evolution of raw nut and kernels prices, the organisation of the sector, the agricultural calendar, the processing cycle, the necessary investments



- Late disbursement of campaign credits
- Lack of expertise in credit monitoring in agricultural sectors in general and for cashew nuts in particular
- Non-competitive interest rates compared to rates in other regions of the world and
- Financial resources not adapted to investment credits.

To definitively address the issues of financing cashew processing, processors should:

- Respect the rules and laws of business management
- Get training in entrepreneurship and business



- management and recruit professionals
- Strengthen their equity capital
- Respect as much as possible commitments, forecasts, domiciliations, and regulations and
- Be well prepared for the market entry of kernels (find out about standards and qualities, certifications, regulations)

As for financial institutions, they should :

- Promote training on the cashew sector for the benefit of staff
- Dedicate staff members to the financing of agricultural sectors in general, cashew in particular
- Rely on the technical assistance of organizations involved in the cashew sector;
- Subscribe to information structures on the sector such as N'kalo, Cashew Info, ACA, etc.

- Negotiate financial resources suitable for investment credits and finally
- Involve the processor in the search for solutions and explore the possibilities of extension, restructuring, consolidation, etc., if necessary.

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Authors Profile

Dètongnon ATINHO, a Beninese national, is a financial expert with 21 years of experience in accounting and financial management, most recently in cashew value chain financing. Dètongnon is currently in charge of the "Access to Finance" component of the BeninCajù project implemented by TechnoServe. He is also a consultant and trainer in business management and a lecturer at the International Polytechnic University OBIANG N'GUEMA M'BASSOGO (UPI-ONM) in Benin.

