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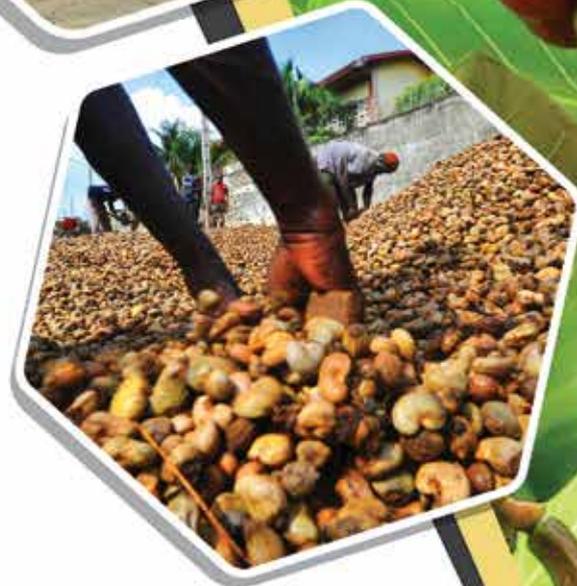
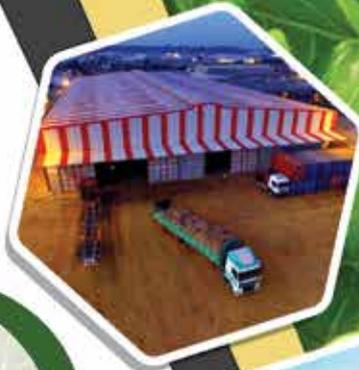
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PROGRAM SCHEDULE

Day - 1, Thursday February 1, 2018

12:00 noon onwards - Delegate Registration

01:00 - 02:45 pm - Networking Lunch

02:45 - 03:30 pm - Inaugural Function



Mr G Srivatsava
President



Hon'ble **Mr Suresh Prabhu**
Min. of Commerce & Industry, Govt. of India
(Via.video)



Dr. Adama Coulibaly
CCA, Cote d'Ivoire



Dr. R K Bhooedes
CEPCI, India



Mr Nguyen Duc Thanh
Vinacas



Mr Mahesh Patel
ETG Group

03:30 - 04:00 pm - Keynote Address



Mr Pratap Nair
INC Ambassador for
India & Board of Trustee Member

Session: Raw Cashew Crop and Market Review and Outlook

04:00 - 04:45 pm - Discussion: 2018 RCN Crop and Price Outlook

Focus Northern Hemisphere RCN crop for 2018. Specifically Cote d'Ivoire, India, Vietnam, Nigeria, Benin and Bissau. Also East Africa 2017 season. Three aspects from each origin- final assessment of 2017 crop, 2018 crop condition, 2018 crop estimation.

Moderator



Mr Krishanu Chakravarty
Farmer Fortune India Limited
(100% subsidiary of Star Agri)



Mr Vasudev Barkur
ETG Group



Mr Adeyemi Murtada Adeniji
Starlink Global & Ideal Ltd



Mr Mallikarjuna Kumaraswamy
Olam, Cote d' Ivoire



**Mr Ronald Edmond
Philippe Riboux,**
Fludor Benin



Mr Abdul Traore
AEC-CI

PROGRAM SCHEDULE

04:45 - 05:30 pm - Discussion: RCN Trade- A Runaway Train?

Defining RCN quality parameters for cross-border trade, standardising RCN trade contracts, arbitration and mechanisms for dispute resolution, challenges in storage and moving RCN

Moderator



Mr Ashok Narayanan

Orion Commodities



Mr Krishnan Nair
KGN Group



Mr Vu Thai Son
Long Son JSC



Mr Rajesh Thakker
CSKS International Ltd

06:00 - 07:30 pm - Cocktail Reception - Sponsored by Reliable Cashew

Day - 2, Friday February 2, 2018

08:00 - 09:00 am - Breakfast for in-house guest at conference venue

09:15 - 09:30 am - Announcements

Session: Cashew Kernel- buyer requirement, expectation and gap

09:30 - 10:30 am - Discussion - What does cashew kernel buyers want? Expectations and gaps

Understand the kernel buyers regulatory and business environment and changes in their market to serve them better

Moderator



Mr Vu Thai Son

Long Son JSC



Ms Amanda Wright
Humdinger Foods



Mr Amit Khirbat
Olam International Ltd



Mr Gunjan V. Jain
VKC Nuts Pvt. Ltd.



Mr Sadanandan Nair
Vink Corporation, DMCC

PROGRAM SCHEDULE

10:30 - 11:00 am - Networking Break

Session: Cashew kernel-update on standards, nutrition, food safety and promotion

11:00 - 11:45 am - Discussion on

- Cashew kernel standards.
- Update on food safety and quality
- Nutrition research on cashews

Moderator



Mr Hari Nair
Western India Cashew



Dr. Shobana Shanmugam
Madras Diabetic Research
Foundation (MDRF)



Mr Sabyasachi Tripathy
ITC Limited



Mr Paras Goyal
Olam International Ltd

11:45 - 12:00 noon - Presentation - Promoting cashew kernels - TBC

12:00 - 12:15 pm - Update on CasheWomen



Ms Viviane Alima M'Boutik
Competitive Cashew
initiative Accra

12:15 - 01:45 pm - Networking Lunch - Sponsored by Robust International

Session: New Generation in Cashew sector

01:45 - 02:45 pm - Discussion: The New Generation

The session will focus on new developments in production, processing, market, technology and financing through a series of short presentations followed by Q/A

Moderator



Mr Kalbavi Prakash Rao
Kalbavi Cashews



HE Dr. Hean Vanhan
Ministry of Agriculture
Kingdom of Cambodia



Mr Stefano Massari
Oltremare



Mrs Suchithra
Nanopix Integrated Software
Solutions (P) Ltd.



Mr Urmil Raval
Dryfruit Factory LLP



Mr Vipul Sardana
Maersk Line Trade Finance
Venture



Mr Jayaprakash Guraja
Agribazaar and the Chief
Operations of Staragri

PROGRAM SCHEDULE

02:45 - 03:15 pm - Networking Break

Session: Experiences of pioneers who have taken the plunge

03:15 - 04:00 pm - Discussion: Why we invested in cashews?
Understanding the motives behind people who have invested in cashew sector

Moderator



Mr Jim Fitzpatrick
Consultant and Mentor
Ingredient Sourcing Solutions



**Madam
Toure Diabate Massogbe**
SITA SA



Mr Anshul Jindal
Agribusiness Asia Pacific
responsAbility Investments AG



Dr. Ulrich Sabel-Koschella
Agricultural Value Chains for
Sustainable Development



Mr Soo Choi
G-Farm Corp

Session: Crystal gazing Cashew kernel market

04:00 - 04:45 pm - Discussion: Cashew kernel market review and outlook

Understand the kernel market drivers in key consumption market - China, Japan, US, Europe, Hong Kong and India – and bring a forecast

Moderator



Mr Walter D'Souza
Fernandes Brothers



Ms CHEN Ying
CFNA



Mr Cheng Hung Kay
CHK Trading Co., Ltd.



Mr Deepta Gupta
Bikanervala Foods Pvt. Ltd.



Mr George Ishiguro
Blaxton Corporation



Mr Marc Rosenblatt
The Richard
Franco Agency, Inc.



Mr Jan Vincent Rieckmann
Dried Fruits & Nuts Division
August Topfer & Co

07:00 - 10:00 pm - Gala Cocktail Dinner and felicitation by the poolside - Sponsored by Vittals & DVK Group

PROGRAM SCHEDULE

Day - 3, Saturday February 3, 2018

08:00 - 09:30 am - Breakfast for in-house guest at conference venue

08:30 - 09:30 am - CasheWomen Forum breakfast meeting

01:00 - 02:30 pm - Networking Lunch - Sponsored by Orion Commodities

Session: Innovation to increase total realisation from cashews

09:30 - 10:30 am - Discussion: Enhancing value in cashew processing, through innovation

Preserving kernel quality and ensuring compliance to food safety regulations and electricity generation from cashew shell

Moderator



Mr Shakti Pal
TechnoServe



Mr David Barbera
Naposol AG



Mr James Obarowski
TechnoServe



Mr K S Jayaram
TMPL Machines



Mr Stefano Massari
Oltremare

Session: Opportunities in cashew world

10:30 - 11:30 noon - Discussion: Africa Investment Forum

- Risk study on cashew processing in Africa,
- Cashew processing Competitiveness study in Cote d'Ivoire,
- Opportunities in input supplies to cashew farms

Moderator



Mr Ernest Mintah
ACA



Mr Jim Fitzpatrick
Consultant and Mentor
Ingredient Sourcing Solutions



Ms Mary Adzanyo
ComCashew



Mr Gopi Krishna Reddy
ETG Farmers Foundation



Mr Ilidio Afonso Jose Bande
Country Director of INCAJU

PROGRAM SCHEDULE

Session: Cashew Vision 2030

11:30 - 01:00 pm - Roundtable - Cashew Vision 2030: Taking stock and moving forward

Moderator



Mr Ranjit Walia
CHI Commodities Handlers Inc.



Mr Jim Fitzpatrick
Consultant and Mentor
Ingredient Sourcing
Solutions



Mr B K Anand
Vink Corporation, DMCC



Mr Ernest Mintah
ACA



Mr Mahesh Patel
ETG Group



Dr. R K Bhodes
CEPCI



Mr Shakti Pal
TechnoServe



Dr. Adama Coulibaly
CCA



Ms Mary Adzanyo
ComCashew



Mr Florian Johnnes Winckler
ComCashew

01:00 - 02:30 pm - Networking Lunch - Sponsored by Orion Commodities

Technical Committee - WCC 2018



Mr G Srivatsava
President
CashewInfo.com



Mr Pratap Nair
INC Ambassador &
Board of Trustees Member



Ms Goretti Guasch
Executive Director
INC



Mr Amit Khirbat
Senior Vice President, Edible Nuts
Olam International Ltd



Mr Nguyen Duc Thanh
Managing Director
Tan An Foods Processing
Export Ltd Company



Mr Hari Nair
President
Western India Cashew



Ms Rita Weidinger
Executive Director
ComCashew



Mr Shakti Pal
Global Cashew Sector Lead
TechnoServe



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4TH EDITION OF THE WORLD CASHEW CONVENTION & EXHIBITION 2018 - HIGHLIGHTS

The 4th Edition of the World Cashew Convention & Exhibition 2018 was held in Macau between 1 and 3, February, 2018. Below is the summary of the conference.

1.0: Inaugural session and keynote address



The Honourable Union Minister of Commerce and Industry, Government of India, **Mr Suresh Prabhu**, chief guest at the inaugural function, through a video message assured full support to the cashew industry and urged the CEPCI to prepare a comprehensive business plan for the Indian cashew sector- to grow exports, to increase value addition, to upgrade technology and to impart skill to employees.

Dr R K Bhodes, Chairman, Cashew Export Promotion Council of India, in his Special address emphasized that the international raw nuts trade needs to be well structured. Standardization of RCN contracts/specifications/arbitration is the need of the hour. A proper mechanism needs to be put in place to ensure smooth transition of shipments from RCN exporting countries. Quality issues need to be addressed properly, including mixing of nuts.



Mr Mahesh Patel, Chairman, ETG Group, in his inaugural address stressed on the importance of attaining production adequacy of cashews. He advocated boosting local processing in Africa substantially by adopting cutting edge technology. A three percent increase in local processing of RCN in Africa will boost the household income of African by at least USD 100 Million.

Dr Adama COULIBALY, CEO of the Cotton and Cashew Council presented an overview of Cote D'Ivoire cashew sector. The country is estimated to produce 750,000 tons of cashews in year 2018. Council has taken training programmes for orchard restoration and distribution of improved plants. Quality improvement is the key to success. The Council is eying to increase processing to 100,000 tons.



VINACAS President **Mr Nguyen Duc Thanh**, (though could not come to conference, sent his presentation) has proposed collaboration programme among three countries, viz., Vietnam, Laos and Cambodia. Vietnam has its advantages on cultivation technique and processing technology and today the

biggest market for cashew nut products. Cambodia and Laos have much unoccupied land for expansion of cashew trees. In general, according to comments from VINACAS experts, the three countries have much more advantages for development of cashew trees.

In his key note address, **Mr Pratap Nair**, Board Member, Ambassador INC, highlighted the role, mission and vision of INC. Very specific to the cashew industry, the INC under its umbrella has very recently started Global Cashew Council. The INC has already completed a study on nutritional composition of cashew kernels from different parts of the world which includes West African countries of Cote d'Ivoire and Nigeria, Vietnam, Brazil, Indian states of Andhra, Karnataka, Kerala and Odisha. An information-kit on cashews has also been released.



2.0: Raw Cashew Crop 2018 and trade challenges in global RCN trade

2.1: Cote d'Ivoire RCN crop; export; local processing

In 2017, Cote d'Ivoire produced a record 711,236 tons RCN, surpassing the previous record of 702,510 tons produced in 2015. In 2017, Cote d'Ivoire processed 44,628 tons RCN, which is equivalent to 6.28 percent of their total production, while the installed capacity was 109,500 tons.

Considering good weather, 2018 Cote d'Ivoire RCN crop is expected to be around 750,000 tons. The government has provided 80+ processors with direct access to bush without any intervention to purchase the raw materials.

In 2016, the government has provided USD 3.7 million as subsidy to cashew processors for exporting kernels from Cote d'Ivoire.

Project to promote Competitiveness of the Cashew Value Chain (PPCA) - Start-up of the implementation in 2018, in particular, in the development of industrial zones dedicated to processing of cashews in Bouaké, Bondoukou, Korhogo, Odienné and Séguéla.

2.2: Nigeria RCN crop, export, local processing

In 2017, Nigeria RCN exports exceeded 220,000 tons as against 160,000 exported in 2016 (Source: NCAN). In 2018, Nigeria's RCN crop size is projected to increase by 10% to 242,000 according to NCAN and other export bodies.

The government, through the Ministry of Agriculture along with the private sector and other stakeholders, expects to increase RCN production to 500,000 MT by 2025. It also hopes to develop a cashew processing capacity of 70% of the total production.

Discussion is on-going with shipping lines to ensure that consignment gets to Ho Chi Min City in 33 days and to Indian ports in 35 days.

Nigeria demanded a fair price for its raw cashew at par with other west African origins, in recognition of the huge improvements in quality of delivered raw cashews in the last three years.

2.3: West Africa – Other countries crop and export

In 2017, Benin produced 125,000 tons RCN, out of which 15,000 tons were processed locally. The cashew campaign

opening is slated on March 15th, and the Ministry of Commerce declared 2018 farm gate price at 500 CFA per kg.

Benin and Nigeria together is forecast to produce 300,000 to 350,000 tons RCN in 2018.

Guinea Bissau complex, which comprises Guinea Conakry, Senegal and Gambia, is expected to produce in the region of 300,000 and 350,000 tons RCN in 2018.

Overall West African RCN crop size is likely to be at around 1.65 million tons in 2018 as against 1.56 million tons in 2017.

INC estimated 2017/18 world cashew production at 3,429,696 tons (raw cashew in shell basis).

2.4: East Africa RCN crop, exports and local processing

In the recently concluded East African cashew crop season, Tanzania is estimated to have produced 300,000 to 310,000 tons RCN. Local processing of cashew yet to gather momentum and is estimated at around 14,000 tons. The price for 53 lb/200 counts remains at elevated levels around USD 2400 per ton.

In Mozambique, RCN crop size is estimated close to 105,000 tons as against the earlier assumption of bumper crop. Unfavorable weather conditions resulted in lesser than anticipated crop. Mozambique is likely to process more than 60,000 tons RCN (2017-18).

2.5: Cambodia

In 2017 Cambodia has produced 104,268 tons of RCN and exported 73,179 tons of RCN, out of which 72,248 tons of RCN exported to Vietnam alone and remaining small quantities to India, China and Thailand.

The challenges are limited investment in agriculture (including cashew), low productivity in cashew, and lower spending on research and development.

Future agenda includes (a) strengthening collaboration and access to market in the region, (b) access to finance for small holders/SMEs, (c) improving research and development in cashew farming and (d) promoting contract farming in agriculture.

2.6: RCN buyers Expectation

RCN business is growing at 15 percent CAGR. However, the pain point is no standard reference point for raw cashew contracts. How can we define the reference point? It should be based on past practices, precedent, next comes operational aspects- who should do what, which order where and why it has to be done, the procedures on how to

take samples, how to determine outturn etc, the programs, we need program for training, for reference, and policies. In summary, we need to have a codification, which could be arrived on the basis of dialogue, discussion, debate and through demonstrations.

In 2017 Vietnamese traders faced lot of problems while importing RCN. Initially the quality of imported RCN was good, but subsequently quality deteriorated. When the demand is more, Vietnamese faced too many quality problems, despite higher price. Lot of claims made by Vietnamese traders/processors are yet to be resolved. From the lessons learnt in 2017, the Vietnamese people will choose who the right supplier is; reliable partner; right seller to buy RCN, going forward. It is very important for the African countries/government to ensure that RCN is dried properly before it is shipped out, as Vietnamese buyers lost heavily, may be in USD millions.

Risk assessment in cashew sector in Africa

Some of the key risks associated with the producers include price risk, lack of holding power, default, late payment, late collection, lack of knowledge and lack of tenure.

Some of the key risks associated with the processors are lack of management skills, high raw material and energy costs, inadequate working capital and low-cost competitiveness.

Some of key risks associated with the sector are fall in production due to drought, quality loss due to excess rains at the time of harvest, poor infrastructure, food safety non-compliance etc.,

3.0: Cashew Kernel market review and outlook and cashew kernel buyer expectation

3.1: India cashew kernel markets

India Food and Grocery Retail Industry is currently pegged over US\$ 593 billion and growing at 15% CAGR. Cashew is widely used as food ingredient due to its taste, affordability

and on positive health aspects. Cashew is widely consumed in India in the form of sweets, namkeens, gifting segment, and in curries/chutneys in the form of paste. In India, 60 percent of domestic production of close to 250,000 tons of cashew kernels is being consumed in the form of ingredients and 40 percent consumed as whole nuts. Of ingredients, 40 percent is consumed in the namkeen segment, 35 percent in sweets, 15 percent in biscuit industry, remaining in ice-cream and in food curries.

Technavio predict that the global chocolate and ice-cream market will grow at a CAGR of more than 5% by 2021.

3.2: US Cashew kernel market

There are reports that [US cashew consumption increased in 2017 when compared with 2016](#). However, according to most of US retailers and roasters higher prices of cashews are hurting consumption. In 2016, US entered the markets with a lot of carry forward stocks. Normally in US market, if you sign a contract in Jan month, it will reach the consumers only after seven to 10 months. So, there is a lag time in retail pricing. Lot of new products such as mixture of nuts and unsalted nuts are gaining momentum in the markets. Growth is seen in cashew milk, cashew butter. Health awareness among consumers is creating space for lot of newer products in the markets.

3.3: European Cashew kernel market

In Europe consumers are willing to spend more for quality foods. Market trend is changing to healthy nuts with less salt, sugar and fat. Consumers are also seeking new products due to increased health awareness and nutritional facts. Rising price is challenge, but controlled by stronger euro against the dollar. [The major problem confronting the European industry is the quality issues such as high moisture, bad texture, high foreign material, bad smell and taste.](#)

3.4: China cashew kernel market

[China has announced reduction in import tariff on RCN and cashew kernel from the existing rate of 20 and 10 percent to 7 percent respectively effective December-2017.](#)

Chinese prefer roasted, flavoured cashew, more accurately oil-blanching, then added to main dishes. Cold weather makes it suitable for people to eat nuts in winter season. Major sales happen during Lunar New Year, Mid Autumn festival. E-Commerce has become an important way of selling and buying.

3.5: Japanese cashew market

[Japanese market is growing steadily over years and imported more than 10,000 tons of cashew kernels in 2017.](#) For the past 20 years, more than 90 percent of supplies are from India and Vietnam. Japanese buyers insist on three factors viz., quality, responsibility and sustainability in terms of stable supplies. Snack retailers are the largest channel of distribution of cashews in Japan, and retail sales of premium

quality nuts started to increase since 2010.

3.6: Hong Kong Cashew Market

[W240 is the most preferred grade by Hong Kong buyers and accounts for 80 percent of the market share.](#) The market for W320 is small and very negligible presence for other grades. They want quality to be supreme with no discolouring, free from insect damage, no infestation issues, etc., Also the size should be uniform. The government is very strict on food safety and quality control.

HK consumes 50% of cashews as snack food for home cooking, 30% as food ingredient and 10% used in Ice cream, bakery and confectionary industries.

Most of the imported cashews in Hong Kong are used for their local consumption. Hong Kong cashew kernel import ranges from 1200 and 1800 tons per year.

3.7: Cashew Kernel Buyer's Expectation and Gaps

[While machines brought in scale of operation, it also resulted in certain quality issues. Over The buyers understand this aspect and tolerate it within a reasonable limit. However, quality issues pertaining to hygiene, lack of food safety systems and non-compliance are not tolerated.](#)

3.7.1: Requirement of UK / Europe kernel buyer

The demand for traceable and sustainable food supply chains is growing in the UK markets. To work with European buyers, cashew processing factories should have BRC or equivalent certifications. Moreover, the factories should work to become SEDEX approved as the goal is to create products that an ethically conscious consumer can trust. The general requirements for kernels buyers especially for US and EU include i) delivery commitments / no defaults ii) traceability and quality of the product, (iii) maintaining global food safety standards, (iv) GMP, and (V) Ethical trading initiatives.

While the most important things to be addressed are that of foreign matter contamination such as hair/stones/wood pieces, bangle piece and other grain contamination and infestation in kernels, receipt of poor quality and infested kernels for processing and unhygienic processing area / irregular plant fumigation.

[From the global cashew buyer's view point the need of the hour is reasonable and stable price of cashews and stability in supply.](#)

3.7.2: Indian kernel buyer's requirement

India ranked first in 2017 in the Global Retail Development Index (GRDI), rapidly progressing from 20th position in 2014. The retail industry accounts for 10%+ of the country's GDP

and ~8% of employment.

In India, the GST- One Nation - One Tax, throws lots of opportunities for organized players with seamless integration of national market. No halting of transport on state borders- substantial saving in transit time.

Challenges as kernel buyer: (1) Lack of Standardisation- All Specifications need to be standardized across the industry for benchmarking. (a) All units in Metric Systems KG or Tonnes. (b) Package sizes should preferably be of 10 Kg. (c) Rates to be mentioned in Standard Metric Units - Like Kg or Metric Tonnes.

(2) Statutory compliances with respect to FSSAI still remain a challenge. Concerted efforts are needed to educate Consumers & Stakeholders by FSSAI.

The interpretation of rules is not uniform across the states causing heartburns for the processors such as labeling, health benefits, branding, and shelf life of the products. Clarity with regard to the size of Fonts, pack size and the minimum required information are needed.

Clinical Research Studies on Cashews

Dr. V. Mohan and his team (Madras Diabetes Research Foundation, India) assessed the changes in **glycemic and lipid profile among Type-2 diabetic subjects** after a daily supplementation of cashews in their diets. In addition, they evaluated the effects of daily cashew supplementation on blood pressure. This study was funded by the Cashew Export Promotion Council of India (CEPCI).

After consuming 30 g of cashews daily for duration of three months, the participants did not notice any change body weight, waist circumference and BMI. At the same time, observed decrease in blood pressure, and also increase in good cholesterol level.

The *American Journal of Clinical Nutrition* published the study "Cashew consumption reduces total and LDL cholesterol: a randomized, crossover, controlled-feeding trial" in March 2017. The results found that **daily consumption of cashews**, when substituted for a high-carbohydrate snack, in a typical American diet **may help decrease total cholesterol and LDL ("bad") cholesterol**. This study was funded by The Kraft Heinz Co.

Directions for future research

- Studies on the effect of cashew nut consumption in population at risk for diabetes (obese/overweight or prediabetes) would help to understand the preventive role of cashew nuts in Asian Indians
- Cereal – cashew nut matrix –newer avenues to develop products with lower the glycemic index

Development of FUNCTIONAL FOODS using cashew nuts: crackers, snack bars, beverages, meal replacers, pasta products etc.. suitable for all including population with diabetes



Cashew Women meet

Cashew women meet was held on the day-2 of the conference. Whatsapp group "CashewWomen" to support and generate discussions about the cashew sector, encourage mutual learning on occurrences in the cashew sector worldwide for over 300 + women along the entire value chain.

Publication of women's success stories to encourage others to thrive in their fields and revolutionize the cashew sector.

Volume 2 of 'Global Cashew Women Entrepreneurs' was released during the meet.

4.0: New developments in Cashew sector

4.1: Technology - Preservation of RCN quality in transit and storage

The Oltremare proposed system for post-harvest treatment and vacuum pack unit will clean RCN from heavy as well as light foreign matters, dry the RCN in a controlled way inside the warehouse controlling infestation, prevents the loss of KOR in transit as well as during storage and can pack one ton of RCN in vacuum packs. Some of the key advantages are minimization of manual labour, high volume in shorter duration, ability to dry RCN during rainy season, full traceability, prevention of theft, mixing of nuts etc., The pack is fully protected from moisture, air, dust, insects, condensation, and easy to stuff in a 40 feet container during transportation.

4.2: Technology – Automation and Artificial Intelligence

Nanopix forecast that Automation with Artificial Intelligence (AWAI) will drive the future of cashew processing. The

AWAI essentially includes four components – Internet of Things (data collectors collect data from machines and store them securely in Cloud), Image Intelligence (analyses input through vision technology, Far IR, X-Ray and spectrometer imaging), Data Intelligence (Deep analysis of past data to predict future), and Machine Intelligence (self-learning and peer-learning machines). Artificial Intelligence for cashew processing would result in efficient faster processing, better food safety compliance, reduction in food wastage during processing, better food composing leading to intelligent recipes, and help in farm inspection and pollination (through drones).

4.3: Gujarat, the emerging hub of cashew processing

The Indian state of Gujarat is currently processing 30,000 tons of RCN and their goal is to achieve 200,000 tons of RCN processed in the next three years. Gujarat is a good market for broken cashews.

4.4: Technology platform for RCN trade

The information technology transforms the way in which we buy and sell agri commodities. By registering on the platform (www.agribazaar.com), a user (rcn trader / exporter) can get a lot of enquiries from across the globe for buying and selling. Farmers can get the right price for their produce and get instant payment. Traders and processors can get wider participants, assured of their quality, supply and their payment. Even lenders can be integrated on this platform and can finance the needy.

4.5: Integrated Trade finance option

Recognising 'access to finance' as one of the biggest obstacle to global trade, Maersk ventured into the business of extending trade finance of goods moved through its system. Specifically, for cashews, this is a big business opportunity for Maersk as over half a million tons of cashew are moved out from its vessel from Africa to India and Vietnam last year. From trade finance perspective, Maersk has funded 16,000 tons raw cashews giving loans of USD 17 million to its customers based in India, Singapore, Netherlands, US, UAE and Spain. The customers get timely access to capital, completely non-collateral loan; the solution is completely paperless and digital.

4.6: Farming in new origins

Korean government encourages overseas farming. Lao government has good cooperation with Korea government in agriculture area - "Saemaul Movement" (installing new

village), and good incentive system for foreign investment. G-Farm, after a three-year intensive feasibility study of Cashew-nut, invested in Laos cashew sector under PPCP agreement.

4.7: Why governments invest in Cashew sector?

GIZ's ComCashew is a part of larger umbrella of programmes. Agriculture for sustainable development (A4SD) regroups four value chain projects working in 15 African countries. An important principle of our approach is to work with partners along the entire Value Chain, not only on certain levels.

More than 420,000 farmers have participated in Good Agricultural Practice Training. Female participation rate is just at 22%, despite the fact that most of the On-farm labour in Cashew is provided by women.

The encouraging message for the cashew sector is as follows. The potential areas for cashew production increased significantly, in both Ghana and Ivory Coast. This makes Cashew a sound investment for longterm Development

4.8: What does financing companies look for while lending to cashew sector?

Wish that Cashew being traded on exchange in future. This will ensure better regulations and more traditional financiers will be attracted. Will provide a transparent price platform and may also provide some stability.

Expect further improvement in quality control across the cashew value chain. This is necessary to instil trust in contracts in order to finance the contracts.

4.9: Technology to eliminate microorganisms

Various machinery companies explained about their ways of controlling pests, foreign matter and infestations by using pasteurization methods.

Pasteurisation of cashew kernels is integrated with food safety treatment and vacuum packaging. The advantages of continuous process include more than 5 log reduction, 100% insect elimination, preserving sensory aspects, no change in appearance and no moisture loss.

4.10: Electricity from Cashew Shell

There was a presentation (TechnoServe) on how de-oiled cashew shell cake could be utilized for electricity generation.

As we are aware that 70% of RCN by weight is from cashew shell. In Benin by 2022, at least 24,500 tons of shell waste is anticipated, which could yield about 4 MW of electricity.

Cashew Vision 2030

Cashew vision 2030 panel discussed some of the key challenges such as will there be enough cashews to meet the demand, how to tackle the food waste, to boost demand, to increase supply, which country would be the main producers of cashews by then, whether international RCN trade sustainable, how much of RCN would be processed as kernels in Africa by that time, role of government in the development of cashew sector, consolidation in the cashew sector, the role of financing – where the money is going to come in to the cashew sector, the role of women, and the interesting aspect of where do you see china in 2030-A supplier/consumer/grower.

By 2030 the global raw cashew production is likely to be around 6-6.3 million tons.

Food loss in industrialised countries is three times than that of developing countries. This trend is going on for quite some time and will continue in the future also. To minimize food loss, especially in cashew, we need to start utilizing cashew apple continuously across the growing origins.

Focus more on Africa to increase global cashew supply. All stake holders need to support Africa. If that happens lot of change would take place. Next important thing is access to affordable finance, which is vital to boost supply of cashews in terms of producers and processors; they must have access to finance from banks and financial institutions, which will incentivize the stakeholders. Next point is about inter-industry and country collaboration, which will play a key role towards supply boost and cashew future, hope to see improvement in infrastructure development, transport, logistics, public investment and education are required, more importantly skills are to be developed as per modern methods and technology at farm levels and each supply chain levels to ensure growth at all levels. The next priority is bureaucracy. Seamless dialogue between government and private parties is imperative in the development of the sector, as cashew is seasonal and varies from one country to other.

In 2030, Africa will produce 70 percent of Global cashew. In Asia, India is likely to be the key player. Some emerging countries such as Cambodia and Indonesia may produce

more cashews by then.

In the coming days, health and nutritional benefits will drive the cashew consumption apart from the traditional habitual consuming pattern. India will continue to retain the top slot as far as cashew consumption is concerned, may be followed by China, Middle East and the US.

The RCN market has all the features of a bubble. It has unqualified new entrants, too many experts, too little infrastructure.

Africa, slowly and gradually will increase the processing capacity, with the active support of public private partnership with the participation of government and their policies, Africa would at least process between 30 and 40 percent of their produce by 2030. By 2030, Africa may process over 1.1 million tons of RCN locally. There won't be any problem with RCN exports.

From farm to folk, the supply chain should be through the shortest possible transit. The road map for 2030 is participation of multi state stakeholders with the driving seat in hands of government of Africa who are the origin of cashew for 2030. Supply chain today, is very convoluted as production takes place in one place and the produce is then transported to another place for processing, the processed kernel is further transported to final place of consumption. The current scheme fetches less money to growers and also increases the cost to the end user.

Women will continue to play a very major role in the cashew sector. Currently about 60% of global cashew workforce in the production level comprises women and 90% are in processing factories. Foresee at least 15-20% of big factories will be owned by women; foresee more women managers in factories and in the supply chain.

Cashew market in China is really big, consuming more than 50,000 tons per annum now. The prices are competitive. Consumption of cashews in China is likely to grow by 3 to 5 percent per annum. Chinese consumption of other tree nuts such as almonds, walnuts and pistachios are in excess of 100,000 tons. Definitely there is a scope for increasing cashew consumption in a big way by the way of promotional activities.

Welcome Address by Mr G Srivatsava President, Foretell Business Solutions



Distinguished dignitaries on the dais Dr R K Bhooles, Chairman, Cashew Export Promotion Council of India, Dr Adama Coulibaly, Managing Director, Cotton and Cashewnut Council, Cote d'Ivoire and Mr Mahesh Patel Chairman, Export Trading Group, expert speakers and panelists, government representatives, over 490 delegates from 38+ countries, press and media and ladies and gentlemen, a warm welcome to you all to the 4th edition of the World Cashew Convention. I understand many of you have travelled a long distance to reach Macau to attend this important annual

conference just ahead of the season. We wish you all a very good and productive three days of stay and business-enabling networking here.

About a month ago, we contacted the office of the Honourable Minister of Commerce and Industry Government of India, Mr. Suresh Prabhu and invited him to be the chief guest of the inaugural function. He was very eager to come and address the gathering here. Unfortunately, he had to stay back in Delhi as today also happens to be the day of presentation of Union Budget of Government of India, an event which no minister can miss. However, he has been kind enough to send his video message yesterday. Before I continue further, I wish to present you the transcript of the video message of Mr. Suresh Prabhu, Minister of Commerce and Industry, Government of India.

"I am very happy that the World Cashew Convention is taking place and that's happening at a time when we are working on so many important initiatives for the cashew industry. One of the key components which are preventing raw cashews coming in to India is due to the imposition of import duty on RCN which has created huge problem and resulted in unemployment for lakhs of people. I have taken up this issue with the finance minister and soon you will hear good news from him. As I have already explained to CEPCI to prepare a comprehensive business plan highlighting the issues that need to be sorted out with the help of government. We will work together in resolving the bottlenecks faced by the industry, to identify the

new export markets, to create skilled manpower, to find resources to modernize the technology and to create more employment opportunities in this sector.”

I place on record, our sincere gratitude to the Honourable Minister Mr Suresh Prabhu for his commitment to the Indian cashew industry. I am sure that bright days are ahead for the global cashew industry.

Mr. Nguyen Duc Thanh, President Vinacas had suddenly developed some health issues yesterday and hence he had to cancel his trip. He has sent his best wishes for the conference and has assured Vinacas support for the conference in the coming years.

I am indeed happy to inform you that the 4th edition of World Cashew Convention is organised in association with International Nut and Dried Fruit Council (INC). We are truly honoured to have INC Ambassador and Board of Trustee Member Mr Pratap Nair delivering the keynote immediately after the inaugural function.

2017 was a very challenging year for the global cashew sector. Raw nut prices were high and volatile despite a near record high West African production. Kernel prices too increased, although in many parts of the world it came at the expense of demand destruction. Quality compliance and contract sanctity faced huge challenges. All these increased business risk and hindered fresh investments into the sector. Recent history has clearly shown that stable raw cashew and kernel prices are the most basic and most essential part of sustainable growth in demand.

A recent survey conducted by Cashewinfo a week ago revealed that conditions are best set for achieving stability in the market in 2018. Our survey points to a forecast of good crop in West Africa and India in 2018, leading to an expectation of stable raw cashew price in the coming

campaign. I am very optimistic that the stakeholders present here would have an excellent year ahead with stable prices and re-emergence of demand for kernels.

As with every year, I place here the enormous contribution of the technical advisory committee in setting the agenda. Today, after the inaugural session and the keynote address, we will have two interesting sessions on raw cashews. The first will focus on raw cashew crop forecast for 2018 and the second would discuss critical challenges that face the raw cashew trade. Tomorrow, pre-lunch we have a session on understanding cashew kernel buyer's expectations, followed by a session on update on nutrition, quality and food safety standards. This will be followed by a presentation on an update on CasheWomen and a set of interesting videos. Post lunch, the first session would explore new developments in cashew sector, while the second session would help us get an understanding of the motives of people who have invested in the cashew sector. Thereafter we have an interesting session on forecast into cashew kernel markets in 2018. Day-3 would begin with a session on technology and investments with special focus on pasteurisation and economics of electricity generation from cashews. Thereafter, we would have Africa Investment Forum and the Round Table on Cashew Vision 2030.

The conference venue has provided the luxury of vast space for conferencing, lunch areas and exhibition. We have over 22 exhibitors eager to share with you about their new products and services. Please do take time to visit the booths outside and engage with them. I am sure it would be immensely beneficial for your business.

We have organised a special CasheWomen breakfast session on February 2 and 3, 2018. I encourage all ladies to join the meetings at the breakfast hours and drive the agenda forward.

We have tried to provide you enough time for networking during breaks and at this evening cocktail reception and tomorrow's gala dinner.

A conference of this scale is not possible without the immense support of sponsors, partners and supporting bodies. I thank each one of them for their support and encouragement and sincerely believe that their investments are very productive.

We have launched a mobile app for the conference. It works in both Android and iOS phones. Please contact the help

desk and register. It would help you to fix appointments, ask questions and browse programme agenda.

Cashewinfo is committed to the development of global cashew industry. We have been pursuing this agenda for the last 17 years since Cashewinfo has been in existence. We value your partnership and association. Hope this conference would help you further in your business and bring better prosperity to the sector. With these words, I wish you all a very successful conference. Best wishes and good luck.



24 - 26 January 2019
Intercontinental, Abu Dhabi
Mark your dates



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Address by Dr R K Bhodes, Chairman, Cashew Export Promotion Council of India



It is a privilege to be invited to address this august gathering on the inaugural session of the World Cashew Convention 2018. Earlier also, I had the opportunity to participate in all the past editions of the World Cashew Convention, and I take this opportunity to congratulate the team of Cashewinfo.com for organizing such a wonderful conference engaging the entire link of the cashew value chain all across the world.

The first two editions were held in Dubai, the entry port to the emerging Middle East market and the third one in Singapore, the trade hub of the industry. Today, the WCC is being held in Macau, the city of gambling. Does it also give an indication on how the cashew industry is moving now a day?

Today, the current and looming crisis of the cashew industry is of great concern to all. Unlike cashew kernel trade, the international raw cashew nut trade is not well structured. [Gone are the days when raw nuts were segregated at the origin on the basis of quality. Tanzania used to classify the raw nut producing regions under 12 categories \(A to L\) and](#)

[market their raw nuts under three marks viz. CDJKL, AFGHI and BE. Likewise, Nigeria used to segregate raw nuts as 'Sinkers' and 'Floaters'. Gone are those days where raw nuts used to get a premium price based on the quality. As of now, in the trade of raw cashew, there are no standard specifications, standard contracts, arbitration clauses and many a times and when disputes arise in the raw cashew trade and the parties- either the seller or the buyer- is left with no option but to leave the settlement to fate.](#)

[The disparity between the raw cashew price and the kernel market today is the basis of the crisis in processing.](#) The unhealthy practices in the trade are to be discouraged. Today, cashew has become just a commodity for trading without caring for its quality and other trade ethics. The quality issues of the raw cashew traded owing to drying and mixing of different origins are to be addressed properly. Delay in shipments is another serious concern for the processing industry. A lot of defaults are reported from either ends owing to market fluctuations. Contractual obligations are to be honoured for any trade and business. The disputes in raw nut trade between buyers and sellers are leading to unhealthy litigations. As of now, there is no effective mechanism to address the trade problems in RCN sector.

In this context only, CEPCI has come out with efforts to channelize the RCN trade with the introduction of a Uniform Customs & Practices in the raw cashew sector. This UCP envisages:

- Defining specifications and standards for raw cashew nuts
- Introducing a standard and uniform contract for raw cashew trade

- Introducing standard systems and procedure for RCN sampling and quality testing
- Defining Settlements and Compensations when there is a variation in contracted terms & supply
- Introducing arbitration clause in RCN cashew trade

CEPCI is very particular that such that UCP should be taken care in the interest of all stake holders in the value chain. As a beginning, CEPCI has set up a technical committee and the committee has collected and analysed the works done by various organisations like Vinacas and FICI in this regard and suggested uniform norms for the quality and trade. This is under circulation to different stake holder levels.

In this regard, CEPCI had led a delegation to the West African countries and had discussions with the government and trade organisations, who all have supported the idea of the UCP and offered their full support. I take this opportunity to request all delegates present here to extent their support both as an individual and also through the organisation they belong to the efforts of CEPCI in channelizing the raw cashew trade that would benefit all stake holders in the value chain.

On the kernel market side, we are happy that the consumption is on the rise and there's more scope for market promotion.

The CEPCI has come out with the findings on its sponsored research on the effect of cashew kernel consumption in type 2 diabetics and the results are encouraging. Hope this would give a big boost to the consumption of kernels worldwide.

Today India is in the forefront in offering quality cashew kernels to the world. Our focus is on three aspects of fair trade- Quality, Reliability and Consistency.

As far as the Indian cashew sector is concerned, CEPCI has formulated its strategic plans and submitted to the Government of India its 'Mission 2020' that envisages the growth of cashew sector in India. It includes

recommendations to withdraw the import duty on raw cashew till India's domestic production improves to balance the domestic and imports of raw cashew nuts. We are indeed indebted to the Hon'ble Commerce Minister of India Mr Suresh Prabhu and the Hon'ble Finance Minister Mr Arun Jaitley for seriously considering our proposals and reducing the import duty to 2.5 percent from 5 percent in the union budget presented today. We are still hopeful of getting the whole duty withdrawn in the near future.

This strategic plan also envisages processing of two millions tons of RCN by the year 2020 and taking the exports volumes to 1.2 Billion USD. I am sure that all our fellow exporting countries have their own plan to improve their performance in cashew trade as well. I take this opportunity to request all stake holders of the industry to join together and form a global strategic plan to take this industry to greater heights in the coming days.

I am sure that the deliberations in this seminar in the coming days would discuss on various aspects of the industry and find effective solutions to take this industry to glorious levels.

I hope that the conference will be judged by all of you to be very successful and I look forward to be briefed on what we have learned from the outcome of our deliberations.

With these words let me thank you all once again and wish the conference all success.

Address by Dr Adama Coulibaly CEO, Cotton and Cashew Council, Cote d'Ivoire



Dr Adama COULIBALY, in his inaugural address has presented an overview of Cote d'Ivoire cashew sector. [The country is estimated to produce 750,000 tons of cashews in 2018.](#) Council has taken training program for orchard restoration and distribution of improved plants. The council has also undertaken cashew research program where eight institutions and 30 researchers are involved to study how the production as well as quality can be improved. At present the country has 1200 buyers and 120 licensed exporters. [Quality improvement is the key to success. The council is eyeing to increase the processing capacity to 100,000 tons.](#) The council has taken incentive measures to encourage local processors. Subsidy program has been initiated. Key features are as follows:

- 400 FCFA per kg of cashew kernel produced and marketed
- 3 billion CFA (USD 3.7 million) paid in 2016 to local processors
- Spread of the measure over 10 years with a declining balance from the 5th year

Other measures include

- Establishment of a seed fund: lines of credit in local banks
- Reservation of 15 percent of volumes exported to the local processing industry
- Exporters' involvement in procuring local processors in the NCR
- Quality improvement: Reinforcement of quality control throughout the marketing chain (awareness campaigns through the quality platform and implementation of sanctions)
- Enhanced protection of land borders

Project to Promote the Competitiveness of the Cashew Value Chain (PPCA) Start-up of the implementation in 2018, in particular with respect to the development of industrial zones dedicated to the processing of cashew (Bouaké, Bondoukou, Korhogo, Odienné, Séguéla).

The council has taken various promotional activities this year to help the sector. SIETTA 2018: 08 to 10 November 2018, in Abidjan, is an outstanding opportunity to present, sell and buy the latest innovations in cashew processing.

CICC Council of Ministers: International Cashew Advisory Council

- March 2018 in Bénin
- November 2018 in Abidjan during SIETTA 2018

Address by Mr Nguyen Duc Thanh* President, VINACAS - Vietnam



Proposed Collaboration Program between three Countries; Vietnam, Laos and Cambodia

Vietnam, Laos and Cambodia have total natural area of over 700,000 square kilometers and population of over 130 million people. Considering suitable geographical, soil, and climate condition, these three countries collectively have enormous opportunity to develop cashew trees. While Vietnam has its advantages on cultivation technique

and processing technology and today the biggest market for cashew nut products, Cambodia and Laos have much unoccupied land for expansion of cashew trees. In general, according to comments from VINACAS experts, the three countries have much more advantages for development of cashew trees.

However, for doing this some core rules need to be followed. First and foremost, the production and business cooperation must comply with the general rules towards free trade mainly and to meet global consumption. **Total area (of all three countries) has been targeted to increase to 900,000 hectares in 2025 from the current 486,000 hectares. Total raw cashew nuts production has been targeted to reach 1,695,000 tons in 2025 from the current 635,470 tons. Production target of cashew kernels has been set to 536,000 tons in 2025 from the current 360,000 tons. On the export side, 5.36 billion USD has been targeted to reach in 2025 from current 3.51 billion USD.**

Cashew Target Set for 2030

Description	2017				2018			
	Vietnam	Cambodia	Laos	Total	Vietnam	Cambodia	Laos	Total
Total Hectares (1000)	336	120	30	486	500	500	100	1100
RCN Production (1000 tons)	470.40	132	33	635.47	1100	1000	200	2300
Kernel Production (1000 tons)	350	10		360	700	200	20	920
Export (USD Billion)	3.50	0.01		3.51	10	2	0.20	12.20

- Production of cashew kernels includes both internal and external volumes
- Export turnover includes value added and by products
- Sources by VINACAS and various bodies including Horticulture Department under MARD of Vietnam and Cambodia, localities of planting and processing cashews in Vietnam, Cambodia and Laos

There is need for massive financial resources as well as human resources to achieve the target.

Resources for the Program

Danh mục/ Items	Hiện nay (2017) Currently (2017)	2025	2030
1. Nguồn lực tài chính/ Financial resources	21.3 billions đ	31.575 billions đ	42.1 billions đ
- Khu vực nông nghiệp/ Agriculture area.	20 billions đ	30 billions đ	40 billions đ
- Khu vực chế biến/ Processing area.	800 millions USD	1.5 billions USD	2 billions USD
-Khu vực dịch vụ (NC khoa học, giống,...)/ Service areas including science and tech., varieties etc.	50 millions USD	75 millions USD	100 millions USD
2. Nguồn nhân lực/ Human resource:			
- Nông dân trồng điều/ Farmers.	200 thousand households	250 thousand households	300 thousand households
- Công nhân chế biến điều/ Workers.	100 thousand people	120 thousand people	150 thousand people
- Doanh nhân, nhà quản lý, nhà khoa học/ Business people, managers, scientists.	300 people	350 people	400 people
3. Quỹ đất dành cho trồng điều/ Lands for use of cashew growing.	500 thousand ha	1 million ha	1.3 million ha

Note: VINACAS calculates based on the following sources:

- Horticulture Department under MARD, Department of Agriculture and Rural Development in provinces of cashew nut growing and processing in Vietnam and Cambodia
- The figures on investment value are only estimated

To make it possible, few steps have been taken. They are:

1. The three countries will sign a protocol on cooperation in business production of cashew nut products for the purpose of acquiring land funds and building mechanisms and policies for development of cashew trees and creating favorable conditions for business people and private sector of the countries who will be prioritized for investment and trade and cashew production business technology transfers
2. The respective countries will soon ratify the national branding program and organic cashew nut production program, trade promotion program for

the cashew industry

3. The cashew stakeholders should cooperate with cashew growers in Cambodia, Laos and agricultural co-operatives in Vietnam as well as placing orders with scientists and bankers who will approve credits and loan for local farmers to implement their projects including intensive farming, grafting and re-planting of cashew trees
4. The three countries need to step up processing value added products and finding new ways to participate more fully in the cashew value chain,

quality assurance and food safety in accordance with international regulations

5. The cashew companies should pay attention to maintaining the current markets, traditional and loyalty customers and building new markets, new customers aimed at ensuring sustainable development of cashew industry

***This is the transcript of Vinacas President address to WCC-2018, as he couldn't attend the event due to personal reason**

Address by Mr Mahesh Patel Chairman, ETG Group



On behalf of ETG, a very warm welcome to one and all, first I would like to take this opportunity to thank and convey my respect to Mr Srivatsava of WCC and the team for making this historical event successfully each year. I am truly honoured and humbled to be here today. To my knowledge, this is the convention in the world where global cashew stakeholders convey in one place to discuss a brighter, better and a bigger future folk ,cashew fraternity let us make it a count.

As the Chairman of ETG, I take this privilege to address the elephant in this room, future of cashew and how do we achieve the desired future. Firstly, attain production adequacy and substantial boost to local processing through adapting cutting edge technologies. We feel that by 2025, the global cashew production is projected to be around USD ten billion dollars. Today, Africa is the largest producer of raw cashew nuts in the world and will continue to do

so, but less than ten percent is processed locally. A three percent increase in processing of RCN will soon boost the house hold income of African by at least USD 100 million. Vietnam is a good success story; we must learn from them by acknowledging their remarkable success and create in our own ways.

Now imagine, if about 50 percent of cashew processed locally in Africa by 2025; then Africa will truly emerge as a comprehensive cashew leader of the world, but it doesn't mean that Vietnam and India will be out of business. Africa has a huge land, at the moment 60 percent of the world's arable land is still lying in Africa and the opportunity of further production is great and there will be enough for processing in Vietnam, India as well as in Africa; so if we can all collaborate together and assist each other. This is the way forward where we can all have a private-public-partnership in making this success.

I would like to talk more about Africa, because the future lies in Africa as the production will come from there. Also would like to boost farmer's livelihood through education, training and awareness on technology. It is imperative that we adapt and develop cutting technologies to process the RCN within Africa, manual ancient methods of processing must be automated, steam less tracking and traceability will provide absolute transparency, local processing through cutting edge technology is the only solution.

ETG also has a wing with farmer's foundation, where we assist small holder's farmers in view, and the means of eliminating poverty in small holder's farmers in Africa. The current focus is to create the sustainability business model

by developing skill sets in Africa through investment, training and knowledge transfer.

We also believe in improved financial modalities as recommended last year at the world cashew convention. Breaking the supply chain and its constituent cost links, down into clear and a measurable components will provide a better insight into more appropriate financing arrangements that will help to de-risk volatility in key links and enhance understanding and permitting and testing of new financing modalities along the chain. We also need to understand about sustainability and lucrative policies and trading environments. Improved inter Africa trade with reform of custom trade duties will reduce working capital needs and logistics cost of processors and spurt the growth efficiency in processing operations. Infrastructure by government and financial institution is much needed for increasing capacity of African ports especially for West African ports to cater for significant increase in production and market off-takes.

Lastly, I would say enhance value-added opportunities as per current and projected market trends. For example, value-added super foods such as cashew protein bars coated with regional flavoured cashews and such products are made in Africa and exported globally will fetch 2-3 times the processed kernel value. Definitely, the Africa is going to emerge as a new big consumer in cashews over the years to come. The future of cashew is bright; I wish each one of you to have a meaningful and productivity days at WCC, Macau and thank you one and all.



Shakti Pal, TechnoServe

In all the editions of WCC from what I observe that we are not losing the sense why we created WCC. It's still having an impactful on knowledge management, and we continue our B2B efficiency, which we already have, that's why people are calling WCC as a great platform to have B2B, at the same time knowledge management is improving day by day.



Mr Pankaj Sampat, Director, Samsons Traders

Wcc has been growing from strength to strength. If we compare from the first to fourth edition, I am seeing more involvement but I would like to see more involvement from the cashew consuming countries and I am sure Mr Srivatsava and you team will work on that. Cashewinfo team is doing a fantastic job for the cashew industry and I hope this will continue in going forward.

Keynote Address by Mr Pratap Nair, Board Member, Ambassador International Nut and Dried Fruit Council



- Promoting scientific research on the health benefits of nut and dried fruit consumption

INC has 17 nuts and dried fruits in its portfolio. We have members from 80 countries comprising 750 companies.

Very specific to cashew industry, the INC under its umbrella has very recently started Global Cashew Council. This council consists of committee members and all the leading players in the cashew field across the value chain. Its main activity is to increase awareness on health benefits of cashews specifically and to promote its usage and consumption, and also promoting food safety and quality standards. GCC has promoted various studies in areas of healthcare benefits of cashew, food safety and quality standards and so on.

The INC has already completed a study on nutritional composition of cashew kernels from different parts of the world which includes West African countries of Cote d'Ivoire and Nigeria, India-Andhra, Karnataka, Kerala and Odisha.

Nuts and Dried Fruits are a Growing Trend

The growing demand of nuts and dried fruit is partly explained by the increase of consumers' health awareness which at the same time is explained by the industry efforts on communicating the health benefits of consuming the same

Nutrients	Cashews are high in vitamin K and minerals such as iron, magnesium, phosphorus, zinc, manganese and copper. They are also a source of fiber, thiamin, pantothenic acid and minerals as potassium and selenium
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An Overview of the Nut Industry

The INC is the world's largest organisation representing the tree nuts and dry fruits industry worldwide.

INC envisions being the international source for information on nuts and dried fruits for health, nutrition, statistics, food safety, government standards and regulations regarding trade barriers and agricultural quality standards. Our mission is to stimulate and facilitate sustainable growth in the Global Nut and Dried Fruit Industry.

INC Aims For:

- Being the international source of information on health, nutrition, statistics, food safety, government standards and regulations regarding trade barriers and agricultural quality standards
- Increasing the understanding about production, trade and consumption trends worldwide
- Cooperating with national and international institutions, such as Codex Alimentarius and UN to further global nut and dried fruit trade

Fatty acids	Cashews are relatively high in fat, but most of that fat (80%) is unsaturated. Saturated fat can raise blood cholesterol levels, which can increase the risk of cardiovascular disease (CVD). On the contrary, unsaturated fats, such as mono- and polyunsaturated fats can actually decrease low-density lipoprotein (LDL or “bad” cholesterol) levels
Vitamin K	Vitamin K contributes to normal blood clotting and to the maintenance of normal bones
Iron	Of all nuts, cashews contain the highest amount of iron (6 mg/100 g)

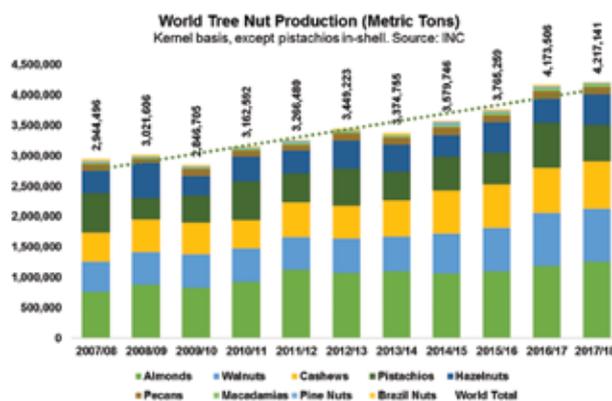
to an intervention or a control group in a 12-week feeding study

- This study was funded by the Cashew Export Promotion Council of India (CEPCI), (**Pending Publication**)
- The American Journal of Clinical Nutrition published the study “Cashew consumption reduces total and LDL cholesterol: a randomized, crossover, controlled-feeding trial” in March 2017
- The results found that **daily consumption of cashews**, when substituted for a high-carbohydrate snack in a typical American diet **may help decrease total cholesterol and LDL (“bad”) cholesterol**
- This study was funded by The Kraft Heinz Co (**Already published**)

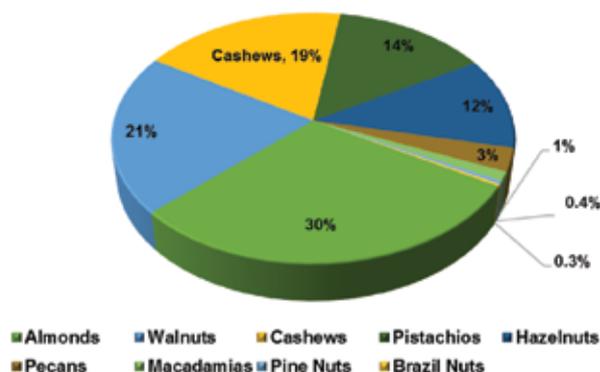
Industry Overview

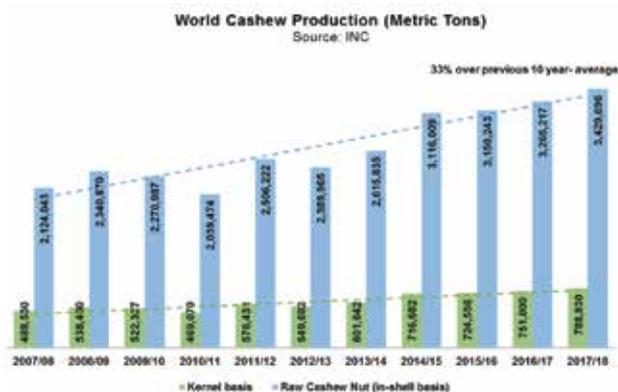
- **Health:** According to WHO, **Cardiovascular Disease (CVD) and Diabetes** are leading causes of mortality worldwide, causing millions of deaths every year
- Dr. David J. Baer and his team (USDA Beltsville Human Nutrition Center) have investigated the effect of cashew consumption on **traditional and emerging markers of cardiovascular disease risk**
- 40 participants were recruited to participate in a nine-week feeding study. Participants consumed a controlled base diet supplemented with 42g/day of cashews during one treatment period (four weeks), and a controlled base diet with no-cashew supplementation (control group) during another treatment period (four weeks)
- This study was funded by the Global Cashew Council (GCC), which is coordinated by the INC International Nut & Dried Fruit Council (**Pending Publication**)
- Dr. V. Mohan and his team (Madras Diabetes Research Foundation, India) assessed the changes in **glycemic and lipid profile among type 2 diabetic subjects** after a daily supplementation of cashews in their diets
- In addition, they evaluated the effects of daily cashew supplementation on **blood pressure**
- 300 participants were randomly assigned either

Production

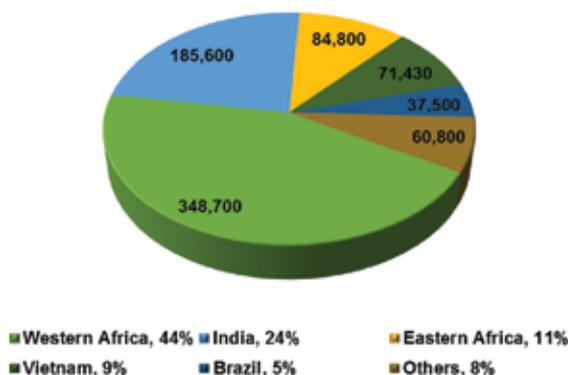


2017/2018 World Tree Nut Production
Kernel basis, except pistachios in-shell. Source: INC



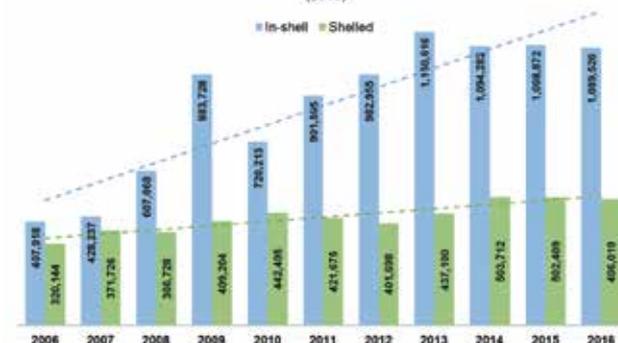


2017/2018 Cashew Production
Kernel basis (Metric Tons). Source: INC



Trade

World Cashew Exports (Metric Tons)
Source: DESA/UNSD UN Comtrade Database and EC Export Helpdesk (2016)

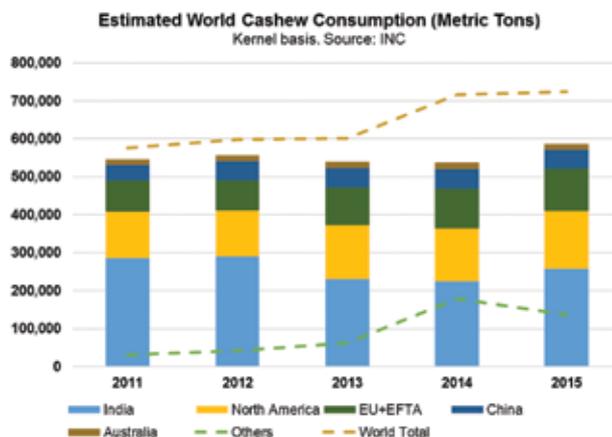


Cashews In-shell (HS code: 0801 31)		
Origin	Destination	Exports (MT)
West Africa	India	485,975
	Viet Nam	171,928
	World Total	776,582
East Africa	India	155,305
	Viet Nam	83,647
	World Total	239,473

Cashews Shelled (HS code: 0801 32)		
Origin	Destination	Exports (MT)
Viet Nam	USA	111,189
	EU+EFTA	91,825
	Australia	15,675
	Canada	9,690
	Thailand	7,457
	World Total	276,368
India	United Arab Emirates	20,168
	EU+EFTA	19,308
	USA	15,812
	Saudi Arabia	7,819
	Japan	6,113
World Total	85,097	

Exports 2016 (Metric Tons)		
Tree Nut	In-shell	Shelled
Cashews	1,089,526	496,019
Almonds	299,963	700,952
Walnuts	306,309	226,007
Pistachios	360,981	32,745
Hazelnuts	33,276	209,253
Pecans	117,128	60,563
Macadamias	54,509	31,187
Brazil Nuts	20,762	29,477
Pine Nuts	13,791	21,580
Total	2,296,246	1,807,783

Consumption



All are invited for the next edition of INC Congress, which is going to be held in Sevilla Spain during May 21-23, 2018.

Raw Cashew Crop: Market Review and Outlook-2018



Discussion: 2018 RCN Crop and Price Outlook

Moderator: Mr Krishanu Chakravarty, CEO, Farmer Fortune India Limited (100% subsidiary of Star Agri)

Panelists: Mr Adeyemi Murtada Adeniji, MD/CEO, Starlink Global & Ideal Ltd, Mr Abdul Traore, Secretary General, AEC-CI Ambassador, Mr Mallikarjuna Kumaraswamy, Vice President, Olam, Cote d'Ivoire, Mr Vasudev Barkur, Executive Director, ETG Group, Mr Ronald Edmond Philippe Riboux, CEO, Fludor, Benin

Initial Comments by Moderator

In this session, we have gathered here to discover and answer the million-dollar question of what could be the crop outlook of RCN be in the next six months. As you would have anticipated over last few years when the prices of cashew have moved up so is the cost of getting it wrong. In the year 2000, for getting 100 tons of cashews you would have invested about USD 45,000 and the same 100 tons of cashew in 2017 would cost you USD 200,000.

A five percent error in price positioning will hit you with a loss of USD 10,000 in 2017 as against USD 2250 in 2000. Last year when we met in Singapore in the WCC, we have talked about that the cashew prices are already too high and said possibly that the correction is around a corner but never came down. In the year 2014, the raw cashew prices were USD 1200, in 2015, USD 1500, 2016 USD 1700 and in 2017 it has been USD 2000 per ton. Let us figure it out what lies ahead of us in the next six months.

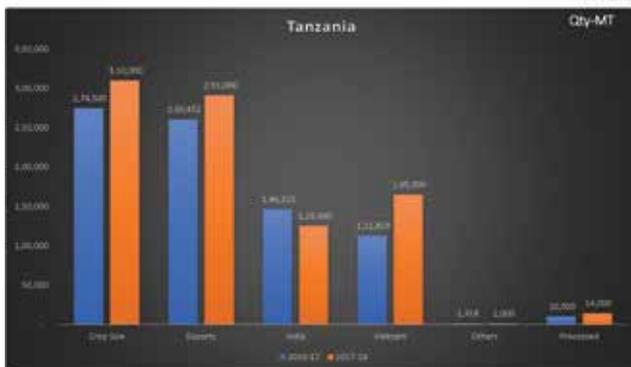
Mr Vasudev Barkur, Executive Director, Export Trading Group



RCN Crop 2017-18: Review - East Africa Crop

Tanzania crop has been exceptional. It had a record production due to very favourable weather conditions during the season. The good thing is that Tanzania’s Mtwara port was quite efficient unlike past hurdles. This time (2017-18 seasons), it has two vessel berth spaces and the movement was pretty quick without any other hindrances when compared to last season (2016-17). *If everything goes well, we could expect 2018-19 seasons Tanzanian RCN crop could be well over 300,000 tons.*

Tanzania Crop Production and Utilization



Tanzania Price Trend



In Mozambique, the crop was average to good; based on the official data the crop production is likely to be around 105,000 tons. In the mid way, unfavorable weather conditions prevailed as rains started. The South Mozambique crop is not seen yet which normally produces in the region of 20,000 and 30,000 tons of RCN. A small portion of it may hit the markets as already majority of them gone badly due to rains and floods which continued for about 25-30 days, only some sort of sunshine was seen in the last one week or so. Managing the quality of RCN is a challenge in these regions.

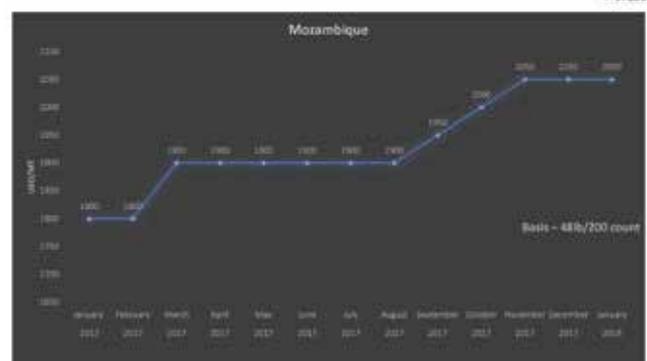
Mozambique also faces challenges in terms of logistics, a very long country with 3000 kms from North to South. If cashew has to be moved from North to South or vice-versa with one way, the transportation cost is unaffordable. More over there are some issues related to duty fixing. Currently there has been long haul in terms of processing documents which subsequently delayed the shipments from Mozambique.

Mozambique Crop Production and Utilization



Note: Utilisation figures for 2017-18 are estimated

Mozambique: Price Trend



Mr Abdul Traore, Secretary General, AEC-CI Ambassador

RCN Markets in 2018: Crop Status and Outlook - Côte d'Ivoire



Côte d'Ivoire is the leading RCN producer in Africa and arguably in the world. It is important to know what is happening in Côte d'Ivoire because it has its impact on the rest of the markets across the world. In 2017, Côte d'Ivoire has produced about 700,000 tons which doesn't include cross border trade. About 80-90 percent is exported to India and Vietnam in raw form. In terms of processing, about 10 percent is processed locally. The government of Côte d'Ivoire is working hard to encourage more local processing; one such initiative is the bi-annual conference conducted by government called as 'SIETTA', which will bring different stakeholders from all parts of the world together in one platform with an action plan which encourages and promotes local processing.

According to the Board of Agency, Côte d'Ivoire weather forecast in general has been good and favorable in terms

West African RCN Historical Crop: 2010-2017

Country	2010	2011	2012	2013	2014	2015	2016	2017	CAGR
Ivory Coast	305,987	291311	375323	497205	562152	650009	642635	664627	12%
Ghana	68,228	204725	106945	182512	131622	139012	129248	191067	716%
Burkina	0	14063	4947	23978	5856	12743	36360	47768	23%
TOGO	65	10818	5731	12853	9360	20926	15138	39106	149%
Guinea Bissau	60,634	184537	117836	209804	159433	161311	169323	178717	17%
Guinea	0	0	2282	13360	26132	38643	65337	35528	73%
Benin	80,868	138784	165230	125658	154257	170064	95242	127869	7%
Gambia+Senegal	18,662	46819	20684	59119	71767	37581	52418	58870	18%
Nigeria	51,779	65338	82088	78396	95382	120330	152180	223183	23%
Total	586,222	956,395	881,067	1,202,885	1,215,962	1,350,619	1,357,879	1,566,734	15%

of rainfall and sunlight and there is no adverse condition reported in any parts of the Côte d'Ivoire especially in the major cashew growing regions. The cashew flowering has been very good and healthy. Based on this information we can expect a very good crop for 2018. In terms of volume and based on the historic average of eight percent annual growth in 2018, Côte d'Ivoire is estimated to produce close to 750,000 tons.

As far as price expectation for 2018 is concerned as we are not a regulatory body and can't speculate on the price scenario. The new RCN farm gate price will be announced by the government body soon for this season through CCA usually by end of the February or early March. While budgeting for 2018 cashew season, one need to make provision for more allocation as new tax is being introduced to help and improve the sector. The government will look in to the level of production in India and Vietnam. The main RCN buyers and also it will look into the demand of cashew kernel in the international markets before setting this year farm gate price of RCN. Also the government will look into currency variation between Euro and USD as CFCA is linked to Euro.

Mr Mallikarjuna Kumaraswamy, Vice President, Olam International

2018 West Africa Crop

In West Africa, the overall trend and outlook for 2018 season is looking good. During 2016, crop like cocoa, coffee was in shortfall due to weather conditions but the cashew crop was not affected in Côte d'Ivoire with contrary to the market expectations.



Above table shows the phenomenal growth (CAGR 15 per-cent). It is calculated based on import data as recorded at India and Vietnam and local processing estimates.

- Barring fair weather, destination like Togo, Nigeria is a surprise factor
- Better to examine growth, basis group of countries
- Boundaries are blurred, trade is discordant

On the other hand below table shows:

- Côte d'Ivoire and Ghana complex has recorded massive increase in volume which is primarily fuelled by Côte d'Ivoire
- GB cluster is kind of stagnant after peaking in 2013. Latest fortunes are fuelled by Guinea Conakry
- Benin fortunes have taken back seat and reverse shift has led to quantum jump of Nigeria

every farmers and this is given since last two to three years to increase production

- Expected crop size of one million tons from IGBMT (Côte d'Ivoire, Ghana, Burkina Faso, Mali and Togo) complex and 300,000 and 350,000 tons from GB and Beniria complex, thus the overall crop size is likely to be around 1.65 million tons

Reasons

- Steep RCN prices have led to ever before commercialization?
- Growth rate in few key areas like Seguela and Mankono region where quality as well as growth is higher than other regions of Côte d'Ivoire
- Continued Mangalore premium for Benin fuelling Beniria complex growth?
- Spurt in potential after El Nino led stagnation in 2016?
- Government initiatives like Côte d'Ivoire minimum price regime?

Since 2014, RCN crop growth has increased mainly due to the government initiative especially from Côte d'Ivoire. In the next three to four years, West African RCN production has the potential to touch as high as two million tons.

Country	2010	2011	2012	2013	2014	2015	2016	2017	CAGR
IGBMT	374,280	520,917	492,946	716,548	708,991	822,690	823,380	942,567	14%
GB, GC Senegal & Gambia	79,296	231,356	140,803	282,283	257,332	237,535	287,078	273,115	19%
BeNirea	132,647	204,122	247,318	204,054	249,639	290,394	247,422	351,052	15%
BeNirea	586,222	956,395	881,067	1,202,885	1,215,962	1,350,619	1,357,879	1,566,734	15%

What in Store for 2018?

- Crop is looking normal and no traces of adverse news which is good news for cashew production as the crop will grow like what we have witnessed in the last six to seven years
- Prices continue to be high and thus phenomenal commercial interest because incentives are given for

Mr Adeyemi Murtadha Adeniji, MD & CEO, Starlink Global & Ideal Ltd

2018 RCN Crop in Nigeria and Price Outlook

Nigeria has earned USD 374 million through cashew export in 2017. The country had exported 220,000 tons of



RCN in 2017 (about 90 percent of its total production) as compared to 160,000 tons exported in 2016.

The cashew production has increased over the years in Nigeria due to more plantations, good agricultural practices, improved seedling, and post harvest handling methods, improved storage and packaging.

For 2018, the cashew producing areas in Nigeria had a favorable climatic condition for a bumper harvest. Early harvest starts from February 2018. The National Cashew Association of Nigeria (NCAN) and other expert bodies have projected a 10 percent increase (to about 242,000 tons) in raw cashew nut production for 2018 when compared with 2017 crop.

Efforts So Far Include:

- 400,000 hectares of land being used for raw cashew nut production across the country
- The new push to sustain and improve government policies on economic diversification to increase export base through commodity produce
- Thousands of new cashew trees that were planted last year at their 17th months were already flowering in preparation to fruit
- Prospective of early harvest starting from February 2018
- The government through the Ministry of Agriculture with the private sectors and other stakeholders expects the production to be increased to 500,000 tons by 2025 and also be able to develop a processing capacity of 70 percent of the total production

RCN Pricing

2017 Price Differential

ORIGINS	PRICE	QUALITY	SOURCE
NIGERIA	1750	48 lbs	VN
COTE D'IVOIRE	1850	48 lbs	VN
GHANA	1950	49 lbs	VN
BENIN	2050	49 lbs	VN
GUINEA BISSAU	2250	48 lbs	VN
TANZANIA	2300	49 lbs	VN
INDONESIA	2200	48 lbs	VN

Unit: USD/ Mt CNF HCMC

Note: Yearly average price 2017

Source: VINACAS

In the last three years, the federal government of Nigeria has put lot of efforts in improving the quality of cashews and also enforced strict measures on cross border trade. But from the above table (Sourced from VINACAS) Nigerian farmers were paid the least price for RCN when compared with others. If this trend (imbalance) continues we are likely to go back to where we started from. This will eventually lead to drop in quality and destroy the overall value chain of cashews. So, we urge the international buyers especially from India and Vietnam to address the above issue with all seriousness.

If the price differential narrows (reasonably closer to other origin price), Nigerian farmers will be encouraged to grow more cashews as Nigeria has the largest holder of arable land in the entire Africa. We can produce more cashews and will deliver better quality of RCN as the government is very serious about the quality and there is a new rule which says that no farmer can sell cashews if the moisture content is more than 10 percent from 2018 season onwards. The issue of peelability, handling of post harvesting practices will change dramatically going forward. In 2018, Nigeria is looking at a price of at least USD 2100 per ton of RCN which help us to increase our production going forward.

Mr Adeniji concludes his speech with the following remarks:

Nigeria expects partnership from India and Vietnam to increase processing of cashew in the next five to 10 years. It would help instead of shipping RCN to Vietnam and pay very high freight so that can process in Africa and export cashews to America and Europe which are closer to us.

- Nigerian RCN crop at destination has improved and is of better quality in recent years and hence the price differential for the same grade with other origins needs to be eradicated
- Sun-drying was not properly done as a result of the neighboring countries' price differential that often leads to poor post-harvest handling
- Foreigner's encroachment at the farm gates needs to be stopped. Foreign buyers are mostly exporters and at times the importers from other countries. This often led to price chaos that de-stabilises the procurement system and improper post harvest practices particularly drying of nuts
- Discussion is on-going with a shipping line to ensure that consignment gets to Ho Chi Min City in 33 days and also to Indian ports in 35 days

Mr Roland Edmond Philippe Riboux, CEO, Fludor

RCN Crop Outlook for 2018 in Benin



In Benin, the cashew is grown in the following areas: Central region, which includes Dassa, Savalou, Bante, Glazoue, Save (with an overall crop size of 40,000 tons) and North Region includes Parakou (45,000 tons), Nikki, Ndali, Bassila, Djougou (40,000 tons) and Nattitango.

Benin crop was estimated at 125,000 tons in 2017. Following is the distribution pattern of the crop

	Mt
Trading	80,000
Processing	15,000
Cross border	30,000

This year the initial flowering is normal and harvesting has also started in some areas but main crop will come from mid February. Ministry of Commerce declared the farm gate price at 500 CFA per kg and cashew campaign opening date is scheduled for March 15th.

In 2018 season, Benin cashew processing is likely to be higher at around 18,000 tons.

He has pointed out some of the primary challenges while processing cashews across Africa. These are:

- High volumes in short season
- Huge working capital requirement/ credit campaign structure
- Lack of spare part availability
- High logistic cost
- Fully dependent on local raw material
- High inventory carrying cost
- High packing material and other spares carrying cost
- No scheduled wage structure
- Lack of stable government policies
- Dependence on expat manpower
- Little or no movement of low quality grades
- High processing cost
- Warehouse, storage space and drying yard challenges

There is need to change government policies in following areas as well:

- Fixation of cashew campaign opening date
- Fixing the raw cashew farm gate price
- Regulatory measures
- Export duties
- Preferential buying period for processors
- Encourage new plantations

Benin current rate of RCN growth is around five percent and if it wants to achieve 15 percent growth in RCN production like that of other West African countries, the above measures are needed in order to achieve the production target of 300,000 tons in the next few years.

Q&A:

With the increase in processing capacity in Africa, would the exports of RCN from Africa get reduced or come to an end?

Mr Vasudev Barkur: In 1999, Africa was producing around 400,000 tons. Now in 2017, RCN production has increased by manifolds to 1.9 million tons. But the processing has not been going up in a way the African governments and associations have planned and although the processing is going up rapidly but the production is growing more rapidly. Moreover, 60 percent of the arable land is from Africa and in the future Africa is likely to feed the world so there is no cause for worry.

Mr Prakash Kalbavi: You have mentioned that in West Africa the growth in RCN production is about 15 percent in the last few years. What kinds of infrastructure changes have happened in West African countries? Is the government taking steps so as ensure that there is no bottleneck going forward such as up gradation of ports, facilities for drying of RCN as the moisture has been the biggest value destroyer of the crop? Has that upgradation come?

Mr Mallikarjuna: In the last two years, growth in African production is phenomenal. Between 2015 and 2016 growth was not that big due to climatic changes. As the climate becomes normal we saw spurt in growth in 2017. In 2018, growth will be there but not as phenomenal as what we have witnessed in 2017.

In Guinea Bissau, where infrastructure is not so great but exporters had taken initiatives themselves to ensure that everyone has drying yard and they dry the RCN properly. Burkina Faso and Ghana by the virtue of overall movement

of cashews through Togo, Tema ports had taken a lot of efforts to dry the RCN to the desired level.

Cote d’Ivoire is the largest RCN producer in Africa. The port infrastructure (Port City Abidjan) is not suitable to dry that much volumes of RCN. The CCA has made it mandatory for farmers to dry RCN and regularly checking the moisture of RCN stored in warehouses. They also had created dry port in Bouake and San Pedro as third port. San Pedro port has not picked up in big volumes, if that happens and then it will increase the scope for drying more RCN.

One of the factors which have not helped Côte d’Ivoire is that the cashew is being more humid. We as exporters are negligent in not taking enough care on moisture content as well as not taking enough care to ship it out on time. Due to ever-growing demand for the produce and also as intense competition made us to accept whatever they got. This is one aspect that we as exporters had to take care in the coming years and also there are significant investments happening from exporters’ side which will bear fruitful results in the coming years in Côte d’Ivoire.



Ms Suchithra Balasubramanian, CEO, nanoPix

I am very much excited with WCC, especially the team which organizes this event is quiet professional and can meet elite group of the cashew industry people. The knowledge which we get from this conference is amazing and I am looking forward to get more knowledge about the cashew industry.

RCN Trade- A Runaway Train



Discussion: RCN Trade- A Runaway Train

Defining RCN quality parameters for cross-border trade, standardising RCN trade contracts, arbitration and mechanisms for dispute resolution, challenges in storage and moving RCN

Moderator: Mr Ashok Narayanan, Director, Orion Commodities

Panelists: Mr Krishnan Nair, CEO, KGN Group, Mr Vu Thai Son, General Director, Long Son, JSC
Mr Rajesh Thakker, CSKS International Ltd

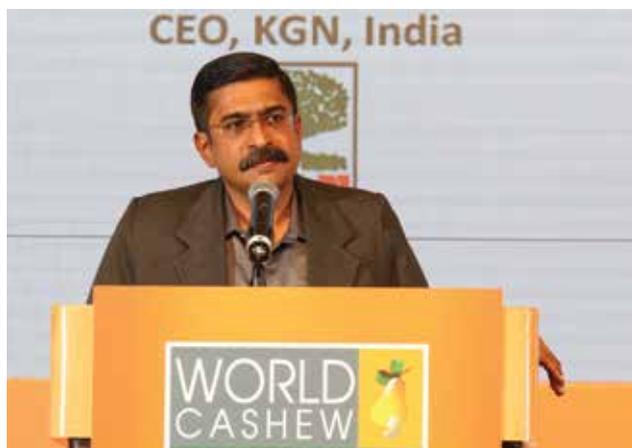
Initial Comments by Moderator

In this section we are going to discuss about the problems, pitfalls and pains in RCN trade and what should we do to address these challenges. RCN business has grown at a CAGR of 15 percent. Indonesia looking at new plantations, new comers in the Asia like Laos, Myanmar. Lot of business is going to be taken and is going to make sure that it is regulated properly. Are the players protected, whether stakeholders have adequate protection control over performance, over quality, are the processors buy has increased the volumes which was protected? We have many questions with few answers and now we are going

to discuss about the same in detail in this session.

Mr Krishnan Nair, CEO, KGN Group

The Indian state of Maharashtra is celebrating its centenary year of cashew processing and we are proud to be associated with the industry which has crossed 100 years. But unfortunately, there is no standard reference point for RCN contracts in India. Vinacas have very good set of reference terms for RCN. In these days of mechanisation something has to be done about it. Should we have one standard for RCN contracts?



Considering the state of circumstantial compulsions and some conventions and considering the need to take into account the relationship which already exists, it is immature to have one standard set of contracts for RCN when the needs are different. Rather we should have “Terms of Reference for RCN”. As mentioned by Dr R K Bhodes, a committee formed by CEPCI had already formulated the standard terms of reference for RCN which will be known in due course.

We have the “Terms of Reference for RCN” in Vietnam and in ACi. They have done a wonderful job by giving pictorial representation to the farmers and traders over there and we need to ponder the global standard similar to that. Africa exports not only to India, Vietnam, and Brazil and also to Kazakhstan but not sure whether they started processing and may be it goes to China or some other country. Should we do it collectively with VINACAS, CEPCI, SINDICAJU, ACA and ACi or be isolated and do it alone?

In RCN trade, there is no good supplier or buyer. Also there is no bad supplier or buyer as it all depends on perception. Every supplier or buyer is as good as his last contract. We should respect that and not to put anyone in to this mold. The people who should be considered in this journey are kernel buyers, processors, traders, farmers, governments, regulations, facilitators like banks, shipping lines and inspection agencies.

How should the “Terms of References for RCN” be set? The processor is in a fix because kernel contracts are made by

kernel buyers and RCN contracts are made by RCN sellers. The requirement of the processor who has to fulfill all the terms in a developed country or in any country regarding food safety has not been passed on to the traders so it should be considered very seriously.

Principles we have to consider while setting the “Terms of Reference” can be summarized as “RISE”. Respect - each and every person in the chain, Integrity- fair and not one sided, Service- have utility and Excellence- promote improvement in quality as well as good trading practices.

From prudence to practices and precedents, we should go to proper protocols, procedures, programs and policies. When I speak about practices, we must consider why we have certain things like the yield and we always carry in 80 kg bag but not in 100 kg or in one metric ton bag. This practice has come up from more than a century ago because 80 kg is the maximum a worker could carry at that time. Why do we export 50 pounds but why not something more? For example, in India if we sell 50 pounds, it is illegal as it comes to 22.68 kg which does not fall under the metric system. The precedence in the past set a minimum for good things and a maximum for bad things. So we have minimum outrun and maximum count, moisture, admixture and defectives. This minimum outturn principle is now being violated when people say if it is 51 pounds is ok and this is surprise if it is more than you get more. No processor or exporter of cashew kernel will get a better price if you export 315 count cashews instead of 320s. These are the guides and beckons and we cannot ignore these practices and precedents. Now on the operational things, there are Protocols – who should do, what, which order, where and why it has to be done.

The procedures - how to take samples, how to determine outturn, lot of these are already mentioned in VINACAS and ACi’s protocols.

The programs - we need programs for trainings and for reference and also need policies in compressing all the above and some sort of codification. In the end, all we need is peace of mind when we go into this process. Let

us Debate, Dialogue, Discuss and Demonstrate rather than Dissent, Distort, Disrupt and Delay.

Mr Vu Thai Son, General Director, Long Son, JSC

Long Son Joint Stock Company is the largest importer of RCN in Vietnam and every year we import about 70,000 tons of RCN. Vietnam is importing most of the RCN from Africa and Indonesia as its processing capacity is huge. Hence, the competition is intense among processing



factories for sourcing the required RCN and the demand for kernel is also very good. Export of cashew kernel from Vietnam continues to increase year after year. Last year we have increased export of kernel by about 3.7 percent in terms of volume and in value also increased substantially. In 2011, when there was a market crash and many people were out of the business. Since then up to 2016, the market kept moving higher and higher and the uptrend in RCN is still continuing unabated. Even some big processors reduced their processing capacity as they are not making good money. Instead they started trading cashew as there was huge competition for buying RCN from Africa. During 2012 to 2016, everyone enjoyed profits because market continues to rise but certainly in 2017, many people suffered loss -not only who trade RCN but also who buy for their own processing.

In 2017, Vietnam has faced so many problems in buying RCN when there is huge demand and people even buy from unreliable sellers. Last year I also had a problem as everyone hurried to buy RCN as there was no other option for me but to chase whatever RCN is available from other

brokers and otherwise I would have not enough RCN to process. There are some brokers in Vietnam who doesn't know much about seller's background.

In 2017, some Vietnamese buyers have not even received their advance payments for partial / rejected RCN shipments. When demand is big, quality goes down. Everyone was happy when the first crop landed in Vietnam from Cote d'Ivoire and Nigeria which was a reasonable good quality. So, lot of processors signed contracts but later they faced quality deterioration as outturn is less and also because of high price as many sellers didn't dry their RCN well. The quality differs from loaded port to destination port by about 3-4 outturns. Lots of problem faced by Vietnamese buyers is not resolved yet.

This year there is not much enthusiasm in buying RCN due to quality problem. From 2017 by learning experience, the Vietnamese people will choose who are the right partner, supplier and the seller to buy. We hope that African countries will understand the importance of drying RCN before shipping out because a lot of money was wasted unnecessarily due to sharp reduction in moisture.

The future price of RCN will depend on the kernel price. If kernel buyer buys at high price we also pay high price for RCN and if kernel price is less then RCN price will be less. In 2017, we have faced some problems but in 2018 there will be a lot of problems in terms of financing. For processing of cashew of same quantity when compared with last three years we need more money. So who can have enough money and whether the banks in Vietnam are willing to finance enough money? These are the two questions that Vietnamese buyers are going to confront in 2018 season.

Mr Rajesh Thakker, CSKS International Ltd

I am going to elaborate on the issues concerning the raw cashew nuts quality parameters. As most of these quality problems arise at the source, the onus is on the exporters to understand, how they manage to control it and what do they do about it. We as traders of RCN should make conscious efforts to improve the quality of RCN which



is very important for all of us in this business. Everyone knows very well how to assess quality but still it has been a lagging factor and talked about in all the conferences.

Why does an exporter fail to control quality and why does he end up with not doing it correctly?

- a. He is not well-educated and doesn't know how to control the quality. This doesn't seem to be a big problem. He could be educated.
- b. The exporter involved is not a person of high integrity. Well, he won't last in the system. May be once or twice, how long?
- c. Exporter in concern is a person or company of high integrity but is driven by certain measures which are beyond his control to deliver the goods which are not rightly or correctly dried.

I would like to focus more on the last one rather than the first and second mentioned above. The exporters should not be pushed into delivering beyond a certain time frame. Generally exporters live under a fear of the contracts being dishonored as prices are going down in the international market and hence some kinds of claims are coming up as far as the prices are concerned. In my personal opinion, most of the quality aspects are driven by commercial reasons in one way or the other, which can't be ignored or ruled out.

In international business, one has to meet deadlines and

have to perform. As far as prices are concerned, once the contract is done with the exporter, if the KYC of exporter is done, the exporter should not live under fear, rather put his complete energy / resources to make sure that the crop is dried well and deliver it because there are many parameters which are not in the control of the exporters like shipping line schedules, price behavior, logistics etc.,.

Drying of the crop is done manually at exporter's end, which depends on Mother Nature. In Africa, exporters are primarily working in the monsoon season as they themselves are not sure when the sun would be shining. Moreover, they won't have fair idea of when and how they would deliver the crop and hence perfection won't be there. It could vary and hence they expect most sensitivity from their buyers. If the supplier is a reliable person then he should be given that leverage rather than being put under pressure to push moist cargo. There is no reward to exporters for a higher yield. A bilateral or mutual gain or loss matters which should be looked into. Whether the exporters could be rewarded for a better yield as this could motivate them in delivering the right product?

Moisture- Everybody is of the view that the standard should be 10% and it has been measured by manual outlook rather than mechanically. We should have some kind of base or parameter where we could mutually agree on. All of us should know what is eight or ten or twelve percent. We all understand what is well dried, but we may not agree on what is 10%. In these matters, if exporters are in sync with the buyers of their exact requirements, it could really help.

I am from Ghana and personally recommend or suggest that exporters should have some kind of agencies like RBS, VINACAS, VINA CONTROL or any other regulatory bodies which could be present to inspect the quality which could reduce the problems, as we don't have such agencies in Ghana. At the end of the day, we have problems when bad cargo is delivered, the loss or damage is already done. The claims and disputes will force either seller or buyer to suffer losses. So if we could have some kind of controls,

then we can prevent loss.

It is difficult to implement but I request exporters to stop speculating before the crop arrives and not to commit to deliver in big quantities during the initial stage of the season which may disrupt the market underlying principles.

Q & A:

Mr Pradeep : We shippers from India having serious problems because of high prices and parity and at the same time, Vietnam process a bigger quantity but sells at fewer prices. Don't you think to increase price. You are selling W320 at USD 4.65 or 4.85 USD per lb but India could not think even USD 5.00 per lb. How is it possible?

Mr Vu Thai Son: The cost of production in Vietnam is cheaper than India. Thus Vietnam manages to sell at a cheaper price than India and can still make money. But last year most of us made money by selling shells. Sometimes we have bank loan and the deadline of bank loan, it may be in September. We have to pay this. The banking system (risk assessment centre) in Vietnam raise complaint and share the information with all other banks and come to know how much this company has borrowed money; So the level / score in the bank will be lowered and it causes problem or affect future borrowing of the person from the bank. Vietnam is a developing country and the business is booming. The government doesn't allow even banks with surplus to lend money for businesses / companies beyond a certain limit.

There is a counterparty risk which is associated with the buyer and seller, people tend to default. Can we have a rating mechanism or regulatory mechanism, so that buyer or seller is able to judge each other more efficiently?

Mr Krishnan Nair: We are discussing on the same, called as the terms of reference. I believe that every contract should be considered as a sacred thing whatever the case may it be. The shipper, if he is not able to ship it then he should compensate the buyer. The buyer, if he is not able to fulfill then he should compensate the seller and so on. For processors, as far as the kernel buyers are concerned, we have to fulfill our contracts, even if we are shipping at

one-dollar loss.

But as far as RCN contracts are concerned, we find that contract sanctity has been taken for granted. Time is the essence of contract and we should have a time frame for fulfilling the contract. So, we can have terms of reference which people can refer to. What happens if the buyer is not able to fulfill the contract? For example, vessels call on ports in Africa very irregularly. Even if we don't ship, it cannot be considered as non-shipment because it is there in sub-contracts, and we can always sell it for a later term. We also ship out from India, Vietnam. Sometimes we do have delays. At times we have to pay the price to keep our contracts sacred and intact.

About the associations, Dr Bhooedes was talking about it and there could be some terms of references. We are given a way out for our suppliers and told them if you can't ship out on this date, you have to show us the goods, tender it and pass it, because we understand the problem in Africa and if that's done, we are willing to extend the contract by 10 or 15 days or till the next vessel come. When price goes up then cargo is given to somebody else, similarly when the price crashes, some people in India or Vietnam don't want to honour the contracts. We have to find out something wherein the RCN trade is not just a piece of paper, but it should be codified.

Mr Ashok Narayanan: Can we have a rating system for suppliers and buyers of RCN?

Mr Vasudev Barkur: As far as ETG is concerned, once the contract is done, it is always honoured, no matter where the price is. Many times we see disparity between RCN and kernel prices. But business has to run on a continuous basis. There are number of times we do make mistakes without knowing geography, not knowing the local domain and not fully aware of the counterparty while paying money / signing contracts. You may end up losing money or may receive below the quality shipment. But if you rely on reputed players, things may not go wrong.

Mr Ashok Narayanan: Its fair point, a lot of problems could be avoided by dealing with right people. But when

the market grows from USD two billion to about USD six billion, based on the size of business, it is bound to attract more participants. Is there a possibility of a rating system on neutral terms? This is the question for CEPCI, VINACAS and other pundits in the business to ponder.

Mr Krishnan: It's not a good idea. Everybody has done something good but some people may not be liked by others. For example, if CEPCI has a rating system for suppliers and one of its members default. Are you going to delist them? I don't think so. It's not good for industry as a whole, as per my view.

Mr Ashok Narayanan: To counter Mr Krishnan's view, there are some rating agencies, which would propose rating on neutral terms-nothing to do with companies. People should involve with that and evaluate performance standards and based on that ratings may be assigned as AAA, AA+, BBB etc,

Mr Rajesh Thakker: I agree with Mr Ashok. The rating may not necessarily be one, two or three, that really doesn't work well. It could result in some kind of unhealthy competition or inequality. We have uber drivers and uber customers who are rated. Based on the reviews from users, buyers, sellers and some sort of system could be formulated where the rating is generated automatically.

Mr Gunjan Jain: As a major buyer of kernels in India not being shipped out from India, we have faced issues of delivering on time. I would like to welcome this kind of rating mechanism and doesn't have to be any agencies. It's can like the Trip Advisors we have in the hospitality industry. May be Cashewinfo can take the initiative to work on these and put it on a common platform on social-media, where if I can raise my complain (mentioning the contracts signed) by naming the person who has done what and if that person can't prove my charges within the stipulated time then the person's name stays there. Based on that buyers and sellers would have some sort of idea to take informed decisions rather than engaging / dealing with them.

Mr Naveen: Basically, we are a grower and do around 6,000 acres of almonds and pistachios and 12,000 acres of cashew nuts in Panama. From the almond and pistachios board we had couple of things came up six years back. They started marketing order, kept a base price. Regarding the financial product if the buyer is not able to finance the product, they start giving 25 percent to the grower every quarter so that the grower can use that money for the whole year to make things happen and send out the products. By this way, the finance is provided by the grower itself and the buyer can use the money and start paying 25 percent every quarter. Both are benefitted and they don't have to go for bank.

Mr Ashok Narayanan: The problem with cashews is, it is grown in many origins. Almonds are a miracle; it's the first world product and there is enough money in Almond Board.

Mr Naveen: In 1995, when almond production was much in excess and every one was facing trouble that is when the marketing order came up. I see so many boards from different countries here. So why can't every single member from the board form a different board take out 5 cents per kg from every farm that is being sent out from the growers and make use of the money. Why can't we keep governing the board and maintain the cashew price all over the world as a single entity?

Mr Krishnan Nair: In India, we already have the CEPCI which has a control system for cashew kernels and all the exporters have to contribute which takes care of quality part.

Mr Naveen: About the rating. We have blue book rating in almonds. The chart shows the kernel size, price, etc., every buyer/seller/processor will have his / her own ratings and based on that one could decide whether to buy or sell from whom. The problem with cashews lies at source. So similar to USDA, why can't have an inspection body before it is being shipped out from the origin or source?

Mr Krishnan Nair: There are two types of raw cashew

contracts. One is shipped quality and the other is landed quality. In shipped quality contracts, the buyer sends his representative to origin to check the quality prior to shipments and only after getting the certifications, can the shipment be made on time. The problem is only with respect to landed quality.

Mr Ibrahim: It seems from the discussions that people are of the view that the sellers are out to doing their best to sell the products. That's not the reality. The buyer also has to think about problems faced by the sellers from Africa. We don't have infrastructure, financing, at times mother's nature is not on our side. If we can get the contract to deliver by this time, sometimes it may affect the quality of the product while delivering. At times the buyer has to give leeway to sellers to deliver the product at a future date or you can re-negotiate the contract terms based on the quality of the produce received by the buyers. The sellers want to sell their produce to make money, but by not selling inferior quality products.

Mr Vu Thai Son: Honestly we understand logistics problems in African countries. Even if we buy early from Africa but we do not process immediately. We will store in warehouse and process the same 3-4 months later. So we don't care about late shipments, if it is due to logistics problems. But why all of us would like to have early shipments, because of Mother Nature. We believe the first crop will be always good and the crop quality deteriorates thereafter.

Ms Amanda Wright, Purchasing Director, Humdinger Foods, UK

WCC is a very good platform and I am attending for the third time. Here we discussed about the trends and market dynamics, quality issues and food safety. Also it is a good platform to meet and contact people across the global cashew fraternity and have developed good relationships with the participants over the years.



Mohamodou Sylla, CASA-Cote d'Ivoire

I am really impressed by the number of participants present here across the entire cashew value chain. It's a unique opportunity/platform to meet lot of customers and to do business with them.



Cashew Kernel - Buyer Requirement, Expectation and Gap



Discussion: What does cashew kernel buyers want? Expectations and gaps

Understand the Kernel Buyers Regulatory and Business Environment and Changes
in their Market to Serve Them Better

Moderator: Mr Vu Thai Son, General Director, Long Son JSC

Panelists: Mr Gunjan V. Jain, Managing Director, VKC Nuts Pvt. Ltd., Mr Amit Khirbat, President and Global Head -
Cashew Business, Olam International Limited, Ms Amanda Wright, Purchasing Director, Humdinger Foods,
Mr Sadanandan Nair, Business Head-Cashew, Vink Corporation, DMCC

Initial Comments by Moderator

In the first session we are going to discuss about what the cashew buyers wants, expectations and gaps. Cashew industry in Vietnam commenced in 1990-91 to 1992 and during those days there was a lot of workers around 2000-3000 people going to one factory and it was very difficult to find jobs in Vietnam. Workers were skillful, therefore everything from selection of raw nuts, peeling, shelling were done by hand, the quality of cashew was excellent, super white, good taste. Price of WW320 was at 1.6 USD per pound and the demand was not good. Later Vietnam found a lot of foreign investors as a result it was not easy to find workers. So we started using machines. The machines in Vietnam used to process big volumes but the quality was not good because of scrapping, testa was more, higher moisture, colour was getting darker but the price was getting higher even for the poor quality. In 2017, the price of WW320 even went up to USD 5.20-5.30 per pound because of demand. Due to stringent food safety standards, buyers from US and Europe rejected the poor quality shipments due to Salmonella, Ecoli, Napthalene, Bromide etc., So, FDI is sending out more and more people for inspection every year to Vietnamese factories.

Mr Sadanandan Nair, Business Head-Cashew, Vink Corporation, DMCC

Expectations of US/EU Buyer from Africa Based Single Origin Supplier



Vink Corporation is a single origin supplier as of today and the expectations are same from all the origins from India, Vietnam or Africa. The critical requirements that the buyer expects from the supplier of cashew kernel are:

- Delivery commitments / No defaults
- Product traceability
- Product quality
- Global food safety requirements
- Good manufacturing practices (GMP)
- Ethical trading initiatives (ETI)
- Site security
- Corporate social responsibility (CSR)
- Business sustainability

In short quality, food safety, productivity and sustainability are the four pillars and basic requirements of any western buyer.

Quality and GMP

- Adherence to AFI standards
- Work hygiene practices
- No sweating at work place
- No product spillage on ground
- Clean crates and hand sanitization
- Section-wise restrictions on entry and exit
- Hair net, mouth mask and uniforms
- No damaged floors
- Insect control
- Dust control

Product Traceability

- Africa's biggest advantage is its single origin supply
- Traceability check for
 - Product quality
 - Fair trade practice
- Traceability phases
 - RM traceability
 - Process traceability
 - FG traceability



Foreign Matter Contamination and Products Free from Infestation

- Most important requirement of buyers
- Foreign matter is most common in cashew and need to be addressed: Stones, hair, paper, metal, cloth pins and buttons, plastics, wood, glass etc.
- Infestation live or dead to be avoided
- Microbiological issues - Salmonella, E coli etc.,

Other Important Requirements



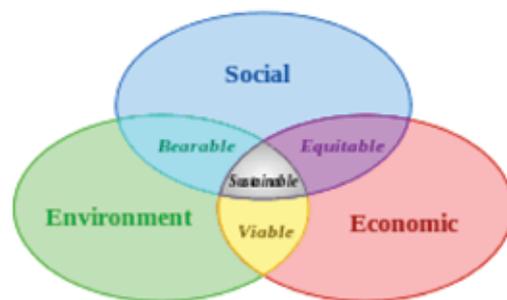
Corporate Social Responsibility- It is not compulsory or mandatory. A weightage is given to CSR that the company follows by the local government, NGOs and international buyers. It is very important for the corporate to understand along with the people and find out common way in which the needs of the people who work for them are met and addressed in the best possible way.

Ethical Trading Initiative- It is related to international labour laws as well as the laws of the local government. To treat the workers fairly and equally and to meet the basic requirement of them like a clean and neat wash room, a crush, and dining room, health care etc.,. There is a demand coming out from both US and EU buyers that the finished goods should be sourced from the companies which follow the ethical trade practices.

Site Security Controls- This is becoming very important considering the global security challenges that is being faced by all. Buyers should make proper arrangements so that nobody enters the factory unnoticed; neither the materials that is brought into the factory nor entering without any proper check up. We should have strong security control, covered boundaries and restricted access for both man and materials.

Sustainability Models are Common and Top Preference to any EU and US Buyers in Africa...Any time.

SUSTAINABILITY MODELS ARE COMMON & TOP PREFERENCE TO ANY EU&US BUYER IN AFRICA...ANY DAY.



Vink

THANKS

Mr Gunjan V. Jain, Managing Director, VKC Nuts Pvt. Ltd

Changing Regulatory Landscape in India and Expectations of Indian Cashew Kernel Buyers

VKC Nuts is the largest processors and packers of all nuts and dry fruits in India and cashews are an important part. India is the world's largest and fastest growing economy with 1.2 billion population of which nearly 65 percent is



younger than 35. During FY16-17, India's Foreign Direct Investment (FDI) stood at USD 60 billion and CAGR of 19 percent from USD 36 billion during FY13-14. India is the third largest start up base in the world with over 4,750 technology start-ups. Urbanisation, growing middle class and increase in the consumers spending are the driving forces of growth.

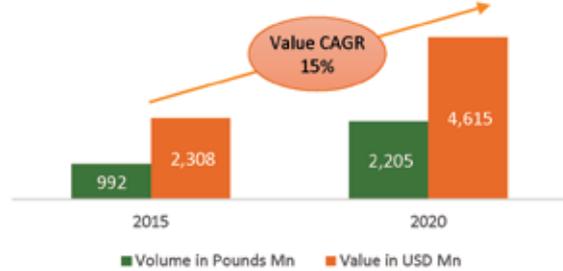
Growing Retail Sector

Retail has emerged as one of the most dynamic and fast-paced industries due to the entry of several new players and accounts for more than 10 percent of the country's GDP and 8 percent of employment. India has ranked first in the 2017 Global Retail Development Index (GRDI) rapidly progressing from a 20th position in 2014. Retail sector has benefited from rapid growth in e-commerce wherein 100 percent foreign ownership is allowed in B2B e-commerce businesses and for retailers that sell food products.

Industry Overview

- Nuts and dry fruits is very old but highly fragmented industry in India
- Consumption of dry fruits in India has been low compared to other countries
- Amongst all dry fruits, consumption of cashew is highest

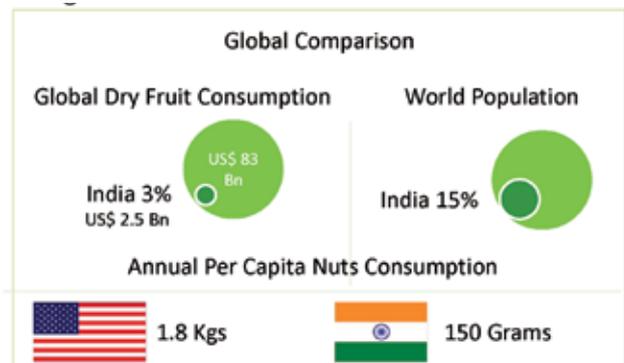
Expected Growth in Indian Dry Fruits Industry



Source: India Food Report 2016

Dry Fruits Consumption - 2015

	Annual Consumption in Pounds Mn	
	India	USA
Population	1.2Bn	321Mn
Cashews	352.80	110.25
Raisins	198.45	509.10
Almonds	123.48	595.35
Pistachios	48.51	110.25
Walnuts	35.28	123.48



Source: India Food Report 2016

Cashews- Most Widely Used Nut in India

- As snack - raw, roasted and fried forms
- Preferred ingredient- for traditional Indian snacks and recipes
- Most used nut in "HoReCa" segments
- Used in multiple verticals of food industry - bakery, ice cream etc

Changing Regulatory Landscape

Regulation is changing in the country and now we have new food safety law by FSSAI (Food Safety Standards

Association of India). FSSAI has been created for:

- Laying UNIFIED science base standards -in tune with evolved economies of the world
- Aims at being a single reference point for all matters concerning food safety and standards
- Regulating, manufacturing, storage, distribution, sales, imports and all facets of food sector

The outcome of introducing FSSAI can be ascertained from the following comparison:

Pre FSSAI-2011 and FSSAI-2018

Pre 2011

- Food laws - fragmented under various central and state laws
- Lax enforcement of laws
- No mechanism for creating awareness of consumers and stake holders

Now

- One cohesive centralized agency –All laws under one umbrella
- Stricter enforcement
- Concerted efforts to educate consumers and stake holders by FSSAI

Long term benefits, but there are there are short term challenges as regulations are evolving. Some of them are:

- No health claims can be made on consumer packs unless backed by authenticated studies with due references
- It is not clear whether this is applicable for only propriety foods or for natural products as well whose health benefits are known for ages
- The Interpretation of rules is not uniform across the states causing heartburns for the processors
- The case in point-we were issued show cause notice for “Misbranding” for mentioning product as “Roasted and Salted Cashews” for having found traces of

“NACL”, which is a just a chemical name for common edible salt in the lab testing of our cashews

Another case needs to be highlighted here. Under the law, manufacturers are required to mention shelf life on all raw nuts in bulk packs, whereas no study on shelf life for raw natural products is available.

On the other hand, labeling for imported food products needs serious application-any technical error can result in rejection even if the product is in conformity with existing laws. For example, an imported consignment was rejected for a mere technical flaw – the required information was given on the bulk pack but on two different stickers instead of one. Additionally, all food products are supposed to be moved, stored and transported in FSSAI approved warehouses/vehicles.

Legal Metrology-Standard Requirements

- Already in place, but becoming increasingly stringent
- All manufacturers are required to be registered
- However, very few are aware of this requirement
- Yearly inspection and stamping of all weighing and calibration equipment is must by the department
- Non-compliance can result in seizure of equipment
- Clarity with regard to the size of fonts with respect to pack size and the minimum required information
- Same laws interpreted differently in different states

Concerns

- Some of the common mistakes that can cost dearly:
- “Rs.” Missing from the MRP
- MRP does not mention “inclusive of all taxes”
- The font size is not strictly as laid out in the statutes
- “Gms” cannot be used for denoting quantity in grams – “Grams” or ‘g’ is ok
- “Nos” and not “Pieces” is to be mentioned for denoting quantity in pieces as we were fined for mentioning Qty. as “01 Piece” instead for “01 Nos”

Good and Services Tax (GST)

Benefits

- Will boost GDP and trade significantly in the long run
- Lots of opportunities for organised players with seamless integration of national market
- No halting of transport on state borders- substantial saving in transit time
- Various state wise sales point not needed
- Logistics can be organized from DCs based on operational efficiencies and not for specific state

Challenges

- IT infrastructure issues
- Lot of mix up with regard to HSN codes
- Variation in tax rates across the same commodity (Cashew taxed at five percent but valued added (roasted and flavoured is taxed at 12 percent under different HSN code)
- E-way bill mandatory over INR 50,000

Expectations of Indian Kernel Buyer

Challenges as a buyer

- Lack of standardization
 - All specifications need to be standardized across the industry for benchmarking

Grades

1. WW240, W240, A240, P240, D240, S240, SW240
2. Tolerances of each grade to be same across the industry
3. Even different factories of same supplier have quality variations

Weights

- All units in metric systems Kg or tons

Packs Sizes

- Preferably of 10 Kgs

Rates

- To be mentioned in standard metric units
 - Like Kgs or Metric tons

Present Challenges -We get rates in 11.340 or 22.680 Kgs, which becomes difficult

Packaging Concerns

- Smaller the better- Vacuum retention
- 5 Kgs or 10 Kgs Pack- better pack from buyers perspective instead of 20 Kgs packs
- Impact on tin boxes during logistics

India -A Land of Opportunities

- Laws at nascent stage
- Have to be extra vigilant to be on wrong side for technical issues

But a billion populations await the best of the world.....

Ms Amanda Wright, Purchasing Director, Humdinger Foods

Expectations from UK Cashew Kernel Buyer and Opportunities



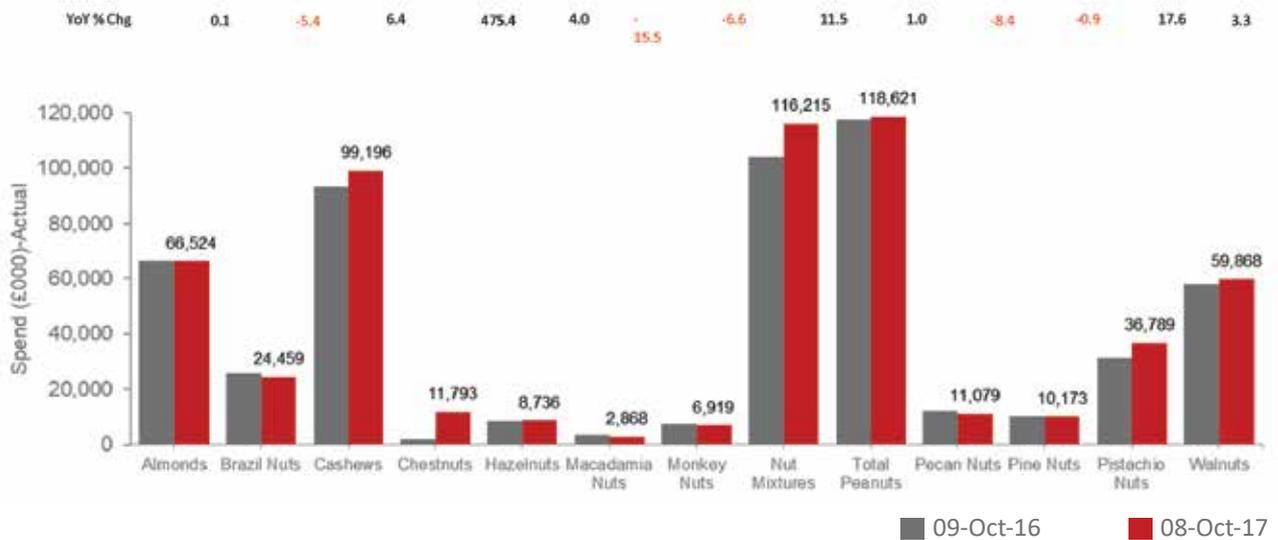
Cashew prices have increased significantly over the last few years and the demand continued to remain strong in the UK market. In 2017, the turnover of kernels in UK has increased to six million pound, partly due to increase in price. We are at the risk in UK market as demand may slow down, if the price continues to remain high as Brazil nuts prices are comparatively cheaper, may find more composition in the mixture of nuts.

Cashews are the third largest nut type with c. £99.2m in UK sales, whilst growth is strong at +£6m YoY

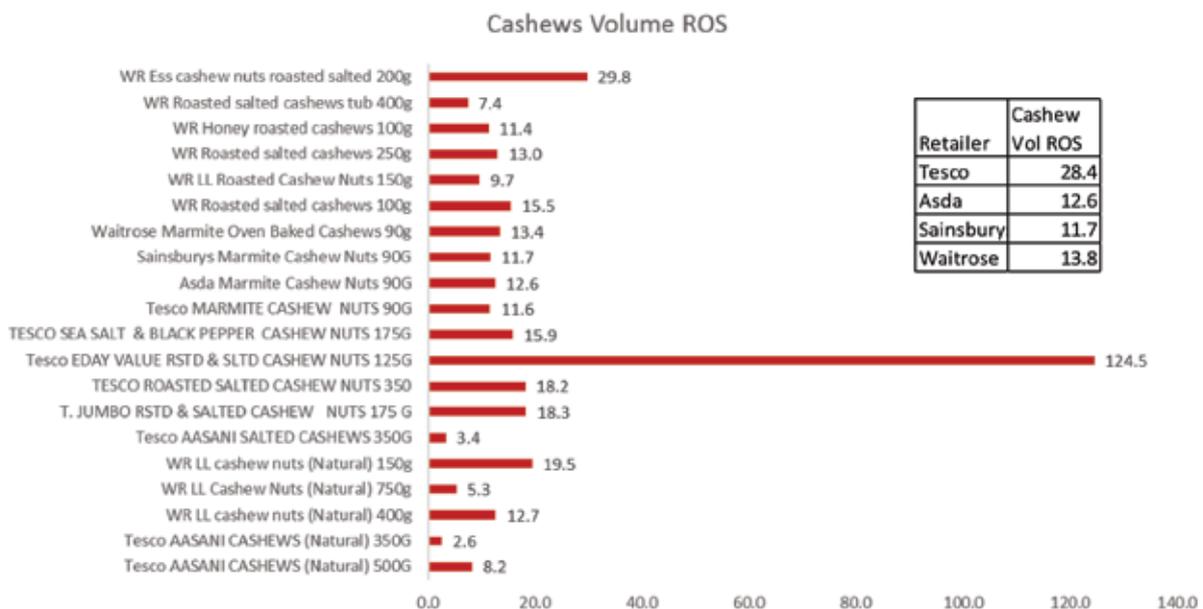
Spend (£000) | Actual | Total Market | TOTAL MARKET | Total Nuts | 52 w/e

YoY% change	Almonds	Brazil Nuts	Cashews	Chestnuts	Hazelnuts	Macadamia Nuts	Monkey Nuts	Nut Mixtures	Total peanuts	Pecan Nuts	Pine Nuts	Pistachio Nuts	Walnuts
Oct-17 vs Oct-16	0.1	-5.4	6.4	475.4	4	-15.5	-6.6	11.5	1	-5.4	-0.9	17.6	5.5

Source: Kantar 52 w/e 08th Oct 17

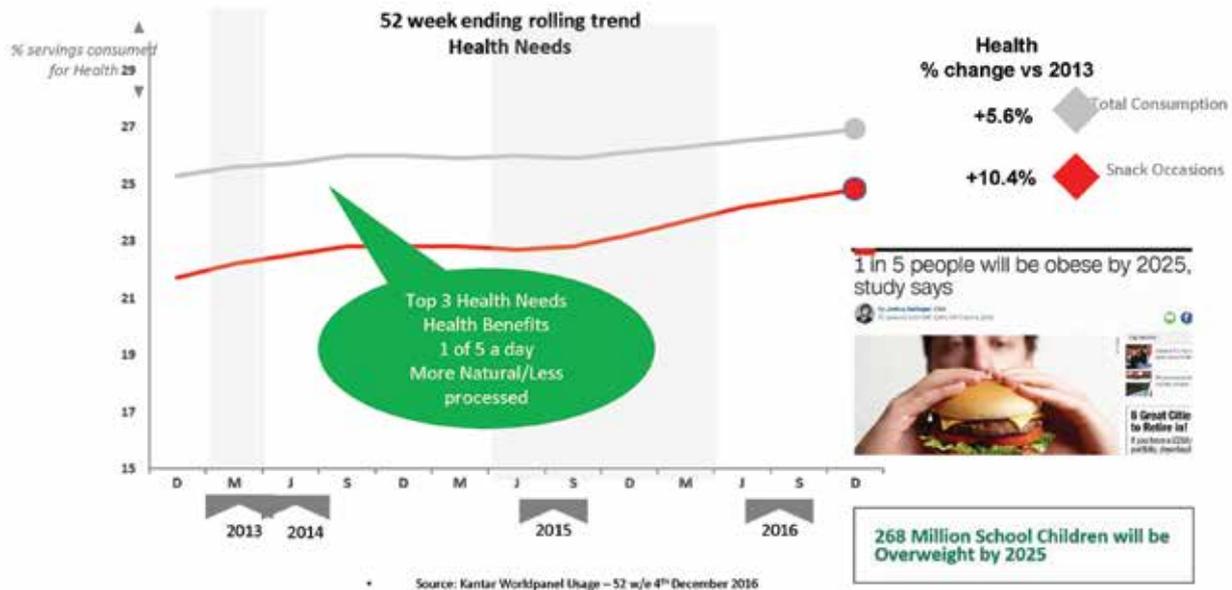


Everyday value and essential salted cashew lines drive the volume of repeat purchases per store, per week



Health Trends

Health has been steadily gaining importance over time, now accounting for over one fourth of all food choices and it is positive, functional health that is most important to consumers.



Sustainable and Ethical Sourcing

What the Future Holds:

- The demand for traceable and sustainable food supply chains is growing. Sustainable supply chain improvements can be achieved when parties collaborate
- There can be no transparency without traceability. In an industry where so many products are grown in one country and then exported and processed in another, this can only be improved with shortening those supply chains
- By promoting local processing at origin and investing in those communities, there is a possibility of increasing local employment as well as improving the environmental impact by reducing the carbon footprint
- The ability to know the growers and

farmers in our supply chain would give us the ability to work with them, through setting codes of conduct and installing confidential grievance reporting procedures. The goal is to create products that an ethically conscious consumer can have faith in

- Factories should work to become SEDEX approved

Factory Standards

Row Labels	Non Conformities	% of Total
Equipment	16	17.02%
Wooden Twig Style Brushes	7	7.45%
Wooden Items In Use Against Process	3	3.19%
Fabrication	18	19.15%
Temporary Repairs	6	6.38%
Bulbs Uncovered	3	3.19%
Hygiene	56	59.57%
Insufficient Pest Control	10	10.64%
Hand Wash Basin	9	9.57%
No Jewellery Control	6	6.38%
Smoking Not Controlled	5	5.32%
Protective Clothing Not Sufficient	5	5.32%
Hair Control Not Sufficient	4	4.26%
No Protection Below Sieving Platform	3	3.19%
Other	4	4.26%
External Traffic Routes	3	3.19%
Grand Total	94	

Passing audits is key, basic standards are not always followed and to work with European buyers, factories should have BRC or equivalent.

Contractual Terms and Compliance

Payment Terms

- Pre-payment concerns all parties involved, as we cannot guarantee product quality before stock arrives

Shipping to Agreed Specifications

- Seed - single origin per container
- AFI Standards – target mid to the lower end of the specification
- Pre-shipment sampling and testing
- Quality of cashews over the last few years has dropped
- Moisture and softness

Delivery Performance

- Reliability of delivery performance
- Delayed shipment
- Container utilization
- Container stacking
- Industry standard pack sizes

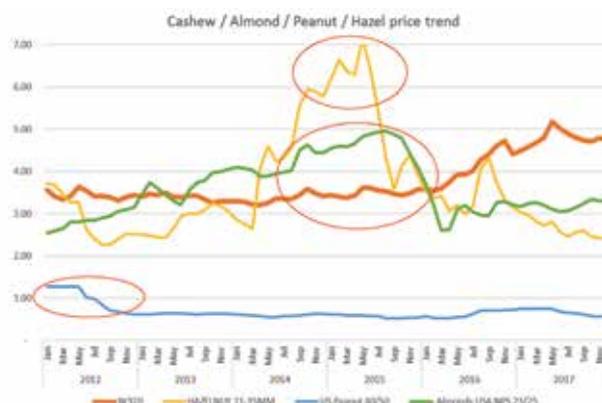
Mr Amit Khirbat, President and Global Head – Cashew Business, Olam International Limited

What does the kernel buyer want - reasonable and stable kernel prices!!

Apart from quality and food safety, kernel buyer also wants reasonable and stable prices for cashews.



Edible Nuts Price Trend – last six years



The price of peanut (red circle at the bottom) has been steady since 2012, the prices were high. A significant increase in peanut production in US due to new varieties of seeds and high yielding varieties introduced at that time. Since then, the peanut industry has become very profitable even more than cotton; in US cotton and peanuts are grown subsequently. Since 2012, peanuts are over supplied and it is a buyers’ market for peanuts.

Hazelnuts - yellow line at the top during 2014, March; which is the peak. There was a frost in Turkey, due to that 40 percent of the crop wiped off. Post that there was short drop in prices and the crop came back and the prices have been steady.

Third circle which is green line is the almonds, there was a spike driven by drought in California and then post December 2015, the market crashed because of crop being normal and some defaults in Dubai for various reasons and defaults carried to India and China.

Retail Price Comparison-Nuts

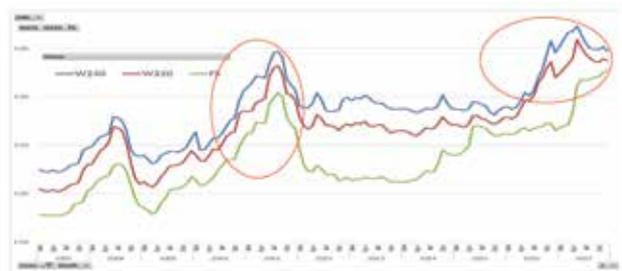
Retail price in \$/lbs	ALMONDS	CASHEW	MIXED	PEANUT
Q1 2016	10.83	9.77	9.26	4.63
Q2 2016	10.84	9.92	9.31	4.67
Q3 2016	10.88	10.08	9.26	4.66
Q4 2016	10.83	9.97	9.28	4.61
Q1 2017	10.78	9.98	9.28	4.61
Q2 2017	10.64	10.09	9.19	4.63
Q3 2017	10.86	10.46	9.23	4.63
Q4 2017	11.88	11.84	10.13	4.82
% Change in Q4 2017 Vs Q3 2017	9%	13%	10%	4%
% Change in Q4 2017 Vs Q4 2016	10%	19%	9%	5%



The retail prices of cashews have not gone up significantly from Q1-2016 to Q4-2017. It's a 19 percent increase in prices from 2016 although the bulk kernel prices has gone up 33 percent, taking FOB prices of 4.70 or 4.80 usd for W320. The retailers seem to be okay as almond prices also not gone down but the bulk almond prices went down. The price of cashew and almond on shelf is the same. Historically cashews are always cheaper than almonds.

Nothing special has been done to increase the retail price of cashews on the shelf, so the consumption continues.

Cashew Price Chart



Are the prices back to trend line?

In the above chart, price trend since of W240, W320 and Splits. Now the focus will be on W320, the bulk of the production. In 2007-08, the first spike seen in the chart was the financial crisis and in 2011, the second spike which is steep spike is the Cote d'Ivoire political crisis where the shipments did not happen and the market falls significantly again when shipments started. The third one is at the right most corner is the current price spike which can be seen.

Take way from the chart for us in the cashew industry; whenever the prices have increased sharply, there was

also a quick and sharp fall in prices. When compared with previous two spike the current spike is not that much steep, wherein prices moved gradually higher with up and down in between.

Price Movement

	2007	2011	2016-2017
Nature	Consumption driven Run	Supply (shortage) driven run	Supply timing mismatch amplified by consumption increase
Period	May 07 – Jul 08 15 months	Feb 10 – Aug 11 19 months	Mar 16 to date 22 months as of now
W320	2.13-3.46	2.77-4.72	3.68 - 4.90 and 4.7 today
Absolute increase	\$1.33	\$1.95	\$1.22
% increase	62%	70%	33%
IVC RCN Price in FCFA	Less than 200	Less than 275	Above 750 cfa

What is the need of the hour - cashew buyer's viewpoint?

- Reasonable and stable prices
- Stability in supply
 - Growth in supply that matches demand
 - Buyers are able to promote cashews without fear of uncertainty / huge volatility

This is where sustainability comes into the picture.

Who can influence this?

- Farmer – but his current income levels are already on the lower side
- Processor – his margins are very tight, but we can:
 - Develop better processing machines
 - Reduce processing cycle time
- Customer - is the king

Sustainability –why do we need it!

- Cashew supply growth has historically come from Africa
- With low raw cashew prices till 2015, there has been crop de-growth in Asia and reduction in growth rates

in Africa

- We need to grow the crop more than demand and rein in the prices
- Yield improvement programs and acreage growth initiatives are most needed
 - Pre and post harvest practices
 - New varieties and high yielding varieties

We need to achieve reasonable prices and high farm income to ensure cashew industry continues to thrive and compete with other nuts.

Sustainability as Valued by Customers

- Leading buyers pay a premium for sustainably sourced cashews
- Partnering with suppliers to grow the crop
- Giving back to the farming community
- Having people on the ground in relevant origins spearheading sustainability initiatives
- There is a potential opportunity to look at Asia as well

Sustainable Agri Practices are a Win-Proposition

- While these initiatives lead to growth in the crop and higher farmer income it also results in other benefits to raw cashew buyers
- Better kernel quality / outturn / processing efficiency
- Lower yield loss
- Lower defectives

And hence present a further opportunity to lower costs across supply chain for the ultimate benefit of the customer.

Q & A

Mr Ravinder Mehta: Prices of cashews have gone up in the last 4-5 years. Whether have you seen any demand destruction because of higher price? As per my view, the demand has also gone up in countries like India

and others. Normally price rise will see lagged demand destruction. From your perspective, have you seen demand destruction over the last couple of years?

Mr Gunjan V. Jain: In absolute terms, I would say that there is demand destruction. The overall nuts and dry fruits consumption in India is growing at 20-25 percent, but cashews are not growing at the same way as everything else. Walnuts have grown almost at 35 percent over the last three years, almonds at 18 percent. Cashews are not growing at the same pace. We see lots of shifts, when we talk about retail i.e. people are moving from cashews to almonds because for end consumers, the perceived value of cashew and almond is almost equal. In India, during marriage season gifting is a big segment. We have seen people moving from cashews to almonds in gifting segment.

Mr Urmil Raval, Director, Dryfruit Factory LLP

WCCE is very good platform and was attending the event for the past three years and it is a global platform to meet the people across the globe in one place. WCC is also focusing on areas where processing capacity is less so to say in non-traditional areas. I am thankful to WCC team/organizers for taking up this initiative for the betterment of the cashew industry.



Cashew Kernel-Update on Standards Nutrition, Food Safety and Promotion



Moderator: Mr Hari Nair, President, Western India Cashew

Panelists: Dr. Shobana Shanmugam, Senior Scientist–Foods Research, Madras Diabetic Research Foundation (MDRF),
Mr Sabyasachi Tripathy, ITC Limited (Foods Division), **Mr Paras Goyal**, Olam International Ltd

Initial Comments by Moderator

I have some breaking news. On 25th of January, the research paper of the Madras Diabetic Research Foundation has been published and now it is available on website. This is a wonderful achievement. The study has been conducted for more than three years. It was a study of 300 participants. The power of the study in terms of the statistical inferences is very significant. The study went through

rigorous statistical analysis by Dr. Lindsay Sabik, Harvard School of Health Sciences. Other big thing of this study is all the serum of the participants collected before the study and after the study has been preserved in a cryogenic freezer for further research and will be available for future reference. I welcome, Dr Shobana Shanmugam to speak about the study.

Dr. Shobana Shanmugam, Senior Scientist –Foods Research, Madras Diabetic Research Foundation (MDRF)

Effect of Cashew Nut Supplementation on Body Weight, Glycemic and Lipid Profile in Asian Indian Adults with Type 2 Diabetes: A Randomized Controlled Trial

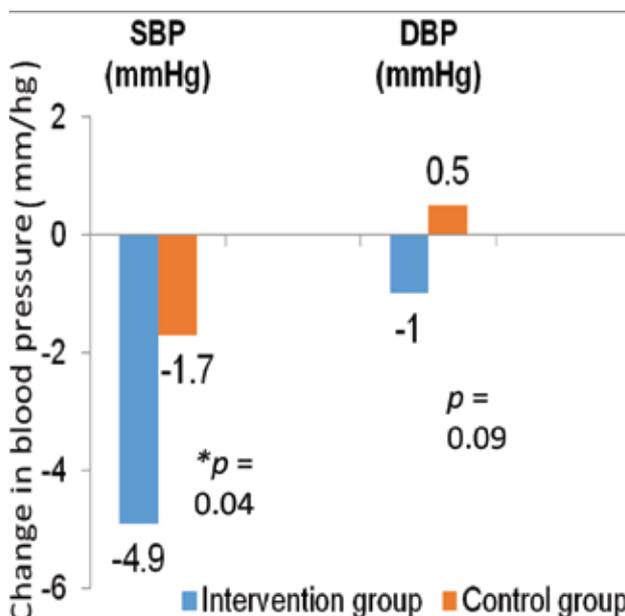


It gives me an immense pleasure to present on the key findings of clinical trial on consumption of cashew nut, a unique study from India covering more number of diabetic subjects. There is a misconception that consuming cashew nut will result in weight gain but in our study a consumption of 30 gram of cashews per day for three months didn't aid in weight gain and didn't increase the body weight as well as the waist circumference which is one of the risk factor for type-2 diabetic as well as cardiovascular complications in Indians as well as in other populations.

Key Finding 1: No Change in Body Weight, Waist Circumference and BMI

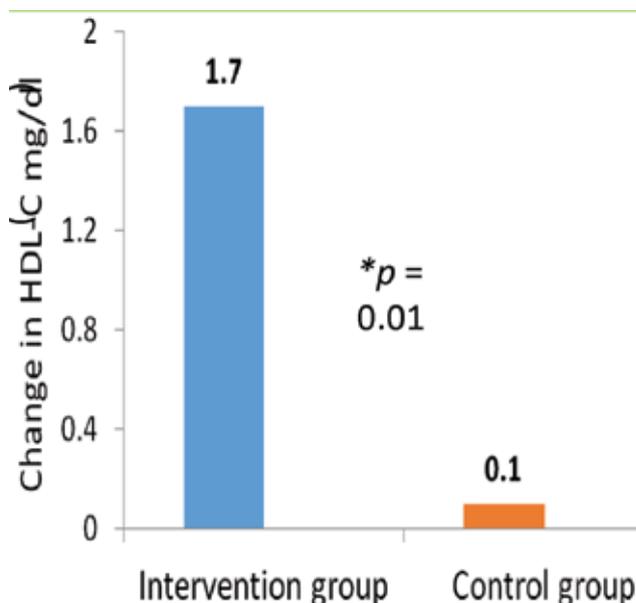
	Intervention (cashew group)		Control		P value for difference between intervention & control group
	Baseline (n=150)	12 weeks (n=129)	Baseline (n=150)	12 weeks (n=140)	
Body weight (kg)	68.3 (9.5)	67.9 (9.0)	67.1 (11.4)	67.2 (11.5)	0.07, NS
Body mass index (kg/m ²)	25.8 (3.0)	25.7 (2.7)	26.2 (3.8)	26.2 (3.9)	0.07, NS
Waist circumference (cm)	91.5 (8.0)	91.2 (7.9)	90.6 (9.1)	90.9 (9.3)	0.69, NS

Key Finding 2: Significant Reduction in Systolic Blood Pressure



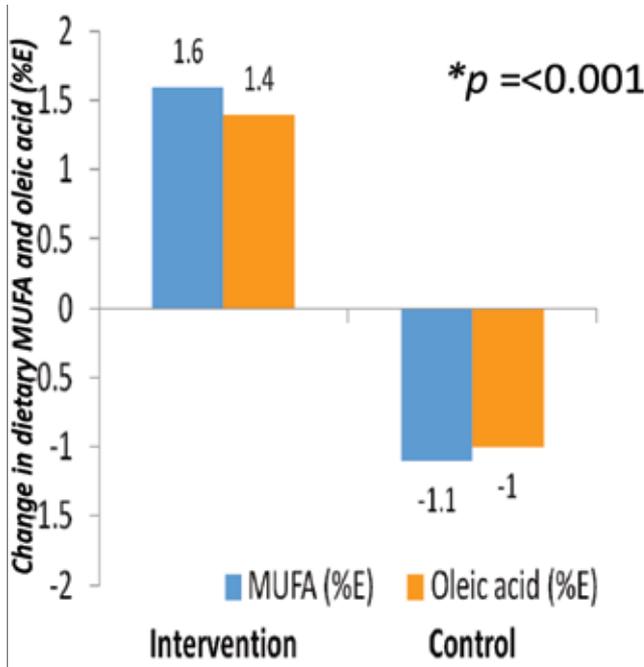
SBP - Systolic Blood Pressure; DBP - Diastolic Blood Pressure

Key Finding 3: Significant Increase in HDL-Cholesterol

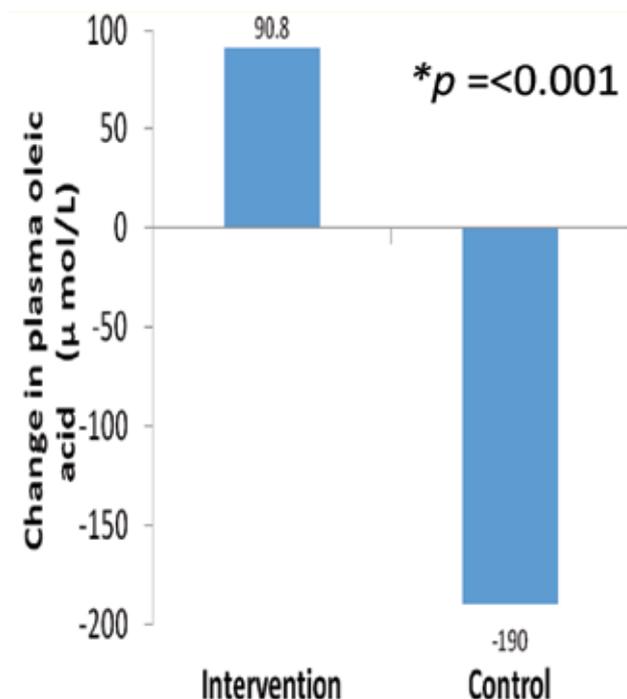


HDL-c, High Density Lipoprotein Cholesterol

Key Finding 4: Increase in Dietary MUFA and Oleic Acid (%E)



Key Finding 5: Increase in Plasma Oleic Concentration



Directions for Future Research

- Studies on the effect of cashew nut consumption in population at risk for diabetes (obese/overweight or pre-diabetes) would help to understand the preventive role of cashew nuts in Asian Indians
- Cereal – cashew nut matrix –newer avenues to develop products with lower the glycemic index
- Development of functional foods using cashew nuts: crackers, snack bars, beverages, meal replacers, pasta products etc. suitable for all including population with diabetes

Q & A

Mr Hari Nair: Can a claim be written on cashew packets or in advertisement with regard to the study?

Dr. Shobana Shanmugam: We can include that it is diabetic friendly and also it increases the HDL cholesterol. We can try incorporating the cardio protector but we should apply to FSSAI whether this kind of study is sufficient to make the kind of functional claim on that.

Ms Suchitra: Is there any study on nutritional change after cooking cashews-both pre and post-cooking?

Dr. Shobana Shanmugam: Yes, there are studies on effect of consumption of roasted and salted nuts but generally we recommend the plain unsalted cashew kernels to derive better benefits as they have lot of anti-oxidants. For regular consumption, it is good to have plain or mildly roasted cashew kernels to derive maximum health benefits.

Mr Sabyasachi Tripathy, ITC Limited (Foods Division), Bangalore, India

Best Practice Guide - Quality and Food Safety Management for a Cashew Kernel Supplier

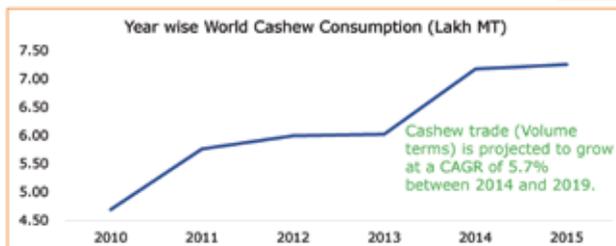
ITC is a conglomerate and I am a part of the food division which manufactures biscuits, pasta, noodles and ready-to-eat food and other snacks. I will discuss on quality



and food safety management from the perspective of a cashew kernel supplier. Cashew is accepted across the world because it is a healthy, tasty and most affordable nut. The common man consumes more cashew nuts today than the other nuts. Cashews are used in ingredients and also in food articles such as traditional sweets, breakfast cereals, home made foods and curries, biscuits and snacking, confectionery, bakery, ice creams, chocolate and beverages.



Cashew demand expected to increase in coming years.....



- Global Biscuit Industry expected to grow at CAGR of 4.7%+ during 2017 – 2025
- Global Breakfast Cereals market expected to reach USD 43.2 billion by the end of 2019 and will expand at a CAGR of 4.1 percent (2013-2019)

- Technavio predict that the global Chocolate and Ice-cream market will grow at a CAGR of more than 5 percent by 2021
- Bakery industry in the world is expected to grow at a CAGR of 6 percent by 2021

Are we Manufacturing Safe and Hygienic Cashew for our Consumers??



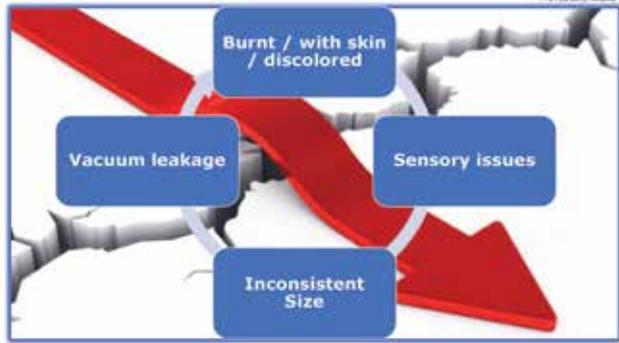
From the above pictures, this is not the case to be. It is important to acknowledge the fact that lot more needs to be done in the manufacturing facilities to produce good quality cashews.

Grave Quality Concerns

There are no specific standards with respect to quality, size, colour of the cashew, foreign matter etc., so standardization is the need of the hour for cashew industry.

Makes Us To Think.....

Other Quality Concerns



FSSAI-It is the nodal agency appointed by the Government of India to look into the manufacturing of all food ingredients in the country but still there are people who are functioning without the licence of FSSAI. There is a mandate to test your product twice a year from FSSAI approved laboratory. People in order to save 800-1000 usd are trying to skip that test. If you doesn't respect the law, obviously we are creating the problem for ourselves. So most of the issues will get sorted out if we obey the law.



Statutory compliances with respect to FSSAI still remains a challenge

Pillars of Efficient Quality Management System



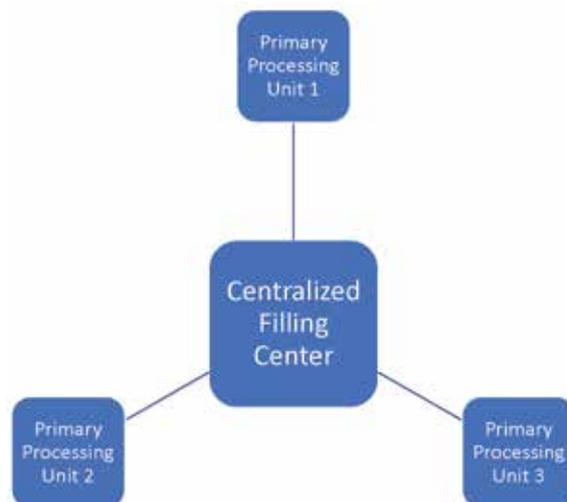
Mr Paras Goyal, Olam International Ltd - Vietnam

Quality and Food Safety Management in a Distributed Processing Environment



Nowadays cashew processing is more and more mechanised but not all the processors at all the places can have end to end operations where they can do mechanisation and complete process chain where they can finish the product by complying with the food safety requirement. The new trend coming in the last five to six years is that the processors can have relatively small to medium size processing unit where they can have mechanisation and then finally bring their kernels at one centralized facility which could have final quality control systems in place and get far better machines and finally export out from there.

Distributed Processing Model



Advantages

- Better quality control on finished product
- Cost optimisation
- Opportunity to use better quality mechanisation (food safety related machine)
- Reduced labour dependency / risk

Disadvantages

- Control system
- Reduced quality focus on primary processing units
- Quality issues during transportation

Quality Challenges

- Product quality
- Type and quality of intermediate packing material used
- Hygiene standards
- Quality of people employed in the plants

Way Forward

- Awareness and focus about quality
- Mandatory GMP standards
- Food safe packing and transportation
- Contaminant / allergen issues
- Proper identification labelling

Q & A

Mr Ravinder Mehta: What kinds of investments are you doing to invest in partnership with the suppliers to educate them on the perceived quality and the kind of supply issues you are facing? In the pre-GST era, manufacturers trading through the wholesalers and in the post-GST era, its one to one relationship between the suppliers and the consumers.

Mr Sabyasachi Tripathy: In any industry, it has become very important to join hands with the suppliers as they should not be looked only as a supplier but should be looked as a partner. There should be mutual respect. That's the way one can develop the supplier. In ITC, we have three tier mechanism by which we actually develop a supplier:

(i) Self-evaluation form i.e. we tell the suppliers about certain parameters and they have to grade themselves, (ii) Externally we go and audit the facilities of the suppliers and work with the suppliers in different areas and will give inputs on what needs to be done and to improve on that over a period of time and we work with him. If the vendor is improving then will be taken into consideration and if he is not improving and not keen on that then he will be blacklisted and (iii) Over a period of one year by doing this exercise we will grade vendor's based on certain parameters like self-evaluation along with the auditors.

Mr Pratap Nair, Board Member, Ambassador- International Nut and Dried Fruit Council



WCCE was very nice, a great platform to meet old and new friends and have had great time in this beautiful city.

Cashewinfo is already doing a great job, may be you can attempt in bringing more young entrepreneurs in the cashew business, create a separate panel for them to speak more on cashews, which would encourage the industry to achieve more.

Update on CashewWomen



Ms Viviane Alima M'Boutik
Competitive Cashew Initiative – Accra

An update on cashew women meeting- as discussed in previous sessions, there is a huge gap in communication and information. Information is required for empowering the cashew industry. Our views are to create a platform where we can exchange the knowledge to empower the cashew industry.

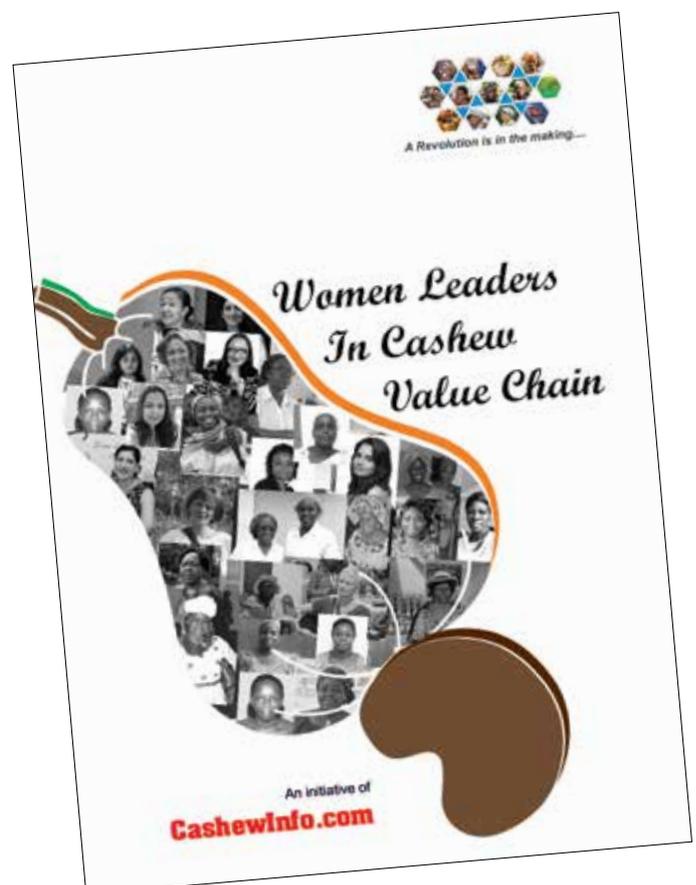
WE – We Believe in Us (Dream Team)

Women met regularly alongside in the cashew events to share their experiences in the physical space. The objective of these meetings is to raise the awareness and the self-confidence level of both men and women in the cashew sector. Every woman is a star which means everyone is responsible for building her own success story.



Let Women Positively Impact Humanity

- The first cashew women meeting was held during the World Cashew Convention, February 2017 in Singapore. During this session, the first edition of the cashew women book was released.

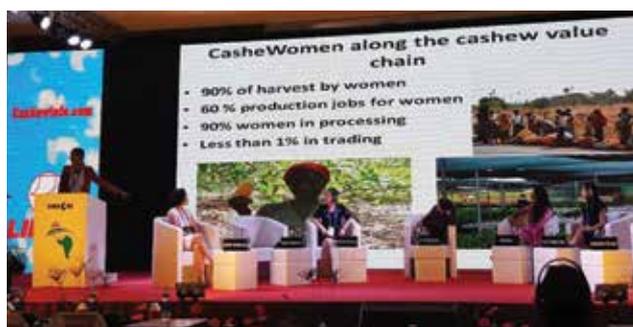




2nd WE Meeting - ACA Conference Sept. 2017, Cotonou (Benin)



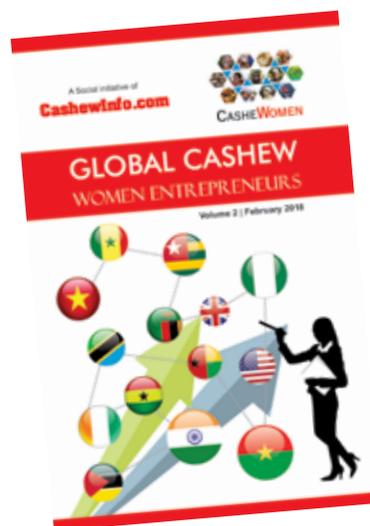
3rd WE Meeting – VINACAS Rendezvous Nov. 2017, Phu Quoc (Vietnam)



4th WE Meeting- WCCE Feb. 2018, MACAU



During this session, the second volume of Global Cashew Women Entrepreneurs book was released.



Current Communication Channels

- WhatsApp Group “Cashew Women” to support and generate discussions about the cashew sector, encourage mutual learning on occurrences in the cashew sector worldwide for over 100’s of women along the entire value chain
- Publication of Women’s Success Stories to encourage others to thrive in their fields and revolutionize the cashew sector:
http://cashewinfo.com/pdf/Women_Leaders_in_Cashew_Value_Chain.pdf
http://www.cashewwomen.com/about_us.html
- Website: www.cashewwomen.com

The Way Forward



New Generation in Cashew Sector



- The session will focus on new developments in production, processing, market, technology

Moderator: Mr Kalbavi Prakash Rao, Director, Kalbavi Cashews

Panelists: Mr Urmil Raval, Director, Dryfruit Factory LLP, Mr Jayaprakash Guraja, CEO, Agribazaar and the Chief of Operations - Staragri, Mrs Suchithra Balasubramanian, CEO, Nanopix Integrated Software Solutions (P) Ltd., HE Dr. Hean Vanhan, Director General, Ministry of Agriculture Kingdom of Cambodia, Mr Stefano Massari, Managing Director, Oltremare, Mr Vipul Sardana, Global CEO, Maersk Line Trade Finance Venture

Initial Comments by Moderator

This session is called “New Generation” and Innovation is the name of game today and our industry is no different. What’s the new generation is bringing to the table- an ability to see the future, to think lateral or out of box and innovate. Two decades ago, how many of us know that the industry would get into the automation to the extent

what we have seen today. In those days processing about 3, 5 or 10 tons of cashews under single roof was a challenge but today we are even looking to process 100 or 200 tons under single roof. The big question is “are we ready for the consolidation process?” We have the ability to process the world crop. But how can this scenario create parity for the industry? Many challenges

for automation or mechanisation have brought in for us but there is no doubt it's a game changer. Today one needs to compete with others in sourcing, processing, manufacturing or marketing. Everybody knows that cashew is cash and we know that new origins getting into the processing like China, Russia. I personally think that the cashew industry is in the safe hands of the new generation.

HE Dr. Hean Vanhan, Director General, Ministry of Agriculture, Kingdom of Cambodia



Cambodia's Agriculture and Cashew Nut Production

The Significance of Cambodian Agriculture:

- Backbone of country's economy
- Around 42 percent lives in rural areas and rely on agriculture
- Agriculture plays most important role in:
 1. Promoting economic growth
 2. Providing 70 percent job opportunities
 3. Poverty reduction
 4. Stabilizing social livelihoods - food security

National Priority

- Food security
- Productivity

- Diversification
- Commercialization

Government's Rectangular Strategy



1. Rectangular Strategy-III on Agricultural Sector

Promotion of Agriculture Sector

1. Improved agricultural productivity, diversification and commercialization
2. Promotion of livestock farming and aquaculture
3. Land reform and clearance of mines
4. Sustainable management of natural resources

2. MAFF Policy Directions

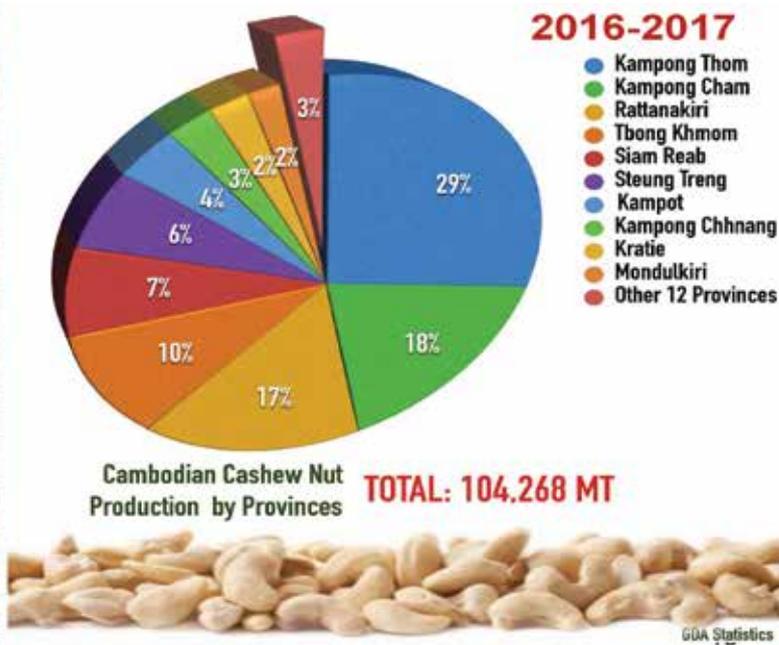
Overall Policy Goal: Enhanced agricultural productivity, diversification and commercialization thereby contributing to reduced poverty and accelerated economic growth, while at the same time ensuring environmental protection and sustainable natural resources management.

Long-Term Vision: To ensure availability of adequate and safe food for all, reduce poverty, increase GDP per capita and sustainable natural resource management and conservation.

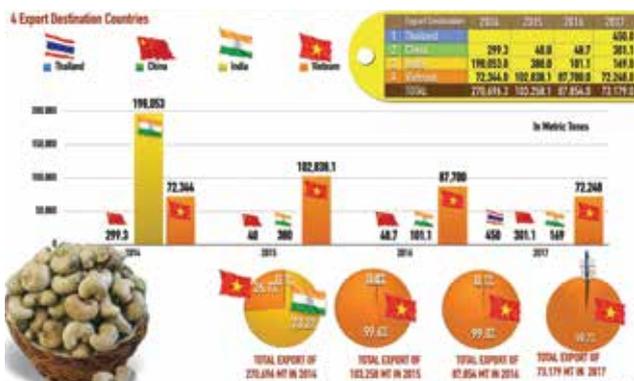
Mission: To contribute to the acceleration of Cambodian economy through provision of quality services ensuring adequate supply of safe food, and increased agricultural productivity and value-added on the basis of sustainability and efficiency.

Cambodia Cashew Nut Production

Provinces	Cultivated Area(ha)	Harvested Area(ha)	Yield (t/ha)	Production (t)
1 Kampong Thom	28,989	27,515	1.10	30,266.5
2 Kampong Cham	14,097	10,234	1.87	19,151.8
3 Rattanakiri	27,289	19,984	0.87	17,409.0
4 Tbong Khmum	7,054	7,003	1.52	10,930.2
5 Siam Reab	3,921	2,036	3.57	7,269.0
6 Steung Treng	4,583	3,865	1.50	5,797.5
7 Kampot	2,152	2,046	1.79	3,677.0
8 Kampong Chhnang	1,328	870	3.00	2,655.0
9 Kratie	2,387	2,387	1.00	2,387.0
10 Monduliri	1,059	643	3.10	1,941.0
11 Banteaymeanchhe	776	426	2.07	882.0
12 Takeo	354	354	1.00	354.0
13 Kampong Speu	334	334	1.00	334.0
14 Kohkong	946	610	0.50	301.7
15 Preah Sihanouk	460	427	0.60	256.2
16 Battambang	692	88	2.20	194.0
17 Svayreang Reang	401	283	0.66	177.0
18 Pursat	105	89	1.87	167.0
19 Prey Veng	135	135	1.00	135.0
20 Pheah Vihear	76	76	1.00	76.0
21 Udormeanchey	464	70	0.86	60.6
22 Kep	11	11	1.20	13.2
TOTAL	97,614	79,487	1.31	104,268.0



Cambodia Cashew Nut Export



- Promote extension services and inputs
- Access to finance for small holders/SMEs
- To promote agriculture contract farming

Mr Stefano Massari, Managing Director, Oltremare

Preserving Quality of Raw Cashews in Transit and Storage: Capturing Value

Challenges

1. Limited Investment in agriculture sector, including cashew field
2. Low capacity on research and development
3. Low productivity in cashew production
4. Limited capacity of cashew cooperatives/associations

Future Vision

- Strengthening collaboration and access to market among the regions and the world for cashew field
- Improve soft and hard infrastructure in research and development in cashew field
- Improve capacity of cashew cooperatives/associations

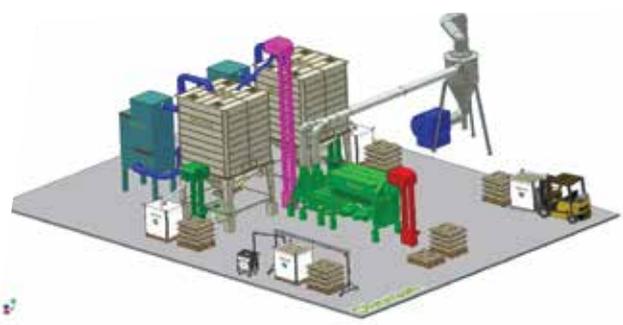


Post Harvest Treatment As It Is Now:



The Solution - The typical OLTREMARE post harvest treatment and vacuum packing unit can:

- clean RCN from heavy foreign matters (small stones, ground, sand etc), light foreign matters (leaves, ropes, strings, plastic sheets, paper)
- remove a good portion of empty nuts this increasing the KOR of the lot
- dry the RCN to a desired level in a controlled way
- vacuum pack the RCN in 1-1.5 tons big bag so to stop any further deterioration of the quality



Advantages

- No more manual labour to move RCN
- Restricted space requirement
- High volume done in a short time = shorter shipping time
- Full control of drying parameters
- Independent on climate conditions
- Infestation control
- Prevents KOR drop during transit
- Full traceability
- Possibility to ship in 40" containers once goods are ready, no wait for full cargo load
- Full protection during transport/transit from: air moisture, dust, insect, condensation

- Avoids condensation preventing materials such as moisture bags, craft paper etc.

Big Volume Packages

The new frontier in commodities packing 1.6 tons of cashews packed in traditional jute bags and with the VACQPACK - Vacuum Technology.



Vacuum packing may be helpful for both RCN traders and processors who want to hold it for a period of six to ten months without losing the quality of the produce, during transit as well as in storage.

Mrs Suchithra Balasubramanian, CEO, nanoPix, Integrated Software Solutions (P) Ltd.

Growing Technology Frontiers in Cashew Processing



Technology in Cashew Industry

Initial Step: Mechanisation

Advanced step: Automation with artificial intelligence

- Internet of things: Data collectors
- Image intelligence
- Data intelligence
- Machine intelligence



Automation with Artificial Intelligence

- Self monitoring (Internet of things)
 1. Self observation of machine health/condition
 2. Sensing machine actions
- Self identification of problems / issues
 1. Machine and its inputs
 2. Assimilates data of machine/processing
 3. Analysis for review and improvement

- Auto-Correction of observed issues
 1. Implementing solutions and learning from it
 2. Teaching peers and collective learning

IoT – Data Collectors

- Data from machines and inputs in the cloud
- Secure cloud storage for analysis

nanoPix Contribution

- nanoSorter Mayur: Online diagnostics
- Annually three billion kernel info by each nanoSorter Mayur
- <http://nanopix.cloud> for secure database

Image Intelligence

- Analysing inputs through vision technology
- Far IR, X-Ray, Spectrometer Imaging

nanoPix Contribution

- Accurate cashew grading
- RCN: Predict kernel size and quality
- Enhanced usage for Almonds, Walnut, Pistachio, Arecanut etc.

Data Intelligence

- Deep analysis of past data
- Future prediction based on analysed results

nanoPix Contribution

- Ladybird – Statistical sample analyser
 - Sample to bulk grade analysis
 - Human like analysis with no bias
- nanoSparsh – Mobile app
 - Remote monitoring and control
 - Reports on performance, productivity
- eNose – taste and flavour detector
 - Composition, taste, flavour reporting
 - Value-add recommendation

Machine Intelligence

- Machines perform tasks after thinking
- Able and informed decision making
- Act as proxy and answer questions
- Customer engagement and order management
- Self learning and peer to peer learning

nanoPix Contribution

- **Teja:** Machine learning to adjust counts/grades
- **nanoKiosk:** Letting consumers choose what they want
- **nanoloT:** Integration of boiler, de-shelling, borma, peeling, grading and packing machines

AI for Cashew

- Efficient faster processing, grading
- Intelligent cleaning >> food safety compliance
- Reduce wastage during processing
- Food composing – intelligent recipes
- Drone: farm inspection, pollination

Benefits: AI for Cashew

- Higher productivity, efficiency
- Accuracy and repeatability
- Very high ROI

AI in Food Industry Global Perspective

- WEF2018 – AI in food was a topic of discussion
- 2017 Global AI Investment \$5B (India \$170M)
- Nearly 17 percent invested in food sector (Europe)
- AI expected to increase its revenue to 39 percent by 2020

Akshya Patra: Largest Mid-Day Meal Program

- Using AI for process control/analysis
- Target capacity hike 50 percent using AI
- Accenture lab partnership
- Tech4Good initiative



Advanced Steps – AI Summary

Technology	Usage	Industry Focus
Image Processing	Grading	AI based high speed accurate grading
IOT	Connect all machines	Cloud based secure data
Data Intelligence	Analysis and forecast	Analytics for decision making
Machine Learning	Peer to peer machine learning, CRM	Automatic performance improvement, Effective customer engagement

Mr Urmil Raval, Director, Dry fruit Factory LLP

Cashew Processing in Non-Traditional Area: Opportunities and Prospects



Gujarat has developed massive infrastructure for initiating any business. It has wide networks of ports, domestic and international airports, extensive rail and road network, power supply and so on. *The state is one of the largest consumers of cashew kernels and has been emerging as a raw cashew nut processing hub.*

Despite strong infrastructure, the state has not developed a traditional cashew processing centre. Challenges are many in this sector. They are

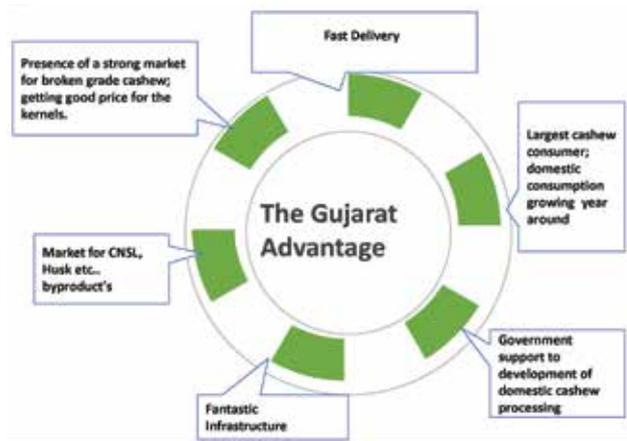
- Availability of skilled labour
- Very limited eco system for RCN processing and no clusters of cashew processors, which make it difficult to get ancillary support
- Some logistic disadvantage because of very limited

access to domestic RCN producers

To overcome these challenges, processors need to mechanize and automate the entire processing by adopting new technologies. It will reduce the requirement of skilled labour and reduce the processing cost by increasing the productivity.

Advantages

Advantages are many for Gujarat as it is situated in Western India and close to Northern India. Processing units in Gujarat will reduce the cost of delivery to end users and therefore save cost to the buyers. Additionally, local availability will deliver comfort to local buyer in resolving disputes if arise any in terms of quality or delivery. It is also the fact that local buyers cater only to domestic market and therefore western and north India buyers mainly prefer local processors.



Strength

- Our group company has an experience of more than 45 years in manufacturing highly regulated healthcare products, thus we are at an advantage to have clear understanding of quality systems, hygiene and adherence to standards
- When we think about cashew two things comes in mind. Its 'White Gold' and 'Poor Men Crop is a Rich Men Food'
- Since cashew is high value commodity, we tried to design most hygienic facility along-with stringent

quality standards to meet with best global manufacturing practices in food industry so far

- With state-of-the-art, cashew processing plant along with economy of scale, our believe will give us competitive advantage despite going for high cost of quality

Our Values and Goals



Glimpses



Mr Jayaprakash Guraja, CEO, Agribazaar and the Chief of Operations- Staragri

Think Agri Trade- Think Agribazaar

Information technology has been disrupting many businesses and transforming business into the way traditionally happening and the great efficiencies has been contributing to the businesses, the same information and technology transfers the way we buy and sell the commodities.



Agribazaar

World is Changing Fast...



Introducing agribazaar.com

Agribazaar is a simple but robust electronic platform for buying and selling of our requirements. It is supported by robust end to end delivery system on the ground and in an integrated payment mechanism.

It's simple and robust e-market place for agri commodity trading with end to end delivery and payment settlement.

<p>END-TO-END SOLUTION</p> <ul style="list-style-type: none"> ✓ Sell or Buy along with payment settlement ✓ Integrates Warehouse, Labs, Logistics and Payments ✓ Help desk support 	<p>WEB / MOBILE READY</p> <ul style="list-style-type: none"> ✓ Mobile app and web portal ✓ Simple and Clean UI ✓ Enterprise grade security 	<p>SUCCESSFULLY RUNNING</p> <ul style="list-style-type: none"> ✓ 30,000 MT+ auctions monthly ✓ 3600+ registered users ✓ Trusted by Govt. enterprises
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Agribazaar also have warehouses and logistics integrated towards to give the necessary on the ground support, the platform is available on internet, web and mobile instruments. The best part is its app is running 30,000 metric tons of agri commodities trading every month and 3600+ registered users and one of the most trusted portals by the government agencies.

Agribazaar.com serves all key participants in the agri value chain



Agribazaar serves all the key participants of agri supply chain. The farmers are benefitted by getting right price for their quality produce and get instant payment at the moment they sell their produce. The traders, processors and stockiest can get a wider participation and can interact with a larger market and get a right price for their produce and also get an assurance of payment and the quality is assured. The processors on the other hand are assured of quality for which they are paying and assured of the supply.

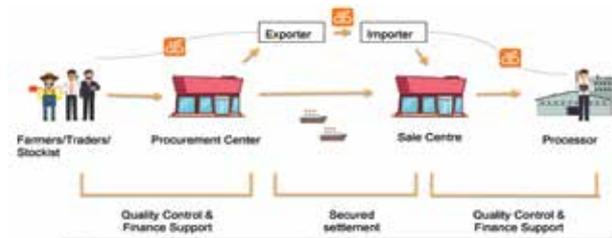
Agri Market Place Redefined



How Agribazaar Works?



Cashew at Agribazaar



Benefits of Agribazaar

Connecting to large number of participants	Transparent dispute resolution mechanism
Best realization through competitive & transparent bidding	Integrated financial solutions
Committed transactions	Integrated warehousing & logistics support
Robust delivery mechanism through independent assaying & monitoring	Real time online order tracking

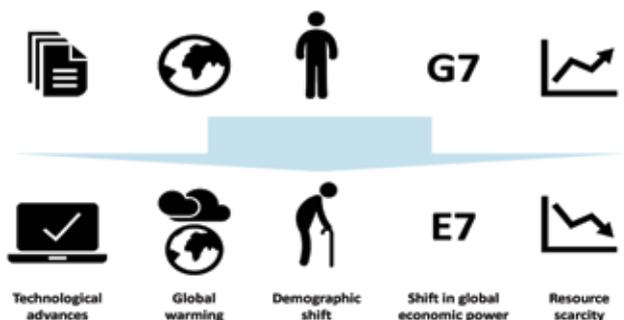
Mr Vipul Sardana, Global CEO, Maersk Line Trade Finance Venture

How Can Technology Transform Global Trade?

Maersk line is the largest containership line in the world. One in every five containers that move on the seas is Maersk line and one in every four of the reefer containers.

Major Shifts that will Determine Our Future

There are five trends which are going to define how the future is going to be: technological advances, climatic changes, shift in demographics i.e. availability of skilled labour, manpower, shift in global economic power and the availability of resources. This has the impact on current business scenario over the world.



Data is the New 'OIL'

From Maersk line, vessel alone 30 TB data is transmitted to Maersk line fleet through satellite links and other channels.



Digitisation - Building Solutions for Our Customers

As the global integrator of container logistics, we aim to connect and simplify our customers' supply chains. Maersk recently brought all our transport and logistics entities under one umbrella, so as to serve the customers in a much better and convenient way as global trade is lot more complex.

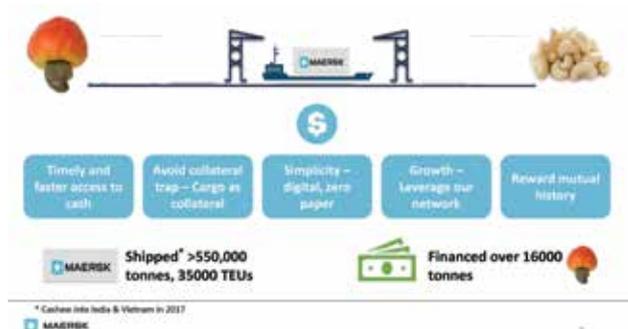
Maersk and IBM in Jan-2018 announced a joint venture to deploy a block chain-based electronic shipping system that will digitize supply chains and track international cargo in real time. Block chain will enable a single view via a virtual dashboard of all goods and shipping information for all the parties involved from manufacturers and shippers to port authorities and government agencies.

Maersk-owned global freight forwarding and logistics provider Damco has unveiled its in-house 'digital freight forwarder', Twill Logistics, a 'start-up' designed to simplify and digitalize the shipping process. The solution enables customers to book, manage and monitor shipments online at the click of a button focusing on four key features: Instant quotation, integrated document handling, milestone transparency and proactive exception management.

Maersk 2018: The Freight and Finance for Your Trade

As the global integrator of container logistics, Maersk line aim to integrate and simplify our customers' supply chains. WTO cites access to finance as second biggest obstacles to global trade. That's why we have ventured into the trade finance two years ago to help the small and medium enterprises. Over last two years have on boarded about

150 customers over six countries like India, Singapore, Netherlands, US, UAE and Spain and given away 180 million usd in credits. Specifically, for cashew this has been a big business for us especially for Singapore market. Over half a million tons of cashew has moved out from our vessels from Africa into India and Vietnam last year. From trade finance perspective, we have funded 16,000 tons of those of giving loans of USD 17 millions to our customers who are based in India, Singapore, Netherlands, US, UAE and Spain. The customers get from us is timely access to capital, completely non-collateral loan. Our solution is completely paperless and digital.



Maersk is present in 135 countries across the world, 120 years old company and there is a lot of network present where you can get local intelligence about buyers, suppliers, trade worthiness and market reputation.

Maersk 2020: An Integrator for Your End to End Trade Needs

Our aim in two years is to really make it end to end so that you have full control of not just that of physical flows but covering every aspect of your demand chain starting from time your goods are ready to be sold or brought to till the time it lands at specified destination, inland, customs house brokerage, insurance, finance, transportation and the ocean leg.

Q & A

Mr Deepak Agarwal, Agro-Crop International: Is there any moisture pre-requisite prior to the vacuum packing of those jumbo packs. What's the shelf life of the raw cashew nuts could be achieved without quality deterioration and what is the incremental cost?

Mr Stefano Massari: As a pre-requisite, the raw nuts moisture should be stabilised i.e. the moisture level should be taken it to around 8 percent but never over 10 percent. Once it is stabilised then it can be vacuum packed and similar to that of kernel where we stabilise the moisture around 5 percent or less than that. Vacuum packing is little bit better with modified atmosphere packing with the early introduction of nitrogen stabilizers so as to keep the condition of the nuts for a longer period.

The shelf life of the raw cashew nuts can be easily extended by at least 12 months and we believe that up to 18 months there should be not any problem but for sure that there will be no quality deterioration for 12 months. Inside the vacuum packages the objective is to reduce the water activity to minimum so as to escape from oxidation and modification of the fats inside the products.

The cost of mechanical cleaning and drying is likely to be within 10 usd per ton including the fresh aeration facilities of the packing for two years (based on our estimate with labour cost similar to that of West Africa). In packaging the incremental cost of the packaging material with respect to jute bag will be around 17-18 usd per ton but against that there is huge savings of collateral material and activities which are made around raw nut bags.

Instead of cashew why Indian buyers are getting empty containers or feeder with stones or bricks or other than the material documented. What kind of precaution the Maersk is taking this into consideration as every year the industry is facing huge losses on account of this?

Mr Vipul Sardana: As a shipping line, when the goods are in our possession we purely go by the declaration of the person who is shipping that and the goods are secure when it is in our possession. It's not possible for us to physically verify the goods and with the emergence of new technologies, we are tapping lots of companies which also ensure security during transit such as inland, warehouses etc., With technologies like sensor, satellites, radars etc., and also by the way of analysing past data records, we hope to control the same to barest minimum level.

Experiences of Pioneers Who Have Taken the Plunge



Discussion: Why We Invested In Cashews?

Understanding the motives behind people who have invested in cashew sector

Moderator: Mr Jim Fitzpatrick, Business Development Consultant and Mentor, Ingredient Sourcing Solutions

Panelists: Dr.Ulrich Sabel-Koschella, Head, Agricultural Value Chains for Sustainable Development, Mr Anshul Jindal, Senior Investment Officer, Agribusiness Asia Pacific, responsAbility Investments AG, Madam Toure Diabate Massogbe, CEO, SITA S.A, Mr Soo Choi, President,G-Farm Corp

Moderator Initial Comments: In the world of uncertainties and in the market volatilities quite often in a sea of negativities, why these four organisations invested in cashew sector. What makes them successful? In this session the speakers will share with us their successful stories, their experience, the form of investment and how they managed their risks effectively.

Madame Toure Diabate Massogbe, CEO SITA S.A.

Why we invested in cashew and what were the results?



SITA S.A - Created on 29th, August 1980, the first national private investor in cashew sector in Cote d'Ivoire.

- Consists of seven companies operating in the fields of agriculture, industry, finance, tourism, distribution and livestock breeding
- Investments made: 19 million usd
- Specialised in the cultivation, processing and marketing of cashew nuts and rice
- FDI certification for kernels exports to the USA representing more than 54% of world demand

Why we invested in Cashew?

- Green economy
- Reduces deforestation
- Job creation
- Fight poverty
- Women's financial empowerment
- Wealth creation
- Development

Results

- Cashew has become the third largest export product of Cote d'Ivoire
- Thousands of jobs have been created

Challenges to Overcome

- Target to process 50 percent of national production by 2020 (national target)
- Value-add each component of the cashew fruit (apple and nuts)
- To be at the cutting edge of technology in terms of production and processing equipment
- Increase processing to 30,000 tons per year by 2020

Journey - Remarks

- Long and sometimes difficult road
- Difficulties make people grow up; victories motivate
- Very nice and good experience gained in us, the desire to do even more

Way Ahead

- Have a clear vision of our objectives
- Informing and training oneself constantly
- Have determination and courage
- Believing in oneself
- Daring and taking initiatives to always progress
- Do some research
- Dare to undertake

Mr Anshul Jindal, Senior Investment Officer, responsibility Investments AG

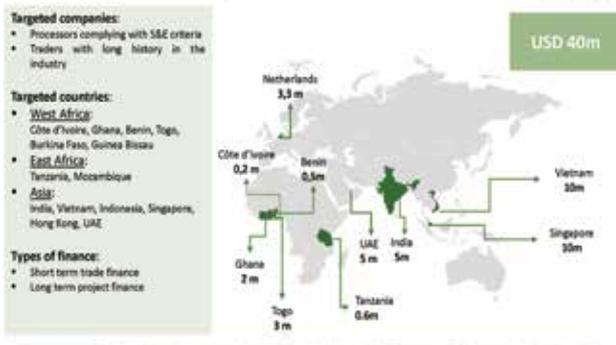
Why we invested in cashew sector?

Global Portfolio Covering the Entire Value Chain:



WHAT HAVE WE INVESTED

Global Portfolio Covering Entire Value Chain



Cashews are an important commodity in responsAbility's agricultural investment.

The type of finance needed varies from region to region. Although the Africa is a major producer it exports most of its raw cashews to Asia for processing. Long-term financing is therefore needed to build factories in Africa and to allow processing to be carried out locally - creating additional value for African producers. In Asia, investees require working capital financing to bridge the gap between the purchase of raw cashews and the pre-shipment stage.

Cashews accounted for 8 percent of the total net asset of responsAbility in 2017. Since 2013, responsAbility has provided over USD 100 m of financing to the industry often through structures not provided by traditional lenders.

responsAbility supports the development of the cashew supply chain from the production to the processing and trading of cashews. Financing cashew processing activities in Africa as well as the export of raw cashews from Africa to clients' factories in Asia and the ultimate goal is to help by financing the entire value chain across continents.

The links between Africa and Asia are strong as most of the raw cashews produced in Africa are exported to India, Vietnam and then processed.

responsAbility being a global investor is well equipped to fund the entire value chain across continents.

Increased Need for Finance

Combining it with a long-term price increase trend, it results in a multifold need for finance. Not long ago, USD two million was enough to finance 2500 tons of RCN but now it finances less than 1000 tons.

The global demand for cashews has grown by up to seven percent per year recently and continues to rise. The demand for cashews has grown faster than the demand for other nuts, even almonds. In view of their high nutritional value, cashews have become increasingly popular with consumers as they adopt healthier lifestyles and include more edible nuts in their diets.

Over the past ten years the production of cashews has grown by 27 percent and the exports by 60 percent.

Yet most lenders stay away from pre-shipment finance due the following reasons:

- Non-traded commodity - The commodity risk cannot be hedged
- Sourced from uncommon geographies
- Niche sector – Operated by many small and medium traders in developing countries

The Future of Processing Lies in Africa

The rapid growth of cashew industry offers large investment opportunities in growing companies.

As cashews are mostly produced by smallholder farmers, investments can effectively contribute to improving farmers' incomes and food security.

responsAbility targets the companies that meet strict eligibility guidelines. Investees must have a sustainable business model, create economic opportunities for low-income populations, improve access to markets, productivity and quality and contribute to creating jobs.

However, Financing these Projects Comes with Risks:

Risk	Explanation	Mitigant
Construction and Project Risk	Cost overruns / delays	Right technology partner; reasonable equity contribution
Operations Risk	<ul style="list-style-type: none"> Lack of infrastructure / Labour availability Market for by products Shells 	Experienced entrepreneur; financial strength of existing operations.
Procurement Risk	<ul style="list-style-type: none"> Competition from Asian and local traders Working capital required during the single harvest season 	Strong network on the ground; experience in procurement of RCN and financial strength for working capital
Sales Risk	<ul style="list-style-type: none"> Export market of kernels; Quality risk; No local market for broken etc. 	Strong relations with kernel buyers; price risk handling experience;

A Financier’s Wish List

- Cashew being traded on exchange in future
 - Will ensure better regulations and more traditional financiers will be attracted
 - Will provide a transparent price platform and may also provide some stability
- Easier regional trade with in Africa especially for local processing
- Improvement in quality control across the chain
 - Necessary to instill trust in contracts in order to finance the contracts
 - Consolidation in the Industry might be a way to bring this change
- More value addition in Asia—especially for Asian demand
- Will create more long-term financing needs in Asia

Dr. Ulrich Sabel-Koschella, Head, Agricultural Value Chains for Sustainable Development

Development Investments in the Cashew Sector



This is a presentation from the development co-operation and donor perspective.

We’re NOT making money with cashew

We’re inclined to use our funds to focus on catalysing development in a socially, environmentally and in a economically sustainable way.

We want our partners and our target groups, farmers, labourers, businesses, governments to make money.

At GIZ, ComCashew is part of a larger umbrella program. A4SD regroups four value chain projects working in 15 African countries.

A 5th program on groundnut is under preparation

Benin, Burkina Faso, Cameroon, Côte d’Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Sierra Leone, Tanzania, Togo, Uganda, Zambia and Zimbabwe

- Competitive African Cotton Initiative (COMPACI): Cotton
 - Sustainable Smallholder Agribusiness / Cocoa-Food Link Program (SSAB): Cocoa and Food Crops
 - Competitive Cashew Initiative (ComCashew): Cashew
 - Competitive African rice Initiative (CARI): Rice
- ComCashew is currently working with six African countries

covering the largest share of African cashew production.

An important principle of our approach is to work with partners along with the entire value chain not only on certain levels. Activities focus on where we see constraints that can be alleviated by supporting from our side. This will improve the efficiency of the entire value chain from producing farmers down to consumers.

Therefore we're collaborating with an extensive network of more than a hundred public and private partners in cashew either dealing in cashew or providing services to the cashew sector as well as governments responsible for an enabling cashew business environment.

Since 2009, public development donors and philanthropic foundations mainly Federal German Ministry for Economic Cooperation and Development and Bill & Melinda Gates Foundation have invested 41 Million €.

Other partners e.g. from the private sector and from cashew producing countries institutions have invested substantially more: 64 million €

For the private sector motives are clear: Cashew is good business.

For the development donors let me explain further objectives ...

Cashew creates perspectives for people. People need jobs and People need income.

Intensifying production means more labour input. That's a resource poor farmer can afford more easily than capital.

Intensifying production also means money – means return to labour. When we calculate that at official minimum wage levels and additional labour time needed we arrive at approximately 332,000 additional jobs created on-farm in production, most of them are women and 60 percent under the age of 35.

Increased local processing by our private partners has created another 92,000 jobs by far most of them for women and 80 percent under the age of 35.

Increased local trade again accounts for another 21,000 jobs and these are almost exclusively for men.

Why? Because this includes a lot of loading and off-loading 60 kg bags to and from trucks – we heard that yesterday - this is the standard that can still be handled manually by physically strong men.

So in total along the value chain additional 445,000 jobs have been created.

Our Social Rol

1. Production: Figures from ComCashew for male-female, youth only ComCashew, informal, formally non-skilled, seasonal, includes family and paid labour
2. Processing: Figures from ComCashew, formal, (mostly) formally non-skilled, partly seasonal
3. Trade: Figures from ComCashew, informal, formally non-skilled, seasonal

Cost of packaging and loading: 2,500 fcfa per ton

Cost of transport to the port: 20,000 fcfa per ton

Cost of offloading and port handling aspects: 3125 fcfa per ton

Total Labour Cost: 25,625 fcfa per ton

As the full-time agric job pays at 2.36USD/MD so we have 21.71 MD as total labour per ton (1USD= 500 fcfa)

Rol in Monetary Terms

Cashew pays for farmers: 23 million € additional net income annually

Cashew pays for processors and labourers: 20 million € additional net income annually

Cashew pays for governments: > 40 million € additional taxes annually

For a long time, governments of producing countries were focusing their policies exclusively on traditional export commodities like cotton, cocoa, and coffee - grossly overlooking the growing cashew business. This is obviously

changing as we can literally see by the African presence in this conference.

Figures reflect ComCashew intervention areas and are linked to ComCashew activities. Figure on tax revenue corresponds to Cote d'Ivoire, Benin and Mozambique.

Being economically sound for farmers cashew calls for education and training.

More than 420,000 farmers have participated in Good Agricultural Practice (GAP) training. Female participation rate is just at 22 percent, despite the fact that most of the on-farm labour in cashew is provided by women. However this is still a good achievement compared to other crops. We aim at improving it.

In order to be able to reach that significant number of 420,000 trained farmers we had to establish a regional Master Training Program (MTP) for cashew sector experts integrating not only the six countries we are directly working in but offering training also to others interested. So far 15 countries have benefitted from that.

248 master trainers have completed the training and are in turn training others in their respective countries.

Improving Value Chain Connections

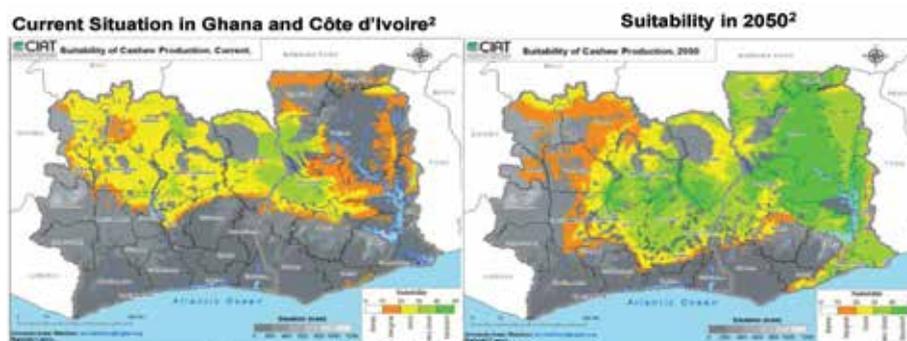
Our general approach to value chain development duly brings many actors together.

We work with regional multi actor partnerships and have institutionalised Private-Public Partnerships through a matching grant scheme that co-finances sub-projects along the value chain.

In cashew ,we have so far commissioned 32 matching grant sub-projects with a value of 11 million €.

This significantly improves co-operation among different value chain actors.

Climate change is threatening many agricultural long-term investments. For a tree crop like cashew this is crucial. That's why our partner Bill & Melinda Gates Foundation



commissioned a scientific study to CIAT in 2010. This study looked at the suitability of project areas for specific crops including cashew here in Ghana and Cote d'Ivoire. Projections into the year 2050 revealed significant changes.

The Green areas show the best suitability for cashew, left in the year 2010 – right in the year 2050.

The encouraging message for the cashew sector and the potential areas for cashew production increase significantly both in Ghana and in Cote d'Ivoire. This makes cashew a sound investment for long term development.

CIAT (International Center for Tropical Agriculture) has projected the desertification spread due to the climate change. It is obvious that climate change is expected to increase cashew's importance as a source of income and risk mitigation on food crops.

Development investors globally under the roof of the United Nations agreed on an agenda 2030 and a set of sustainable development goals.

All countries committed to monitor progress.

ComCashew will particularly contribute to achieving these 9 SDG's.

But most of all: Reducing poverty by Public-Private Partnerships for sustainable development

Mr Soo Choi, President, G-Farm Corp

Cashew Nuts Investments



I am basically involved in selling of cashew kernels after processing it in Laos. We shipped our first container of cashew kernel to a Korean customer in Jan-2018. We will soon diversify our customers to Japan and potentially to other countries such as US, EU and China. We buy RCN from Vietnam, Cambodia, Indonesia and India and also from the African countries.

1. Attractiveness of Cashew-Nut Business

- Very healthy nuts for man and woman
- Strong demand over supply in far future
- Geographically well distributed market
- Platform channel for various agricultural businesses
- Totally different from electronic business

2. How to Diversify Current Businesses

- Current products: Optical film for TV application
- High technology and high competition
- Continuous innovation to catch price downside
- The business life cycle is short to change rapidly
- Find another business with difference business cycle

3. Good Chance to Start New Business

- Korean Government: Encourage the overseas farming
- Lao Government: Good cooperation with Korea government in agriculture area
 - - “Saemaul Movement” (installing new village)
- Lao Government: Install good incentive system for foreign investment

- G-Farm: Three years’ intensive feasibility studying of cashew-nut. Investment under PPCP agreement

4. Cashew Nut Processing Plant in Laos

- Company Name: G-Farm Lao
- Location: Khong District, Chammpasak Province, Laos, PDR
- Cashew-nut Processing Capacity: 5,000 - 20,000 ton / year

5. What Value to Pursue

- Good quality and good service for the customers with high quality
- Enhancing productivity of farming cashew nut
- Some portion of farming cashew nut for the organic cashew to high end global customers
- Contribution to the wealth and the good culture of local farmers
- Global sourcing of RCN links in cashew nut business

Mr Jim: What made you to choose cashew business?

Mr Ulrich Sabel-Koschella: It is important that investors in the cashew sector should have a comprehensive view about the other players involved in the sector as well as the functioning of the entire cashew value chain. If you know the system properly, it could help you to improve the livelihood of other peoples involved in the sector.

Mr Jim: How do you mitigate the financial risk?

Mr Anshul Jindal: Price risk is the important one which is most difficult to manage. How to mitigate that is to work with persons who had managed previously and people involved need to have a long-term view. Then they will be in position to mitigate their risks more effectively.

Crystal Gazing of Cashew Kernel Market



Discussion: Cashew Kernel Market Review and Outlook

Understand the kernel market drivers in key consumption market - China, Japan, US, Europe, Hong Kong and India – and bring a forecast

Moderator -Mr Walter D’Souza, Chairman, Fernandes Brothers

Panelists: **Mr Deepta Gupta**, Executive VP, Bikanervala Foods Pvt. Ltd., **Mr George Ishiguro**, Managing Director, Blaxton Corporation, **Ms CHEN Ying**, Director, Oils and Cereals Department, CFNA, **Mr Jan Vincent Rieckmann**, Director, Dried Fruits & Nuts Division, August Topfer & Co, **Mr Marc Rosenblatt**, Partner , The Richard Franco Agency, Inc., **Mr Cheng Hung Kay**, Managing Director ,CHK Trading Co., Ltd.,

Initial Comments by Moderator: The cashew market has seen roller coaster ride year on year. More than 80 percent of the global cashew consuming nations are present in this panel and let's hear from them.

Mr Marc Rosenblatt, Partner, The Richard Franco Agency, Inc

The USA Cashew Market



Increase in Import Volumes?

Multiple reports state that USA imports has increased from 2016 to 2017 despite increase in price.

- However, most roasters are having their view that consumption is down
- Retail prices slow to reflect FOB prices
 1. Lag time
 2. Resistance at retail
 3. Q4 2016 - false indicator of softness
- High inventory levels in 2016
- 2016 shipment delays
- New products

Lag Time – Retail Price Delay



New Products

- Unsalted, Organic, Raw, Trail mixes, Bars and Cashew Milk

FSMA / FSVP

- It's the law!
- Written Food Safety Procedures
 1. HACCP Plan
 2. 3rd Party Audit
 3. Foreign material procedure, site safety, allergen controls, etc.
- Must have a Preventive Controls Qualified Individual (PCQI)
- Customers expectations increasing
- Growing desire for GFSI (BRC / FSSC22000)
- Expect requests you've never heard before

The industry is doing well, but will need to continue to improve to meet growing expectations.

Mr Jan Vincent Rieckmann, Director Nut Division, August Töpfer & Co. (GmbH & Co.) KG

The European Cashew Market

Market Segmentation

- Traditional snacking
 1. Roasted salted cashews
 2. Ethnic cuisine



- Raw consumption / snacking
 1. Plain retail packs
 2. Part of nut & fruit mixtures
- Food ingredients
 1. Confectionary industry - e.g. chocolate bars, coated nuts, etc.
 2. Cereal industry - e.g. cereal bars, muesli mixtures, etc.
 3. Bakery industry - e.g. cookies, cakes, etc.

Market Trends

- Healthy food / snacking
 1. Less fat, salt and sugar
 2. Fewer additives (sulphur, food colourings, etc.)
 3. Untreated products
- Rising consumer expectations
 1. Greater quality awareness and expectation
 2. Consumers willing to spend more money for quality foods
 3. Overall stronger European economy
- New product development
 1. Consumers seeking new products
 2. Industry willing to invest

Market Challenges

- High price of cashews

- Setback in new product developments
- Prices only slowed down growth, so far ...
- Actually today's prices (in €) for W320 are lower due to €/ \$ rate
 1. Jan 2017:4.50 \$/lb FOB = 9.45 €/kg FOB
 2. Jan 2018:4.70 \$/lb FOB = 8.50 €/kg FOB
- 2018 retail prices of cashews are still based on 2017 pricing
- Cashews are in competition with nuts which are currently trading at lower levels, e.g. almonds, hazelnuts, walnuts
- Price is a problem but not the biggest problem
- Quality problems
- Industry is faced with substantial problems
 1. On wholes: High moisture, high serious defects, bad texture
 2. On splits/pieces: High foreign material, high FFA, bad smell and taste
- Problems have different impacts in different market segment
- Majority of raw kernels goes directly into consumption without further processing, cleaning, etc.
- Cashews as a food ingredient is in competition with highly sophisticated food ingredients such as manufactured almond or hazelnut products at very consistent quality levels

Market Summary and Outlook

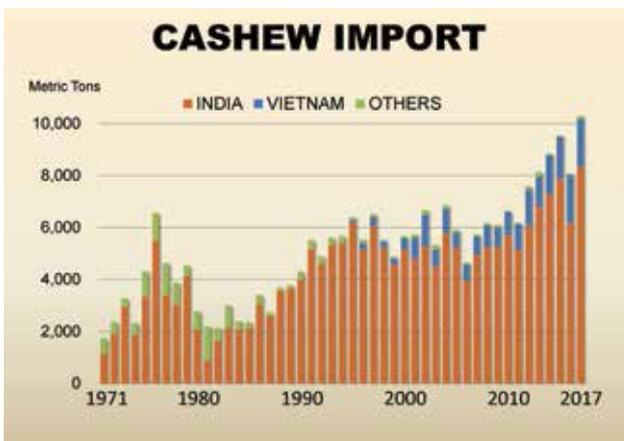
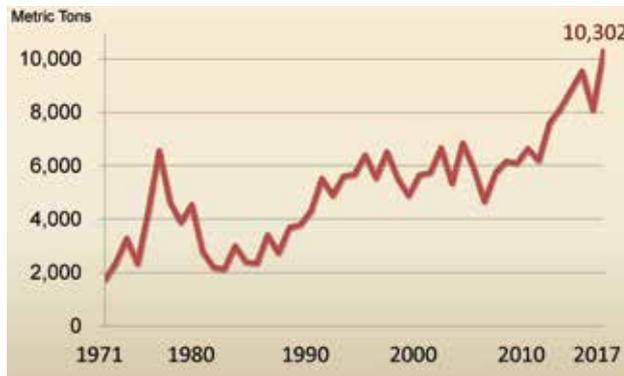
- The consumer perception of cashews as a natural and healthy product is very good and the consumption can grow strongly
- The biggest growth potential for cashews is in raw cashews and as food ingredient, therefore quality is the key for growth
- Consumers are very willing to pay a fair and decent price for cashews but only if the quality is also fair and decent

Mr George Ishiguro, Managing Director, Blaxton Corporation

Japanese Cashew Market - What consumers are looking for?



Cashew Imports to Japan



For the past 20 years more than 90% of the cashews are coming only from India and Vietnam. It is mainly due to three factors –quality, responsibility and sustainability of

stable supplies. Many of the kernels come from packers with these three factors. Many of the buyers, packers have had long lasting business relations and they know each other very well. But our door is open to packers from other countries having these three factors mentioned above, but Japanese were very clear that there is no room for packers once they default.

Major Distributing Channels

RETAILERS	<ul style="list-style-type: none"> • Supermarket & Discount Store • Convenience Stores • Liquor Shops • Premium Nut Boutiques
RESTAURANTS	<ul style="list-style-type: none"> • Indian & Chinese Restaurants • Premium Mediteranian Restaurants
SWEET SHOPS	<ul style="list-style-type: none"> • Confectioneries • Chocolatiers – Bean to Bar • Icecream, etc.

With regards to cashews, snack retailers are the largest channel. Among retailers - nut boutiques, premium quality nuts started to increase since 2011. Their sales are based on face to face, person to person relations. They paid more attention to clients demand and they also prepared to explain about their products nutrition. Organic raw foods, raw sweets are becoming popular. About 70 percent of the products are dry roasted with no salt. It is very difficult to find deep fried or salted nuts in Japanese markets.

Market Bi-Polarisation

	SUPPLIER SIDE	CONSUMER SIDE
HIGH END MARKET	<ul style="list-style-type: none"> Nut Boutiques Premium Restaurant Confectioneries 	<ul style="list-style-type: none"> Celebrities Health-Conscious Women with High Disposable Income
PRICE CONSCIOUS LOW PRICE MARKET	<ul style="list-style-type: none"> Supermarkets + Discount Stores Inexpensive Restaurants 	<ul style="list-style-type: none"> Youth Medium to Low Income

Difference in Retailers

	AIM & TARGET	CLERK CHARACTER
SUPERMARKET DISCOUNT STORE	Block Sale High Market Share	Less Expertise No Specialist
CONVENIENCE STORE LIQUOR SHOP	Mass Sale A Bit Classy	No Specialist Some All-Arounder
PREMIUM NUT BOUTIQUE	Recognition from Celebrities	Professional Knowledge Friendly Attitude

Price of Three Major Nuts



Sales of all kinds of nuts have increased in the last seven years. Since 2015 cashew price started to move higher but walnut and almond prices have declined. So nut processors and roasters somehow managed to keep the price at same level. Subsequently both walnut and almond moved higher since 2017.

Now cashews are the highest and other two nuts had also moved higher considerably. Under the current circumstances our roasters are trying to raise cashew prices. Some of them are likely to adopt wait and watch mode until March-2018, before hiking the same. Others may reduce the off-take of cashew and may plan to increase other cheaper alternatives such as almond and walnut.

Mr Cheng Hung Kay, Managing Director, CHK Trading Co., Ltd

Hong Kong Cashew Market



Hong Kong has the advantage of being one of world's largest free trade zones. For cashew there is no import duty and no VAT on sales. The market is open to all origins and any specific agent or brand and so on. However, the cashew market is not so big in Hong Kong.

History

It has been a roller-coaster for Hong Kong getting involved with supplies. It was a traditional market of Indian cashew kernel initially but changed to China in 1970 and continued till 1990. But China closed processing the kernel in 1990 and then Hong Kong buyers turned to Vietnam. Now, Hong Kong basically source cashew from Vietnam and India.

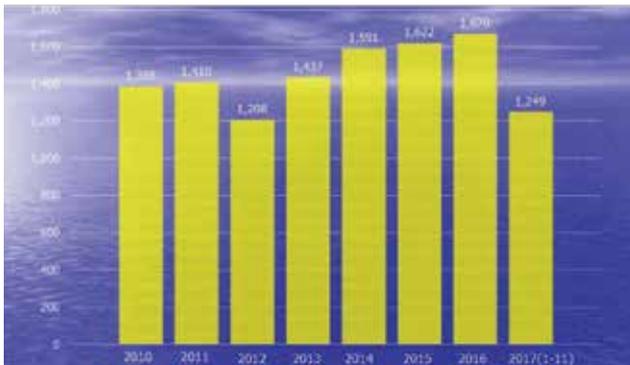
Cashew is used mainly in Chinese cooking, snack and retail for housewife. Major variety is W240 having share of 80 percent. Additionally W320 is other variety that is sold in the market. Strict quality control is maintained by health authorities of the government so no discoloring, no infestation and no insect damage.

About 50 percent of cashew is used in food for home cooking, 30 percent in chat-shui and chicken, beef or pork, 10 percent in ice cream, bakery and confectionery industries.

Like any other tree nuts, 100 percent of cashew import is used for local consumption.

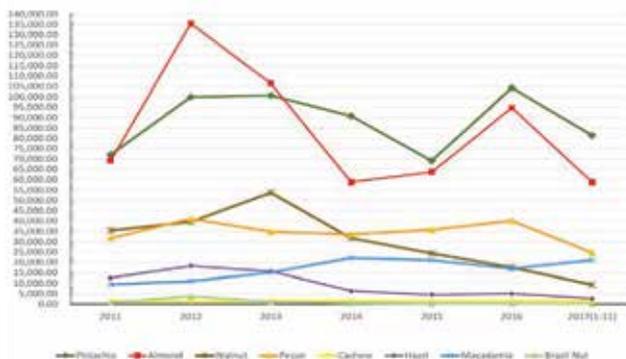
Import of Cashews Kernel to Hong Kong From 2010 till 2017 (1-11)

(Unit: Metric ton)



Comparison of Import of Tree Nuts into Hong Kong from 2011 till 2017(1-11)

Unit: Metric tons



Ms. CHEN Ying, Director, Oils and Cereals Department, CFNA

Trends Shaping China Cashew Kernel Markets and Outlook



Policies on China Cashew Import

- No restrictions on China cashew import. Importer needs to pay tariff and VAT according to the law and qualities of the products are up to the national standards

Introduction on China Cashew Tariff Policy

- From November 24th, 2017, Chinese state council tariff commission announced the notice on adjusting the import tariffs of part of consuming goods. It announced that from December 1st of 2017 reduce the import tariffs on some consumer goods by a tentative tax rate.
- The purposes of these adjustments: with the social and economy development, improvement of science and technology and the structural revolution of population in China, the domestic consumption demand are greatly upgraded. Thanks to lower tariff and the domestic consumer's choices will be more diversified and finally lead to the transformational upgrade on supply and demand system. In order to further meet of the consumers demand China will increase the import of some products.

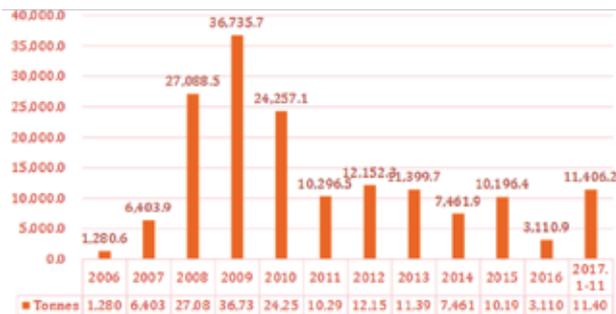
Import duty for HS 08013100 (cashew in shell – RCN)

was slashed from 20 percent to 7 percent and for HS 08013200 (cashew kernel) was slashed from 10 to 7 percent, effective December-2017. These measures may increase the import of cashews in to Chinese markets.

Introduction on China Cashew Import

- In the first 11 months of 2017, China’s imports of cashew reached 11,406 tons increase by 336.23 percent compared from the previous year
- China’s import of cashew has risen sharply since 2006, and this trend lasted for only four years. After the peak of 2009. The import has slowed down thereafter and is hovering at around 7,000 to 12,000 tons per year

Trend on Chinese Cashew Import in last 10 years



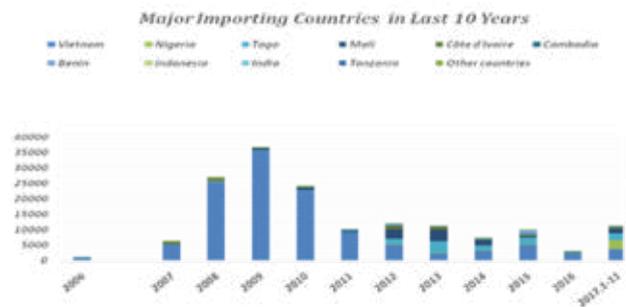
- In the first 11 months of 2017, China’s imports value of cashew reached 50.6 million dollars, increase by 225.46 percent compared from the previous year. But it only half of the total value of 2009, indicating there’s a huge potential of Chinese market.

Trend on Chinese Cashew Value of Import in last 10 years



Major Importing Countries

- In 2006, China’s imports of cashew from Vietnam accounted for about 70 percent of the total imports, during which Vietnam has been China’s largest supplier of cashew
- Vietnam’s market share in China’s cashew imports dropped to about 30-40 percent from 2012 till now, while an increasing share has been captured by Nigeria, Togo and Mali



Trend on Cashew Import Price

- The Unit price steadily grew during last decade from the range of USD 3200 and USD 4500 per ton
- The lowest price was in the year of 2013, USD 1870 per ton, the highest year was in the year of 2016, USD 6524 per ton

Capt. R Rajesh, A. S. Shipping

Overall it’s very good experience. Lot of things to learn, have met lot of buyers. The timing of the conference is very good just ahead of West African season and after the end of East Africa season. WCC is definitely getting bigger every passing year.



China Cashew Consumption

Country	ESTIMATED WORLD CASHEW CONSUMPTION (Kernal Basis)														
	2011			2012			2013			2014			2015		
	Cons. (MT)	Cons. per capita (kg/year) ¹	Est. Cons. per capita (kg/year) ²	Cons. (MT)	Cons. per capita (kg/year) ¹	Est. Cons. per capita (kg/year) ²	Cons. (MT)	Cons. per capita (kg/year) ¹	Est. Cons. per capita (kg/year) ²	Cons. (MT)	Cons. per capita (kg/year) ¹	Est. Cons. per capita (kg/year) ²	Cons. (MT)	Cons. per capita (kg/year) ¹	Est. Cons. per capita (kg/year) ²
India	285,731	0.24	0.48	289,677	0.25	0.50	230,278	0.18	0.36	224,384	0.18	0.36	257,190	0.20	0.41
USA	112,739	0.36	1.11	109,448	0.35	1.07	130,477	0.42	1.28	128,342	0.40	1.22	141,119	0.44	1.33
China	41,136	0.03	0.09	51,043	0.04	0.12	51,350	0.04	0.12	52,159	0.04	0.12	49,925	0.04	0.11
Germany	19,737	0.24	0.97	26,177	0.32	1.28	25,581	0.31	1.25	23,016	0.28	1.13	23,810	0.30	1.18
Netherlands	20,161	1.21	1.52	12,366	0.74	0.93	23,005	1.39	1.73	20,796	1.24	1.55	23,536	1.39	1.74
UK	9,778	0.16	0.48	12,381	0.20	0.60	9,636	0.15	0.47	16,052	0.25	0.78	19,854	0.31	0.93
Australia	13,988	0.63	1.25	15,491	0.69	1.39	15,783	0.71	1.41	16,572	0.71	1.43	15,893	0.68	1.33
Canada	9,392	0.28	0.55	11,806	0.35	0.69	11,958	0.35	0.70	12,156	0.34	0.69	11,812	0.33	0.66
Japan	8,018	0.06	0.11	7,580	0.06	0.11	8,146	0.06	0.12	11,523	0.09	0.17	11,235	0.09	0.16
France	9,482	0.15	0.60	8,416	0.13	0.53	8,688	0.14	0.55	10,027	0.15	0.61	10,418	0.16	0.65
Saudi Arabia	4,447	0.16	0.49	6,203	0.23	0.68	5,310	0.19	0.58	7,977	0.27	0.82	8,541	0.27	0.82
Thailand	4,512	0.07	0.13	5,920	0.09	0.13	6,010	0.09	0.13	8,164	0.12	0.18	8,290	0.12	0.18
Italy	4,680	0.08	0.52	5,410	0.09	0.60	4,744	0.08	0.52	7,000	0.12	0.78	6,745	0.11	0.75
Spain	4,492	0.10	0.39	4,383	0.10	0.38	4,935	0.11	0.43	4,511	0.10	0.38	5,303	0.11	0.46
Israel	2,579	0.34	0.68	4,041	0.53	1.06	2,840	0.37	0.75	4,490	0.56	1.12	4,349	0.54	1.08
Russian Fed.	8,519	0.06	0.24	10,094	0.07	0.28	10,060	0.07	0.28	12,161	0.09	0.34	3,604	0.03	0.10
New Zealand	1,974	0.45	0.90	2,389	0.55	1.09	2,651	0.61	1.21	2,684	0.63	1.27	3,006	0.66	1.33
Malaysia	2,063	0.07	0.15	2,120	0.08	0.15	1,323	0.05	0.09	2,013	0.07	0.13	2,297	0.08	0.15
Turkey	1,164	0.02	0.05	2,786	0.04	0.12	3,895	0.05	0.16	2,860	0.04	0.11	2,294	0.03	0.09
Sweden	1,530	0.16	0.65	1,301	0.14	0.55	2,213	0.24	0.94	2,090	0.22	0.87	2,080	0.21	0.85
World Total	576,431	0.08		636,034	0.09		601,542	0.09		716,652	0.10		724,665	0.10	

¹ Total consumption expressed in Kg per person. Based on UN Population Division (2015).

² Based on the estimated percentage of population consuming the specific product.

Source: INC

- Consumption growing at 14.32 percent annually and averages 52,000 tons since 2014
- Chinese prefer roasted, flavoured cashew, more accurately oil-blanching then added to main dishes. Cold weather makes it suitable for people to eat nuts in winter season. Major sales during lunar New Year, Mid Autumn festival
- E-Commerce has become an important way of selling and buying and nuts consumption

China International Treenut Conference 2018

- China International Treenut Conference 2018 will be held in Zhuhai, China on 1st to 3rd August this year. Awaiting your participation!

Mr Deepta Gupta, Executive Vice President, Bikanervala Foods Private Limited

Cashew Nuts in Indian Ethnic Industry



The company was founded in Bikaner, Rajasthan and is 100 years old. The first retail shop was set up in 1954 in the city of Delhi as retail sweets (traditional Indian sweets) and Namkeen (salted traditional Indian snack) shop. Bikanervala has diversified presence through following popular brands:

- Bikanervala – Retailing of sweets and Indian ethnic cuisine
- Bikano – Retailing of packaged snacks

Global Presence: The brand holds its presence across 70 countries with the customer base of 100 million.

If we club Bikanervala and Bikano consumers and we are the 13th most populated nation in the world.

Industry Overview

Indian food industry is currently pegged over USD 1.3 billion and reaping a growth of 20 percent per annum. It may double itself by the year 2020.

In this diversity of Indian food, the usage of cashew nut is broadly divided into five major segments:

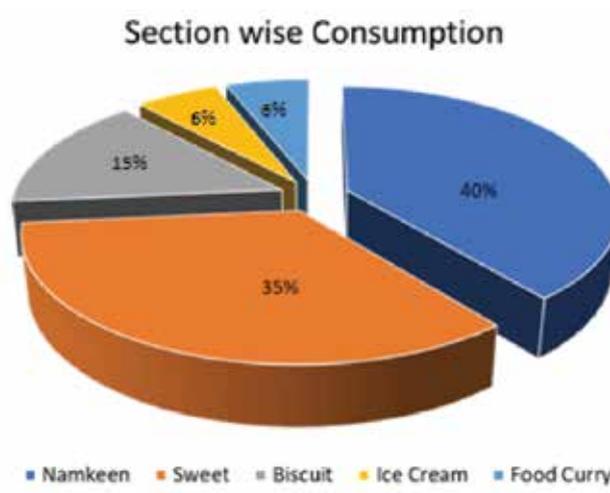
- Namkeen
- Sweets
- Snacks
- Food Curry
- Gift Packs

Cashew Nut Consumption

The entire cashew nut consumption of 2.5 lakh tons is divided in two parts:

1. As an Ingredient -60 percent ~150,000 tons
2. As a Nut-40 percent ~100,000 tons

Further diversification in usage of cashew as an ingredient:



Section	Percentage
Namkeen	40%
Sweet	35%
Biscuit	15%
Ice Cream	6%
Food Curry	6%

Usage of Cashew Nut in Ethnic Industry

Hence we see that only 20 percent of cashews are used as whole nuts while majority of it i.e. 80 percent is used in broken form.

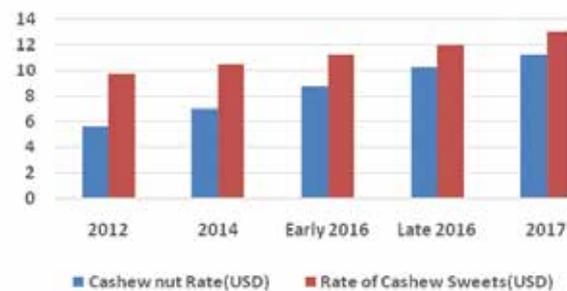
Section	Product Profile
Namkeen	Splits and Whole
Sweets	Broken (4pcs,6pcs,8pcs)
Food Curry	Broken (4 Pc& 8 pc)
Gifting	Whole Nuts
Snacking	Whole Nuts

Challenges

Price Inflation

The price inflation in cashew nut has increased over the last few years which have encouraged the industry to switch to almonds as a variant to cashew nut.

E.g. Use of other nuts in Namkeen has grown as a trend and traditional cashew sweets are now being replaced by dairy based sweets.



Ethnic Cashew Market

Namkeen, Sweets and Food Curry capture 80 percent of ingredient section ie. 120,000 tons and another 10 percent of whole nuts are also consumed in this segment. So the above segment consumes about 52 percent of total kernel consumption of 250,000 tons.

Problems Faced by Industry

Process Automation

In the recent past a lot of automation process was introduced in the industry to increase the productivity but with the introduction of this process it had also led to some challenges.



Type	Process	Products	Problems	Sensory Impact
4 Pcs & Broken	Sweets Biscuits Gravy	Kaju Katli and value added products	High FFA Husk , Infestation/ Live /Dead Weevils/ Stale Products	• Bitterness due to husk • Off colour of the sweets
Splits	Sweets Namkeen	Garnishing of sweets Mixing in Namkeen	Fungus Broken Black spot Husk	• Fumigation Odour in products
320, 240, 210	Snacks Gifting Namkeen	Roasting Frying Namkeen Mixing Used in Gift Distribution	Broken Colour Off flavour Shrinkage on Kernels	• Oil marks on cashew surface which causes bitterness in taste • Colour Variation during frying

Year	Cashew nut Rate(USD/KG)	Cashew nut Rate (INR/KG)	Rate of Cashew Sweets(USD/KG)	Rate of Cashew Sweets(INR/KG)	% Margin
2012	5.3 - 5.6	340 - 360	9.50-10.25	620-650	43
2014	5.7 - 7	365 - 450	10.25-11.00	680-700	33
Early 2016	8 - 8.75	515 - 560	11.00-11.75	720-750	24
Late 2016	10 - 10.3	640 - 660	11.75-12.50	760-800	14
2017	11 - 11.25	720 - 760	12.50-13.25	820-850	11

Vacuum Packaging

This is not a good substitute of metal tin packaging which is currently used by us.

Comparison between existing & proposed	Material	Thickness	W.V.T.R.(gm/m ² /24 hr. 38 C ^o @ 90% R.H.	O.T.R.(CC/m ² /day 23 °C @ 0% R.H.	Retention Time Of Vacuum
Existing Configuration	LD/LLD/Tie Layer/PA/Tie Layer/LD/LLD	140 μ - 160μ	.8	.20-30	2-3 Months
Proposed Configuration	BOPP/EVOH PE N	140 μ - 180μ	<1	<2	More than 6 Months

Now we can adopt for various systems of Modified Atmosphere Packaging (MAP) Technology.



The Future Workforce

“GST Mantra - One Nation One Tax”

- No barrier for North and South
- Real time interfacing with value adding products manufacturer for the cashew industry
- Optimisation of supply chain management between industry and products manufacturer
- No involvement of the middle man

As a result, Industry can offer better price to the market.

Final Thoughts

“Cashew Nut New Era”

No other nut can replace cashew as the main ingredient in the Indian food and sweets.

Our industry is ready to support the cashew nut Industry whole heartedly so that both the industries can flourish and prosper together.

Moderator Final Comments: Rising prices for cashews can be a barrier. It is certainly a cause of concern and to a cer-

tain extent there be could migration to other peer nuts. The shift from flavored nuts to raw cashew as a healthy tree nut is certainly welcome. The success story of India has been its diversification. Promotion primarily in the food ingredient industry, which is huge, without that Indian processor wouldn't have risen to the levels that we are operating right now. Will the price of kernel sustain at USD 5 per lb (W320)? If that is going to be a barrier when compared with other tree nuts, then cashew has a threat. This has to be addressed by working with all the stakeholders in tandem, without affecting the interest of farmers. Ultimately, the most important thing is to promote is the consumption of cashews because cashews are the least promoted nuts among the other tree nuts.

Mr Marc: The US markets are facing some headwinds, some challenges with respect to cashew consumption because of higher price. There could be some upward price pressure on cashews to reflect the higher prices in the FOB market or the margins of retailers are likely to come down.



Useful links:

Presentations:

<http://cashewconvention.com/programme.html>

Speakers:

<http://www.cashewconvention.com/speakers.html>

Exhibitors:

<http://www.cashewconvention.com/exhibition.html>

Delegate List:

<http://cashewconvention.com/listofdelegates.html>

Photos Links:

Day 1

<https://photos.app.goo.gl/rzqaFPldTUbC7qqZ2>

Day 2

<https://photos.app.goo.gl/diT6HexB4iaPrdRr1>

Day 3

<https://photos.app.goo.gl/mtVhjP9akv5HzGio2>

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Innovation to Increase Total Realisation from Cashews



Discussion: Enhancing Value in Cashew Processing Through Innovation

Moderator: Mr Shakti Pal, Global Cashew Sector Lead, TechnoServe

Panelists: Mr James Obarowski, Program Director, BeninCaju, TechnoServe, Mr David Barbera, Business Development Director, Napasol AG, Mr Stefano Massari, Managing Director, Oltremare, Mr K S Jayaram, CMD, TMPL Machines

Initial Comments by Moderator

In this session we will discuss about innovation and technologies along with two very important tasks. One is dealing with microbiological contamination on the nuts and the second is exploring options to get additional revenues by using the cake and shells to generate electricity.

Yesterday Mr Jan Vincent has mentioned that the price is a problem, but it's not the biggest one. The biggest problem is "food safety". Consumers choose more nuts to eat. They are very much aware of threat of microbiological contamination. Therefore, they want an assurance that what they eat is safe. Some of the rare outbreaks have been seen during the 1990s and 2000 in cashew sector. The very first outbreak was noticed in Canada in 2000-2001 on almonds. That's when people realized that there could be a problem although the industry was not able to address them properly. At last in 2007, USDA brought some regulations making pasteurization of nuts obligatory. In the beginning, there were a lot of concerns about it and the industry opposed the ruling. Today, they are so proud that there is no more recall of almonds as there is no outbreaks and contamination. California almonds are free from microbiological contamination, where every almond kernel is pasteurized.

Other tree nuts industry players' viz., pistachios and hazelnuts, walnuts took this example and they also started pasteurization and addressed the problem very well. However, in cashew, the technique is new and the industry has started to address it clearly from the last year or so.

Mr David Barbera, Business Development Director, Napsol

The Natural Pasteurization Process

Napsol is a Swiss technology with more than 30 plants over the world in the low moisture food and the leader in the nuts, seeds, dried fruits, herbs and spice industry all over the world like China, Australia, South Africa, California, and Europe. Our pasteurization technology



has come from the sterilization-medical industry. We have adapted to the food industry by doing it under partial vacuum and by lowering the temperature which allow denaturation of enzymes responsible for oxidation without damaging the shelf life. We actually proved that we can increase the shelf life of the product. Our process is fully validated by both the Almond Board and different third-party laboratories across the world. [We guarantee 5 log reductions on every tree nuts and our technology can also bring down the kilogram of yeast, eggs and larvae's.](#)

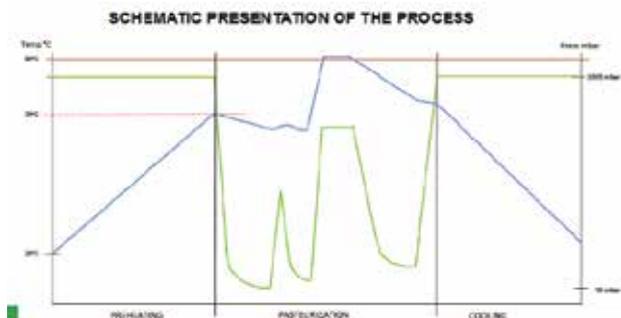
The Changing Food Safety Environment

- Microorganisms are naturally present in low moisture food products (e.g. Salmonella prevalence > 2% in raw agricultural products)
- Pathogenic germs such as Salmonella and E. Coli are a major cause for food poisoning and thus present a potential health hazard even in very small dosage especially to consumers with a compromised immune system
- Growing concerns of consumers regarding diseases stemming from food borne illnesses
- Stringent controls by authorities and very precise analytical tools in laboratories
- Trend to increased regulations by health authorities worldwide (e.g. FSMA-Food Safety Modernization Act in the US)

- To meet microbiological standards in large food processing industries often requires a validated, documented “kill-step”
- Product recalls may have ruinous financial consequences and harm brands

The Napasol Technology

- Based on the science of sterilization
- Treatment under saturated steam conditions for maximum efficiency in a wide range of temperatures (65°C - 121°C)
- A process which is validated according to FDA criteria and fully traceable
- Optimized equipment configuration for a large range of products
- Elimination of pathogenic germs (> 5-log) without altering the product quality
- Elimination or reduction of mold and yeast
- Inactivation of insects in all phases of their life cycle (including eggs)
- Minimal impact on visual and organoleptic characteristics of the products
- Low pasteurization temperatures minimize the loss of essential oils
- Partial denaturation of enzymes allows for an extended shelf life
- No moisture increase of the product due to precise control of saturated steam conditions
- Complete documentation and traceability of each cycle

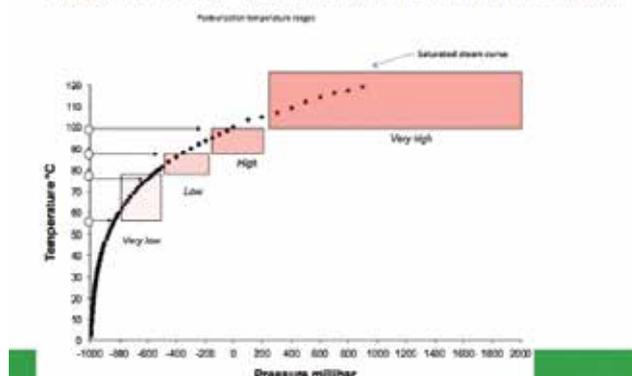


Statisol - Static Machine Design

- Products are treated in stainless steel containers with a capacity of approximately 700 kg each
- Modular concept for 1 - 6 process containers (line capacity of 1 - 6 tons/hour)
- Clear separation of raw material area from clean room
- Completely automated process from pre-heating to cooling
- Short cycle time for optimised integration into a continuous production environment
- Flexible logistic solutions for different products (trays, containers, and others)
- Concept and layout can be adjusted to specific availability of space
- Static design: ideal for tree nuts, dried fruit, herbs, seeds and in general all fragile products (whole leaves, stems, etc.)



SATURATED STEAM - MOST EFFICIENT FOR GERM REDUCTION



Rotosol – Dynamic Machine Design

- Rotating autoclave especially designed for powders and grains
- Pasteurization and blending in one step
- Automated loading/unloading simplifies the logistic for products in powder form
- Short cycle time
- No separate drying step required
- Concept and layout can be adjusted to specific availability of space

- Integrated CIP-system for efficient cleaning when needed
- Separate cooling solutions for special products are available



Service - from Engineering to Commissioning/Validation

- Complete engineering and consulting regarding the optimised integration of the pasteurization as a CCP (Critical Control Point)
- Installation, commissioning, staff training and thermal validation of the installation according to a strict protocol
- On-line support over the internet for process optimization and trouble-shooting
- Option: Yearly contract for preventive maintenance, re-calibration of all temperature and pressure probes



Research and Development

- Complete R &D centers in France and United States
- Product tests, process optimisation and demonstrations to customers
- Training of customer staff

Mr Stefano Massari, Managing Director, Oltremare

Pasteurization of Cashew Kernels Impact on Final Quality and Compliance to Food Safety Norms

Oltremare presents the comprehensive solution to meet the highest quality standards and comply with food safety

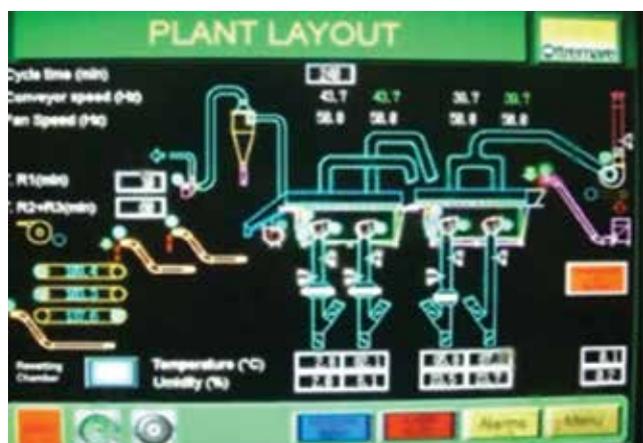
norms. Pasteurization is one of the various activities that a processor must put in place to have COMPLIANCE to FOOD SAFETY RULES. Pasteurising a product from foreign matters or insect will not serve the purpose. From here there is a need to have a comprehensive approach to FOOD SAFETY. The pest control and the reduction of the microbiological load in the product can be obtained by a PASTEURIZATION or a process to eliminate insect and pathogens micro-organism (bacteria).

The pasteurization of cashews poses various issues:

- Shape and conformation of the kernel: Curled and hollow kernels offer easy shelters to microorganism which are not reached by superficial treatment like infra red or ultraviolet radiation
- Easy sensory (color, taste and texture) changes due to overheat via high temperature or high residence time
- Moisture control: Heat treatments, in general, produce moisture reduction

The OLTREMARE line of pasteurizers represents the latest solution to have sustainable control of cashew specification compliance in particular with microbiological standards and absence of live-infestation requirements.

The OLTREMARE innovative pasteurizer has been designed to achieve the following main targets:



PRESERVING SENSORY: Controlled effects on the sensory aspects (such as taste, color, texture etc.) of cashew products, thus organoleptic properties are preserved.



NO CHANGE IN APPEARANCE: any visible difference in physical appearance between treated and untreated products, particularly no physical damages to products.

- **SPECIFICATION COMPLIANCE:** complies with the cashew products' specifications in terms of: microbiological compliance aiming at reducing the number of viable pathogenic
- Microorganisms to a level at which they are unlikely to cause a health issue, thus complying with applicable legislations
- Infestation control aiming at killing living insects in each development stage (including eggs and larvae) in such way that fumigation or additional treatment are no longer required

NO USE OF CHEMICALS: does not use chemicals during processing, uses air for mild temperature treatment.

SUSTAINABLE PERFORMANCES: fully continuous process with sustainable performance-the pasteurizer can be easily integrated in an existing production flow but also works as a standalone machine.

EASY TO USE: enjoys of an easy-to-use advanced control system to ensure 100% compliance with key processing parameters.

VARIOUS CAPACITIES: has a range of capacities so to satisfy many production requirements.

5 LOG REDUCTION: is able to achieve log 5 reduction on viable pathogenic micro-organism, validation and verification according to international accepted standards.
100% INSECT ELIMINATION: the pasteurization process makes sure of a complete neutralization of live insects, larvae's and eggs.

NO MOISTURE LOSS: ensures moisture content of the product at the exit according to specification and moisture content can be adjusted with controlled effect on sensory and product weight. In other words, no loss of moisture is happening during the treatment while on the contrary, if moisture is too low it can be brought close to market specifications.

FULL VALIDATION: report available from Bureau Veritas for the results of the selected treatment on log reduction of viable pathogenic micro-organism (Salmonella and E.coli), insect and pests, sensory aspects and moisture content.



The Oltremare pasteurizer can be installed in line with Oltremare cleaning and packing line thus assuring that the treated product is immediately cleaned and packed after pasteurization without any human touch.

For customers and the buyers, they guarantee the things are done in a proper way. Full integration of activities in the food safety area which include pasteurization, fumigation without chemicals in a proper way, elimination of insects and protection from hazardous substances, removal of foreign matter and final vacuum packing of products in big

bags or in traditional pouches. The food safety compliance or a set of homogenous and complimentary operations has to be done at the end of the process.

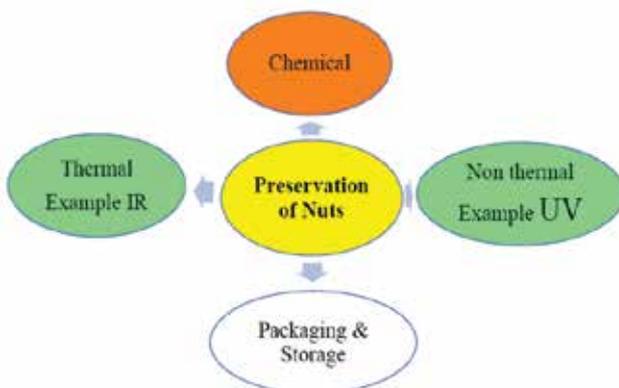
Mr K S Jayaram, CMD, TMPL Machines

Preservation of Nuts and Seeds with Innovative Conveyorized Infra-Red and Ultra-Violet Light, TMPL Machines



TMPL's machines have recently developed the pasteurization method for preservation of nuts and seeds with innovative conveyorised infra-red and ultra-violet light radiation with variant temperature. This combined technology of pasteurization is the most efficient means to kill Infestation and bacteria.

Methods of Preservation



Infra-Red Light for Hot Pasteurization

- Infra-red radiation (15-1000 um wave length) is part of SUN's electromagnetic spectrum and the most recent tool for direct disinfection and disinfestations. It kills pathogens like Salmonella in almonds, cashews and dry foods & is very effective in killing insects, their eggs and larvae's
- Infra-red waves have an affinity for water. Insects, eggs and larvae and microorganisms have higher moisture content than the grains or nuts and the infrared radiant energy targets the water in these vectors. Rapidly absorbed radiant energy heats up the live contaminants killing them in seconds
- Infra-red energy is a type of pure radiation which is absorbed by objects without any physical contact with the source of heat or with the air within the objects and the source. Nutrients retained during quick heating unlike convection heating that takes long time
- By heating with short wave IR - Edge and Internal Heating
- By heating with medium wave IR - Surface Heating
- Smart combination of heating modules for improved quality, speed and safety of food processing. Solar energy on the earth-surface 1.36kW/m2 whereas power of IR heating used by us is around 9kW/m2, i.e. nearly 7 times of the solar radiation

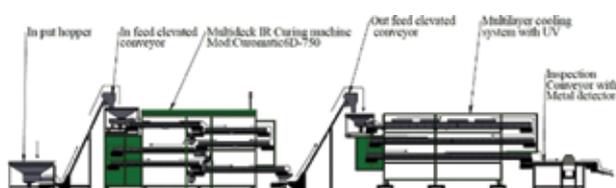
Ultra-Violet Light for Cold Pasteurization

UV forms a part of sun's the electromagnetic spectrum and the UV wavelength range is from about 10 to 400 nm.

How UV Kills Microorganisms

- UV light sterilization in an environmentally friendly method of killing bacteria, mold, fungi, and viruses without the use of harmful chemicals and does not produce residues, corrosive materials or disinfection by-products (DBPs)
- The sterilisation effect is not achieved by using chemicals or steam but through UVC radiation. The sterility of the products prevents epidemics and also increases the storage life

- Previously, herbs and seeds were either not sterilised at all or were sterilised with complicated processes like borma, steam, and chemicals etc with subsequent problem that valuable contents and essential oils and nutrients were lost during the sterilization process
- Furthermore, UV light sterilization effectively purifies the air without the use of hazardous chemicals that may be CARCINOGENIC



- TMPL's modular IR+UV disinfestations, pasteurization line integrates validated kill-step into your production environment. Modules can be added or removed during upgrades in future
- In cooperation with certified independent third party NABL accredited laboratory, we assist our customer with pasteurization validation of the equipment's supplied for greater than 4 log reduction
- Currently, only documented process can withstand the legal challenge that the nuts processing industry and retail business is faced with today
- TMPL's machines use Nano concept and in line technologies

Q & A

Mr Shaktipal- When we talk about the log reduction, would your system allow having minimum log 5 and do you also expect us to go for log 6 or 7 reduction?

Mr David Barbera - One log reduction means 1000 units or colonies, log 5 are multiplied by tens and we get 105 or 106. The Almond Board recommends log 5 reduction and it is up to the customers to have fine tuning between the reduction in TPC and the quality of the products as they want to achieve. If you go for log 6 or 7 or 8, then you will get closer to the sterilisation which means getting rid of all the bacteria and microorganisms in your log. We don't want to do in nut industry because the oil content, volatile elements, flavors, fragrances etc won't have lower

treatment as much as possible to get rid of the pathogens like salmonella, e-coli. But, hopefully first thing is pathogens will die if we get log5 reduction. Pasteurization and sterilization are enough to get log 5 reduction but not less than that as we never know when the load of bacteria starts entering into the factory.

Mr K S Jayaram - Log reduction is reducing almost a million bacteria's. We need more than log 4, 5 or 6. Basically, in our system we can add UV and IR modules and change treatment time to achieve 5, 6 or 7 log reduction. The industry can adopt as per the requirements of the nuts industry.

Mr Stefano Massari - In our case, the system has been designed to achieve log 5 reduction because that is the basic requirement of the FDA. So we have targeted for log 5 reductions, going beyond that may not be necessary all the times as there will be a problem on sensory, moisture etc. We targeted for log 5 reductions and got the validation from Bureau Veritas micro biological lab.

In the first discussion by David Barbera, it is clear that the temperature is quite low and there is no difference in the colour, but the other two has a different approach. How about the control in temperature, whether will it impact the colour of the kernel?

Mr Stefano Massari - In our case, we maintain the temperature at a level that doesn't have impact on the colour. We play more on the resident line rather than on the temperature. We won't go beyond the 80o which is a normal temperature used for drying of the kernels.

Mr K S Jayaram - We also maintain temperature as per requirements of 600, 700 or 800. For almonds, the validation is done by Dr. Zhongli Pan who is connected with USFDA, using infrared alone and off late he has been working on walnuts too and it has been the proven process. There is no change in colour. In India, research has been done where in it has shown that the nutrient value doesn't change in quick heating. Lot of research is being done in Japan by an association called JIRA. Quick heating

is used more for treating rice and other products. Ultra-violet of late is being used for treating not only water but also fruit juices and other types of natural foods, although the process is slightly different. There are a number of companies involved in the manufacture of equipment for infra-red in UK. Also, in Germany, a lot of companies are manufacturing conveyerised ultra-violet. What we have done differently is the combination of both technologies in a modular form and the system is already in practice.

Mr David Barbera – I am going to explain precisely on the way we achieve the log 5 reduction. There is two ways to kill bacteria i.e. either by heat transfers or by oxidation. Any other technology or science doesn't work. In our case we use heat transfer; the best heat transfer is saturated steam, so that we can treat viable quantity of products like macadamia which contains four percent moisture and can't go for any other kind of heat transfer as it needs energy from something else. We can't use energy from the logs because no water in it. If you use spices, seeds like flax seeds, cardamom, we need to bring heat.

Mr Shaktipal - Earlier when we talked about pasteurization it was using chemicals to address the infestation part. If someone uses your technologies, do they still need to use chemicals or can they completely eliminate use of chemicals?

Mr David Barbera - We don't use black steam to be in touch with the nuts, instead we use reverse osmosis water which is then evaporated. For non-technical people, we actually have organic steam in touch with the products so that you can certify the system organically as we don't use chemicals. Black steam is actually a non-stainless steel boiler which brings chemicals to the water which is then evaporated as steam and then brings chemicals to the nuts. The reverse osmosis system can filter the water by membranes and it gives water free-from chemicals. You can use black steam as an indirect source of heat to evaporate the water and keep in touch with the nuts. The advantage of not using fumigation or any other chemical technology is that we don't reduce the shelf life and we

don't oxidize the products as chemicals are oxidant. By using a clean steam we can increase the shelf life and expend it well before to deactivate the enzyme which is responsible for oxidation without damaging the shells. In case of hazelnuts, we proved that we can increase the shelf life by 15 percent.

Mr Stefano Massari - We use heat transfer for pasteurization which deactivates insects and the larvae in an organic way without the use of any fumigants. Then we have to remove them from inside the screen of the product. That is, we have to remove them from the package and the product is free from infestation. That's why the integration of pasteurization along with cleaning and packaging is needed.

Mr K S Jayaram - No chemicals are required if we use combined technology. Both aerobic and anaerobic bacteria are killed in this process because while heating and treating with UV, the DNA structure is changed.

Mr James Obarowski, Program Director, BeninCaju, TechnoServe



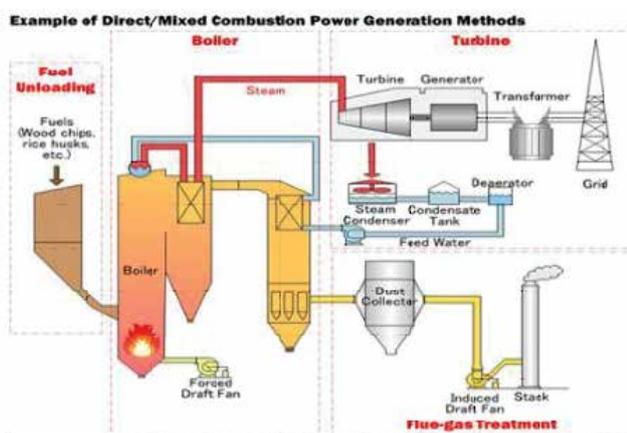
Electricity from Cashew Shell: The Business Case

There are many variables for power generation from cashew shells from Africa. Benin cashew project is funded by USDA which is a great supporter for the cashew industry. As we all want to know that the cashew shell is a waste or resource.

- Upwards of 70 percent of RCN by weight is from cashew shell after processing
- Some processors have invested in CNSL extraction
- For each kg of RCN, approximately 0.5 kg of de-oiled shell is generated as a byproduct
- Approximately 20 percent of RCN shell can be used for steam needs in processing
- The remainder is a waste disposal challenge; for small processors, without CNSL plant, big challenge

In India and Vietnam there is no problem because there are good markets for off taking the products (CNSL and de-oiled cake) but in Africa it's not used. In Benin, we anticipate at least 24,500 tons per year of shell waste by 2022. Presently burning of shells waste in open creates a problem in the environment.

Technical Feasibility Exists For Energy Generation with Adequate Scale



Electricity Costs Disadvantage African Processors

As African processors are facing different problems basically infrastructure is the major factor and the cost; from the graph, we can see various trends in different countries. There is a big gap in terms of cost from electricity to diesel generation between African countries to other Asian countries and the hidden issue here is reliability. Many processors i.e. not only cashew industry but also others could not go to the expensive equipments because the frequency over the accessories is inconsistent.



*Estimates at peak/ standard industrial rates, excluding levies and fixed fees

Competitive Impact on Processors

- Increased scale increases energy consumption
- Increased mechanisation also needed for efficient scale, increasing electricity costs further
- Total potential costs over USD 400,000 per year for large scale mechanised production

Business Case for Power Generation

Example: Co-generation of steam and Electricity, 24hrs operation

Description	Units	1 MW	2 MW
Useful Power available	KW	800	1700
Capital investment	USD Millions	0.87	1.53
De-oiled Cashew Nut Shell Requirement	MT	7,908	15,816
Operating cost of power	USD/kwh	0.060	0.060
Fixed cost of power	USD/kwh	0.026	0.025
Simple pay back	years	2.9	2.5
Estimated IRR	%	18.70%	25.10%

Key Considerations for Processors

1. Cost of grid electricity and diesel
2. Reliability and quality of grid electricity
3. Scale – substantial own production of shell and consumption of energy
4. Availability of alternative fuels
5. Ability to find synergies with other processors
6. Opportunity cost of selling de-oiled shell to other industries
7. Market for energy produced – own needs, feed-in revenues, micro grid

Mr Shakti Pal: I would like to recognize the efforts of Mr Rajkumar, who is pioneer in it and having 6MW power plant in India who supported us with his valuable inputs which encourage us to study about generating the power from cashew shells in Africa.

Opportunities in Cashew World



Discussion: Africa Investment Forum

Moderator: Mr Ernest Mintah, Managing Director, ACA

Panelists: Mr Gopi Krishna Reddy, ETG Farmers Foundation, Ms Mary Adzanyo, Director Private Sector Development, GIZ/ Com Cashew, Mr Jim Fitzpatrick, Business Development Consultant and Mentor, Ingredient Sourcing Solutions, Mr Illios Jose Bande, Country Director of INCAJU, Mozambique

Initial Comments by Moderator:

Let me begin with a quote from one of our major investors in the African cashew sector. “Let us acknowledge the success of India and Vietnam. Let us assist each other through PPP’s. “The future lies in Africa because the production lies in Africa”, quoted by Mr Mahesh Patel, Chairman, ETG Group. Thank you Mr Patel and for all believing in Africa as the future lies there.

Ms Mary Adzanyo, Director Private Sector Development, GIZ/ComCashew

Competitiveness of the African Cashew Sector



Opportunities in the cashew processing sector in Africa

Global market is growing at a rate of 7-10 percent per annum

- 1.65 Million tons of total production (forecast 2018) in Africa
 - 1.12 Million tons of shell with USD500 Million+ revenue from shell alone
 - 14+ Million tons of cashew apples; processing only 20 percent would provide an annual income of USD 100 million
 - 450,000+ potential jobs
 - Commitment of government to support the sector
- USD1 billion+ revenue from equipment supply World

Market Flow: In shell; Moving RCN has a cost



Data Estimated Typical 2012/2013/2014/2015 Seasons
Sources: Cashew Club, UNComtrade, ComCashew, and CEPCI

Competitiveness of the Cashew Supply Chain In Africa

- Value addition, value for money and return on Investment

Competitiveness of the African Cashew sector

- Right product at the right place – 56 percent share of production in 2017

Product Quality And Yield

- Comparable with other successful origins
- Quality improvement platform in Cote d’Ivoire
- Post-harvest infrastructure needs improvement (warehouse, port)
- Role of development cooperations: GIZ, Technoserve, IDH, BTC, etc
- Role of industry platforms: Trainings and ACA Seal

Cost of Processing and Returns on Investment

- Cashew processing is profitable when well organized and managed
- Labour vs Technology/ Equipment
- By-products processing
- Gross margins 35-40 percent
- 3-5 year return on investment

Efficiency of the Supply Chain

- Effective supply chain linkage

- Traceability
- Reduced transaction costs
- Savings on transport cost

Market Access

- Cashews represent 19 percent of the global nut market
- Healthy snacking and lifestyle
- Demand growing at 7 percent per annum and surpasses demand
- Kernel buyers available and willing to diversify their markets

Role of Government Interventions: Incentives, Duties

- Initiatives to support local processing
- Tax rebates on installation of new factories – most countries
- Premium for processors – 400 FCFA/kg kernel
- Processor buying window – Benin/ Mozambique
- Provision of technical assistance: CTC, World Bank EIB in Cote d'Ivoire
- CICC/ REDAA

Financing

- Cost of funding from local banks a challenge; however continues to improve
- ACA Economic Models study (2018)
- Engagement of international banks

Sustainability

- Traceability
- Food safety
- Standards for RCN buying

Mr Gopi Krishna Reddy, ETG Farmers Foundation

Today Africa is the world's largest producer of RCN. Can it sustain and will be world largest producer? It all depends on the active involvement of all concerned in this sector. It is estimated that RCN market is going to be USD 10 billion by 2025. The tree yields / productivity need to be increased significantly. The outturn ratio per bag needs to



be increased. The impacts of climate change need to be better. Every farmer, producer needs/able to anticipate the weather forecast and plans accordingly in advance. India, Brazil and the US faced the impact of climate change in the past.

How does Africa ensure that it remains the world largest producer of RCN? In processing, it is a challenge but if you don't sustain production, even if you increase the operating processing capacity every year, so it is imperative that how Africa is going to sustain the RCN production level. So, if we don't invest in the foundation of production of RCN at the farmers level by educating and making them aware of modern high yield techniques such as the usage of high density, ultra-high density planting. The farmers will not be able to produce high quality RCN which may lead to bad processing. [Sustainable and safe cutting-edge technology awareness needs to be made available at production levels as small hold farmers may not be having sophisticated communication tools.](#)

Affordable finance is available to less than 10 percent of the farmers across Africa. What are we doing to improve financing so that the production actually increases year on year?

Next is the infrastructure where every African country is planning to increase the processing of RCN by about 50 percent in the next few years. But less than 30 percent of Africa is having stable electricity. How are you going to process 50 percent of RCN without having stable electricity? Is the country is equipped enough to achieve

the desired targets? Do you have the skilled labours and engineers for the equipments which need to be imported for processing? What are we doing; so that Africa remains not just a RCN producer but truly an agricultural leader of the world? Does Africa have better logistics? No. It is improving on day to day basis. Is it enough? If Africa needs to remain as a leader, the investment needs to come from private sectors in collaboration with governments to provide the solutions to tackle the existing bottlenecks based on the amount of processing that Africa is going to carry out locally.

Intra-Africa cross border trade relationship needs to be encouraged. Africa should learn from European Union on the ease of trade between the cross-borders which changed the game for European Union to emerge as single economy, single currency. Within Africa, every country has two currencies i.e. hard and soft currency. What is Africa doing towards that? What are we doing to sustain the production is a challenge as Africa is the global leader of cashew production. India was the leader year's back but lost to Vietnam and will Africa lose it to other countries in the world?

ETG Farmer's Foundation has been working on the food security issue. We camp ourselves at the farm levels, educate them on cash crop, modern methods and techniques, ultra-high density planting, will make aware of planting 300 cashew plants instead of 60-65 per acre, and how do you do that and why do you do that. We have proven track of introducing the crop, agri-economic knowledge, how to understand agri-ecological feature and plant, how to bring technology from countries like India. So we have partnered and worked with Ministry of Science and Technology, Government of India and trying hard to work and understand that what kind of technologies can be brought into Africa that help producers, anticipate and forecast the production, the yield could come out of their land as per current weather as a daily weather change. If there is no rainfall or high humidity and how to tackle these scenarios because to get the high yield of RCN it has to start at farm level.

Mr Jim Fitzpatrick, Business Development Consultant and Mentor, Ingredient Sourcing Solutions

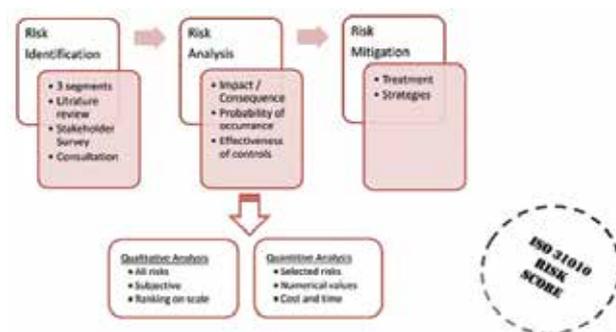
Risk in the African Cashew Sector



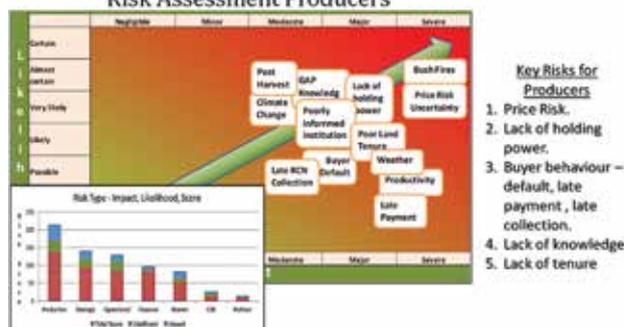
Risk Assessment: Cashew Sector

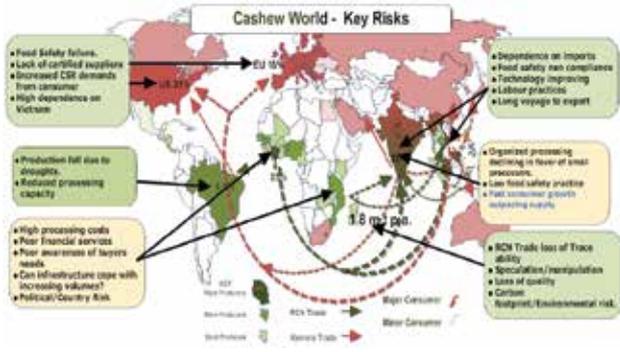
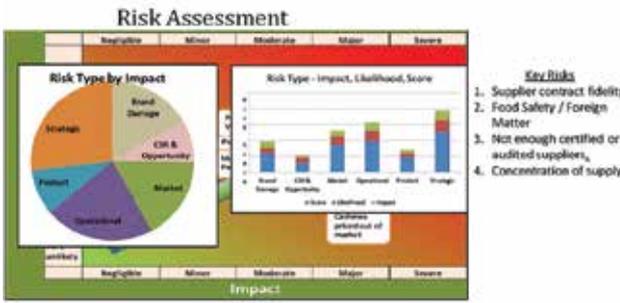
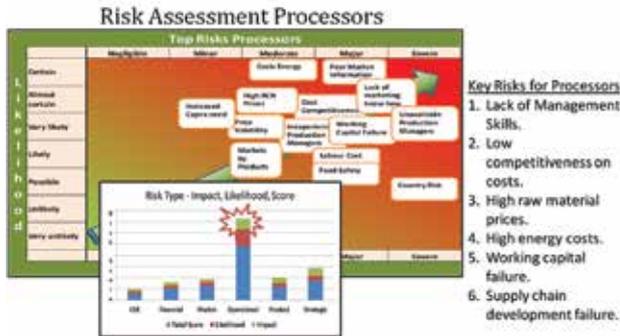
- Identify risks in the African cashew sector
- Scoring, categorization and testing of results by survey
- Emphasis sustainability, product quality and food safety
- Suggest risk mitigation strategies
- Develop pointers toward competitiveness

Risk Assessment Method



Risk Assessment Producers





and processing has started to grow year by year until now. Ten years ago, in 2007, we processed 20,000 tons of RCN (about 3000 tons of kernels). In 2017, we processed about 48,500 tons of RCN employing more people. In 2018, we hope to process more than 60,000 tons of RCN in our local processing factories. We have about 15 factories in Mozambique mainly located in Nampula province. We have big processors like Olam, ETG, Condor nuts and others.

Following are the favourable government policies for the sector: Agriculture is a priority sector for economic growth. Government has created a special agency of investment called CPI (now called APEX) which facilitates investments. When you come to Mozambique to invest in agriculture sector and especially in the cashew sector, the government of Mozambique has created economic special zones in Nacala and Beruit which is tax free.

Mr Ilidio Afonso Jose Bande, Country Director of INCAJU, Mozambique

What the Mozambican government has done for promoting the cashew processing in their country?

The processing of cashew in Mozambique has stabilised now. In 1980-90s, Mozambique was processing more than 100,000 tons of cashews and employed more than 25,000 people for processing RCN. During that period the industry and the production collapsed because of civilian war and due to changing political and economic landscape. Earlier we were a socialistic system and later changed to another system.

In 1997, the Government of Mozambique created INCAJU whose role was to re-establish the production of cashew and revive the cashew processing industry. The production

In order to stimulate processing, the government has an export tax on RCN which is about 18-22 percent on the FOB price. The government has also invoked the right for local processing i.e. not allowing RCN export unless until at least sixty percent of the demand of the local processors is met. We have National Cashew Committee which will discuss with the processors with respect to supply of RCN and then allow it for exports. In the commercial point of view, we have created a cashew guarantee fund to the exporters to the tune of 20 percent of money collected by the way of RCN exports and also with the USAID; there is a big guarantee fund for the processors they can use for investing in their processing factories.

Cashew Vision 2030: Taking Stock and Moving Forward



Moderator: Mr Ranjit Walia, CEO, CHI Commodities Handlers Inc.

Panelist: Dr. Adama Coulibaly, Managing Director, CCA Cote d'Ivoire, **Mr Shakti Pal**, Global Cashew Sector Lead, TechnoServe, **Mr B K Anand**, CEO, Vink Corporation, DMCC, **Mr Mahesh Patel**, Executive Chairman, ETG Group, **Mr Ernest Mintah**, Managing Director, ACA, **Ms Mary Adzanyo**, Director-Private Sector Development, ComCashew, **Mr Florian Johannes Winckler**, Director Production, ComCashew, **Dr. R K Bhoades**, Chairman, CEPCI, **Mr Jim Fitzpatrick**, Business Development Consultant and Mentor, Ingredient Sourcing Solutions
Mr Cheng Hung Kay, Managing Director, CHK Trading Co., Ltd.,

Cashew vision 2030 panel discussed some of the key challenges such as availability of cashews to meet the demand, how to tackle food waste, how to boost demand, has to increase supply, which country would be the main producers of cashews by then, whether international RCN trade is sustainable, how much of RCN would be processed as kernels in Africa by that time, role of government in the development of cashew sector, consolidation in the cashew sector, the role of financing – where the money is going to come in to the cashew sector, role of women, and interesting aspect is where do you see china in 2030-A supplier/consumer/grower.

Mr Ranjit Walia: Our intent is to find out where the cashew industry is heading towards by 2030.

Will there be enough cashews to meet the demand in 2030?

Dr. R K Bhodes: The CEPCI has conducted a study similar to this line but that is based on the year 2025. As of now the global RCN production is around 3.2 million tons and if this trend continues then by 2025, we should have 4.1 million tons of RCN. By 2025 India's RCN production is likely to be two million tons and global RCN production will be around 4.8-5 million and there should be breakeven level by then. By 2030, I anticipate that the global raw cashew production to be around 6-6.3 million tons and consumption will be slightly lagging. So we should put constant efforts to promote the consumption so as to maintain the equilibrium.

How do we tackle food waste by 2030?

Mr Florian Johannes Winckler: The global food loss accounts for 1/3 of overall food production. Food loss all along the supply chain is higher in industrialized countries by about three times than that of developing countries. This trend is going on for quite some time and will continue in the future also. To minimize food loss especially in cashew sector, we need to start utilizing cashew apple. Across the growing origins apart from Brazil, where cashew apple is fully valorized, partially In India, and to some extent

in Vietnam. The contribution from the cashew sector to tackle food waste by 2030 would be to continue to valorize the cashew apple.

Do we need a plan of action to boost cashew demand by 2030?

Mr Jim Fitzpatrick: Cashew is on a road to black hole. There is no balance between supply and demand which could only lead to speculation. USD 6 or 7 per pound may be seen but I am afraid that consumers won't be there with us by then. We do not need a plan for at least five years. We need to put the ship on course towards reality and then we can make a plan.

How do we increase supply?

Mr Mahesh Patel: Supply chain plays an important role in maintaining the price stability. Hence, the focus should be more on Africa to increase the global cashew supply where the future lies. All stake holders need to support Africa. If that happens, lot of change would take place. Next important thing is access to affordable finance which is vital to boost supply of cashews. They must have access to finance from banks and financial institutions which will incentivize the stakeholders.

Next point is about inter-industry and inter-country collaboration which will play a key role in boosting the supply and cashew future. Hope to see improvement in infrastructure development, transport, logistics, public investment and education. More importantly, skills are to be developed as per modern methods and technology at farm levels and at each supply chain levels to ensure growth at all levels. The next priority is bureaucracy. Seamless dialogue between government and private sector is imperative in the development of the sector as cashew is a seasonal crop and variation from one country to other is very unique and hence collective and collaborative efforts put together is a solution.

To conclude, going forward orientation of banks and financial institutions towards the sustainable modalities

for agriculture supply chain is the key priority including ensuring their participation and integrated training programs which include technical, organizational and financial for smallholding farmers to incentivize and build their skills and capacities of individuals as well as groups and families.

Which countries would be the main producers of cashews in 2030?

Ms Mary Adzanyo: The current trend shows that production is going slightly higher in India, quite stagnant in Vietnam and Africa which is the main continent where the production is growing. In 2030, Africa will produce about 70 percent of world cashew and the main producers will be the Cote d'Ivoire, then potentially Nigeria, Benin, Ghana and others. In Asia, India is likely to be the key producer by looking at the initiatives of CEPCI and their government to boost the production. In Vietnam, there are some initiatives and modifications taking place to increase the production there. Some emerging countries such as Cambodia, Laos and Indonesia have potential in producing more cashews.

Mr Shakti Pal: On the processing side by 2030, Africa will not be exporting less than what they are exporting right now, but I am sure that Africa will process about 1.1 million tons of RCN locally. So there will be no problems in exports. There is a great news that processing is coming on three factors which are important to make it happen and which are going to drive it: (i) market led operation i.e. market needs more nuts and market needs more processing in Africa to sustain the supplies, (ii) the government will start looking at this potential, that's how they will address their rural development and employment and (iii) know how to start gearing up the processing.

Why would people continue to eat cashews? Which country would eat cashews the most?

Dr. R K Bhooles: The cashew consumption is basically due to taste, habit and there is a lot of discussion that consuming the cashew is not good for health but now

there has been a lot of research done and concluded that eating cashew is good for health. In the coming days, apart from the habit and taste, the health and nutritional benefits will be the driving force. [India consumes cashews not only as snack but also as an ingredient in the food items with more and more innovative products coming by knowingly or unknowingly.](#)

[India will continue to retain the number one status in terms of consuming cashew followed by China, Middle East and the US.](#)

Is the international RCN trade sustainable?

Mr Jim Fitzpatrick: No. The RCN market has all the features of a bubble. It has unqualified new entrants, too many experts, too little infrastructure, nothing to anchor the ship. I am afraid if it continues irresponsibly, then that ship is going down.

How much of RCN would be processed into kernels in Africa?

Mr Mahesh Patel: [Africa, slowly and gradually will increase the processing capacity with the active support of public-private partnership and the participation of government and their policies. If all these are put in to place properly, then Africa would at least process between 30 and 40 percent of their produce.](#) A lot of challenges and lot of skills need to be inbuilt in to the small holder farmers. Also, the biggest challenge in Africa is the infrastructure, which is also to be developed simultaneously, and we feel that by educating, understanding and having dialogues with the government, having strong understanding of putting in remote areas of Africa, where there is huge potential of labour, which is ideal at the moment. So by combining altogether, we can achieve 30-40 percent.

Role of Government: What is the role of the government in the development of cashew sector?

Dr. Adama Coulibaly: I would like to stress my intervention around three areas. The role of government in the future development of cashew sector would be essential as we

know that cashew sector has been much less organized when compared with sectors of other commodities, those listed in stock markets; however, there has been very good momentum in structuring the sector and the role of the government would be to strengthen that momentum.

One area would be to set up an international platform of cooperative interactions between different countries across the value chain. There is already a basis for such international cooperation and in this context; I am referring to the International Cashew Advisory Council which already includes 10 Africa countries. The idea would be to extend the scope to include other countries such as America and Asia so that they can have more interaction with different players in the sector. Another area would be for the government to intervene in structuring the cashew sector is from the farmers to the exporters.

The second area relates to the cashew research and seedlings development. We are of the view that the government should build capacities in terms of skills and provide specialized training to local farmers, engineers so that much less products can be imported in terms of equipment and they can be built in Africa and maintained there. The Government should provide incentives to favour technology transfers especially from the most advanced countries in the cashew sector.

Final point would be related to the involvement of government to ensure the sustainability of the cashew sector. One such thing is to increase the productivity. In most of the African countries cashew farming is extensive and sometimes people farm in classified forests. The idea would be to have structured cashew sector to ensure sustainability and also respecting the environment.

Why Vietnam is not producing enough raw cashews to meet their processing demand?

Mr Cheng Hung Kay: In my opinion, it is very difficult for Vietnamese to get good enough raw cashews to process locally. Why can't they allow large cultivation of raw

cashews in Vietnam? As per my interaction with some of the Vietnamese cashew processors, the cost to grow raw cashews nowadays is much higher in Vietnam than what they pay for cashews from Africa. In the past 30 years Vietnam grew a lot of cashews but there is no big cultivation in terms of acreage. In the coming years if they don't change their system of cultivation, personally I don't think that they will be in a position to supply good raw nuts for their processing needs.

Mr Ranjit Walia: Vietnam has undergone a major restructuring in its social structure. Already a concrete jungle replaced with trees in the last decade. Considering the export booms in their little factories cannot be feed by the trees even if we plant them today or by 2020. I heard a whisper that in December -2017, they change their vision that going forward they do not want to increase the quantity but to improve the quality of nuts. By 2030, we don't know whether that has been achieved with all the revised food safety laws, etc., but this was their intent regarding quality in 2017 December.

How would you organize the supply chain by 2030?

Mr B K Anand: From farm to folk, the supply chain should be through the shortest possible transit. But the road map to achieve this will be little longer and we need the multi-stakeholder participation with the driving seat in the hands of the governments of Africa who are the origin of cashews for 2030. The supply chain today is very convoluted. Production of raw cashews takes in one place; the produce is then transported to another place for processing. The processed kernel is further transported to final place of consumption. The current supply chain increases the cost to the end user and to the disadvantage of African growers who are not getting real value for their produce.

Today we are discussing about why processing is not happening in Africa. We need to go beyond processing and we need to move on to the value-added products. Why we have not been able to supply roasted cashews out of Africa, bring in the investment culture supported

by the producer. About 56 percent of the global cashew is produced in African countries with a 7-8 percent growth potential. Vietnam is not producing much and India may produce but have enough demand because of their own consuming pattern and the recipe. All the ingredients of that recipe are very clear. All stakeholders should sit down and work on it and move on it to achieve that.

Conventions like WCC are very important and at the end the recommendation paper should go to all the stakeholders and what we are going to do it to achieve the vision 2030.

Consolidation in the Sector

Mr Jim Fitzpatrick: We are seeing consolidation in the cashew sector. More consumers get involved at origins that are in response to their own fears as they all are dependent on single origin and their inability to find suitable suppliers. We can't see them entering into the African sector as we have seen in other commodities. There will be more consolidation. There will be fewer bigger players to come especially in raw cashew nuts as well as in processing. When the bubble bursts, the consolidation will get stronger and stronger and the weaker link disappears, going forward.

Mr Mahesh Patel: Lots of efforts are required and I am sure that the leaders in Africa are now waking up. There are lots of problems among the main four which could be resolved by this industry. First one is poverty and people are staying below one dollar which could be resolved. Secondly, lot of rural and urban migration which could be prevented. Third is the middle economy and the final and biggest problem in Africa is the youth unemployment. These four factors will definitely make government to move faster and quicker in ensuring, addressing cashew as one of the sectors in Africa as it has huge land and the future of Africa lies in agriculture not only in cashew but also in other commodities. So consolidation will play a big role and they are looking forward to right stakeholders.

Mr B K Anand: There is two ways for consolidation. One

when you force it, i.e. the high prices of RCN and the second is when you create a road map for the industry to get the consolidated where in lot of policy framework is needed and all stakeholders should come on to the platform. The good news is that a lot of policy framework is being done and the time is to enforce and implement the policy to make more effective for consolidation to happen. [Consolidations are good for the overall sector and industry and also give reward to farmers and better price to customers.](#)

The role of financing - Where is the money would come from into the cashew sector?

Mr Ernest Mintah: There are number of factors have to be considered before financing. What kind of viable processing models are there? What kind of technology mix is suitable for any geographical zones in which you are operating? What are the economics of this viable model of processing where we are looking out and finally what are the risks in the sector? For bankers and financial institutions, the main objective is to transform risk into return as long as the risk is known they would be interested in coming in. Then we will have many more banks and financial institutions joining the likes of responsAbility, NMB etc., to finance the sector. Second, the source of financing is the sustainable way of financing through supply chain. If we can build by 2030, the sustainable supply linkages from farmers end to ensure quality of RCN, quality kernels moving from the producers to consumers. Then in the end, we will also have finance moving from the retailers, roasters, processors all the way back to the producer end. To mitigate the risk of capital loss of investors, the government should also have to play a role.

Role of Women

Ms Mary Adzanyo – Women play a very major role in the cashew sector. About 60% of global cashew workforce is at the production level and 90% in the processing factories are women. By 2030, at least 15-20% of big factories will be owned by women. I foresee more women managers in factories and in the supply chain. We need to increase

the efficiency of working women in factories in order to increase the competitiveness going forward.

Mr Ranjit Walia: Ms Indra Nooyi, PEPSI has made the major push in introducing cashew as a beverage in India, a true visionary in this field.

Where do you see China in 2030 – A Supplier / Grower / Consumer?

Mr Cheng Hung Kay: Cashew market in China is really big, consuming more than 50,000 tons per annum now.

The prices are competitive. For example-China began to consume cashew kernels from the year 1995. Consumption of cashew kernel has gradually increased since then and the prices are competitive. Consumption of cashews in China is likely to grow by 3 to 5 percent per annum. Chinese consumption of other tree nuts such as almonds, walnuts and pistachios is in excess of 100,000 tons. Definitely there is a scope for increasing cashew consumption in a big way by the way of promotional activities and spreading the knowledge about nutritional benefits.



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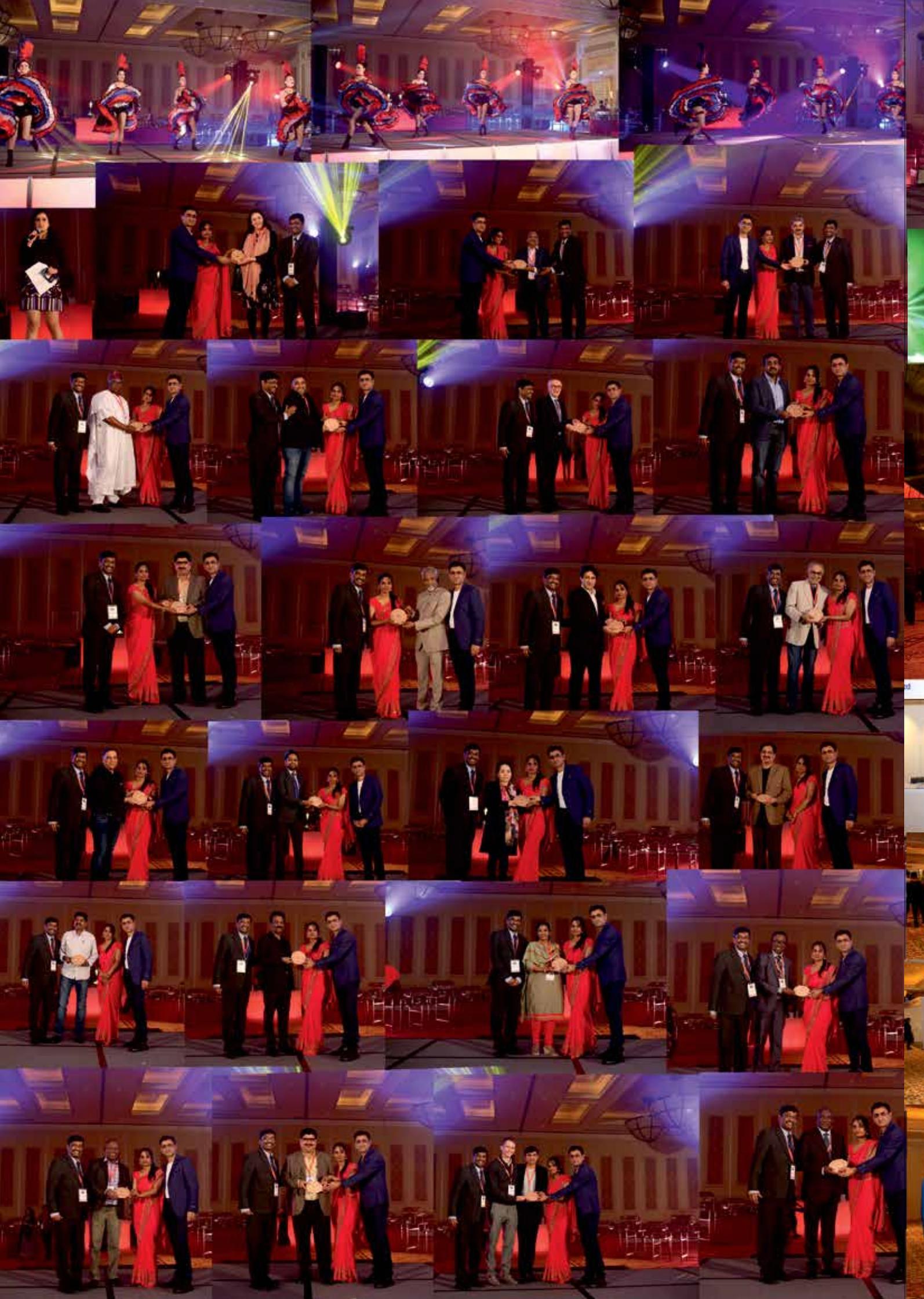


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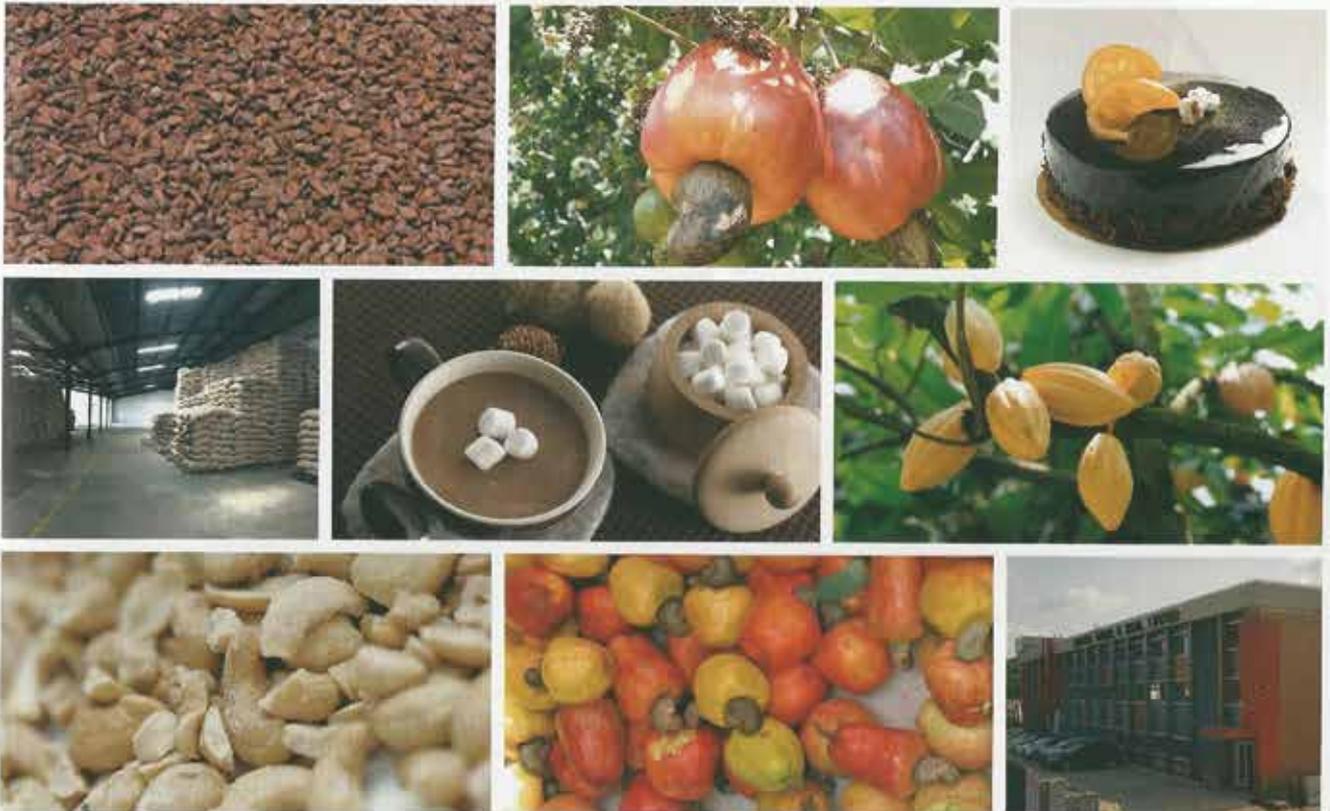
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