ACA

AFRICAN CASHEW ALLIANCE

10 years

A DECADE OF TRANSFORMATION

ACA World Cashew Festival & Expo 2016

Bissau, Guinea-Bissau

September 19-22, 2016

Competitive Cashew Processing in Africa - Innovations

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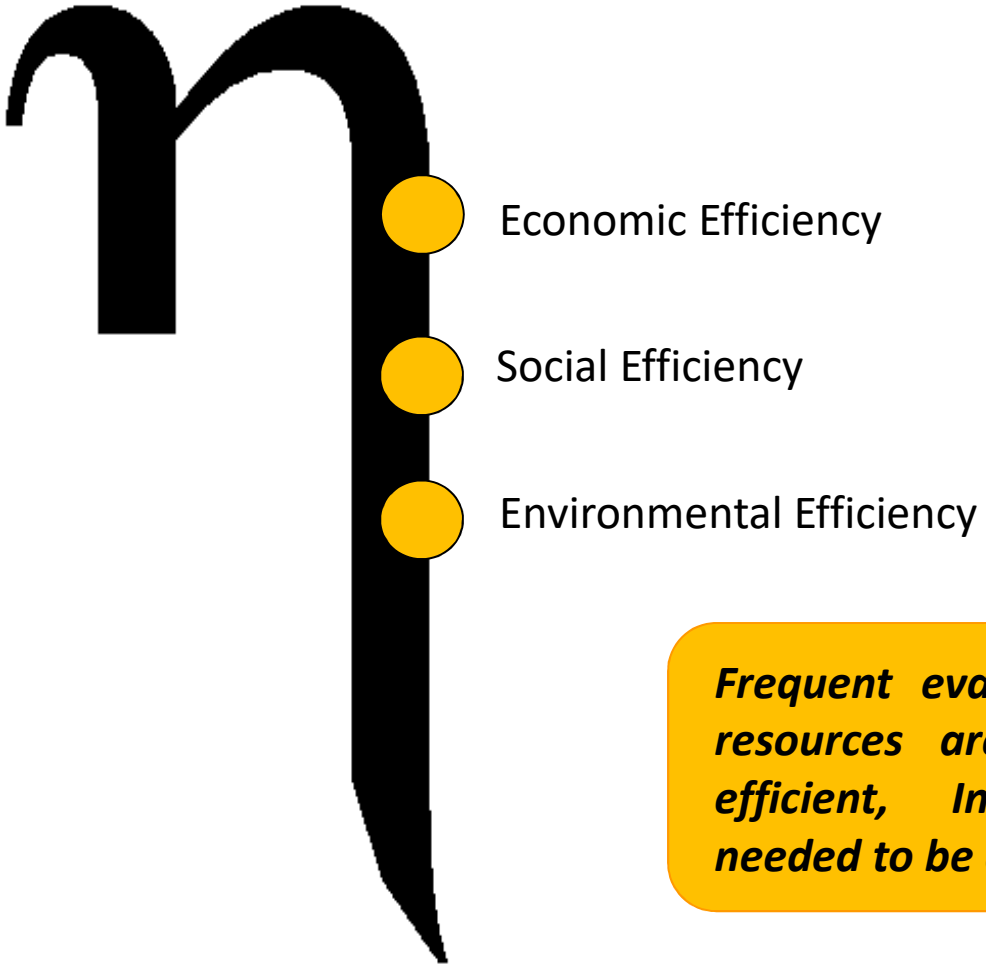
21st September, 2016

Competitiveness – Definition

"**Business competitiveness** is the capacity of a firm to create value through sustainable long-term growth and profitability."

By IMD World Competitive Centre, Switzerland

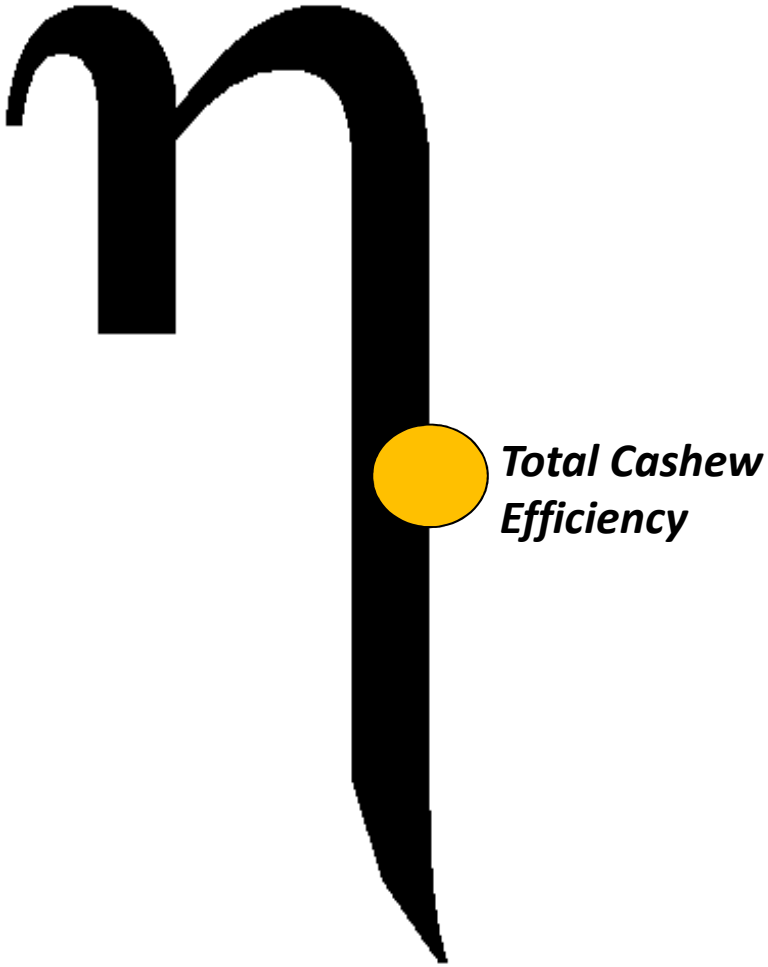
Competitiveness – Becoming All-rounder



Frequent evaluation the purpose for which the resources are applied. For a company to be efficient, Integrated Efficiency Management needed to be applied!

Total Efficiency Management

Competitiveness - Industry Definition



- Is it higher yield ?
- Better Premium Grades %
  (Wholes and Whites) ?
- Machine and Human Productivity ?
- Minimized per unit cost of Production ?
- No Child or Prison Labor
- Fair Wages and Union Freedom ?
- Working Environment Conditions?
- Environmental Protection ?
- Waste Management ?

Competitiveness – A Necessity

- Key to sustainable business Growth
- Reality: 'Perform' to Compete or 'Stay Out'
- Rising Costs chasing Margins
- Minimal eligibility to perform in Export Market
- Consumer and Regulatory bodies grown Expectations

African Competitiveness Gaps

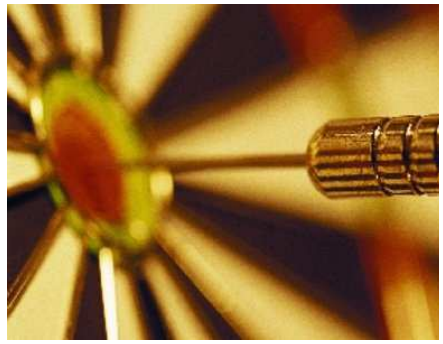
Countries	RCN Yield MT/Hect	Outturn lbs	Farm-gate Outturn Loss %	Packed Wholes %	White Kernel %	By-Product Local Demand	Labor /'000 MT #	Sales Price Variations %
Mozambique	250	44-48	5-6	65-70	75-82	TBD	75	-12
India	697	50-56	1	75-80	80-85	Yes (40%)	50-60	+25
Tanzania	1,005	45-52	3-4	60-65	75-82	Partial (15%)	175	-15
Vietnam	1,200	50-56	1	65-70	75-80	Yes (30%)	40-50	-10
Ghana (WA)	733	44-48	4-5	60-65	70-75	TBD	180	-15
IVC (WA)	511	48-52	6-8	60-70	70-75	TBD	190	-20
Nigeria	500	46-48	6-8	60-65	70-75	TBD	80-120	-20

Countries	Production Cost (1)	Additional Logistics Cost (2)	Financial Costs vis-à-vis India-Vietnam (3)	Yield losses vis-à-vis India-Vietnam (4)	Investment Incentives (5)	Added Value via by-products (6)	Net Cost (US$/MT)
Mozambique	400	-	29	65	126	-	368
India	350	97	-	-	83	110	254
Tanzania	375	-	29	65	160	-	309
Vietnam	200	97	-	-	-	80	217
Ghana (WA)	440	-	29	65	-	-	534
IVC (WA)	630	-	29	65	20	-	704
Nigeria	410	-	60	50	-	-	520

{Net Cost US$ = (1) + (2) + (3) + (4) – (5) – (6)}

Source: Industry interviews and cross-continent analysis, 2015

Competitiveness Ingredients



- ✓ Government Recognition & Biz Environment
- ✓ Supportive Incentives and Investors Protection
- ✓ Domestic Consumption
- ✓ Competitive A2F sourcing in time
- ✓ Choice of investment and expansion approach
- ✓ Knowledge of demand and supply to control the perception risk
- ✓ Advanced business relations with suppliers and buyers
- ✓ Access to middle-management talent
- ✓ Quality, Productivity and Efficiency at farm & factory floor
- ✓ Frequently connected to Market and Industry Information

Source: ACA 's Industry Analysis, 2016

African Cashew Industry Potential

Cashew Processing Investment Potential! Over 1m MT RAW MATERIAL FOR VALUE-ADDITION WORTH OVER $2 Billion

Potential Markets for Equipment Manufacturers! TARGETTED MARKET WORTH OVER $200 Million

Cashew By-Product Processing Potential! ACCESS TO UNTAPPED MARKET WORTH OVER $7 Billion

Source: ACA and Industry Analysis, 2016

Innovations of Decade - Preconditioning

- Steam Roasting turned to be every SME's Choice across cashew globe!
- RCN Calibration is more a sort of 'Need' to extract precise performance!
- Automatic drying is available for RCN now for fast processing!

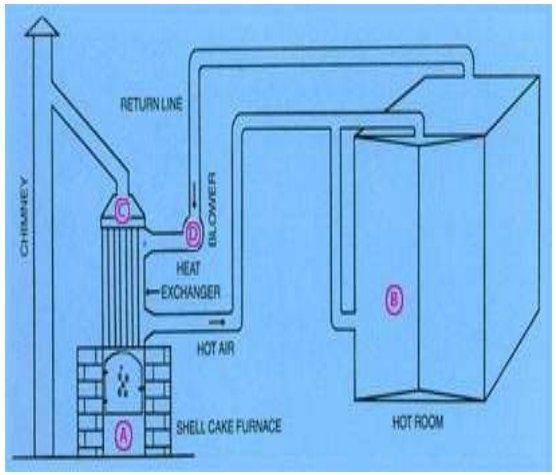
Source: ACA Equipment Industry Analysis, 2016

Innovations of Decade - Shelling

- Lankan Innovator (Buddhi Industries) launched semi-automated sheller!
- Indian equipment makers further refined and launched industrial versions of higher output!
- Vietnamese innovators as well came with fully-automated shelling unit for large scales!

Source: ACA Equipment Industry Analysis, 2016

Innovations of Decade – Drying & Peeling



- Decade initiated with Heat Based Driers 'Hot Chamber' and by mid 'New Steam Driers' revolutionize the drying!

- Refined & Economic Vietnamese Peeler!

- Small-Medium scale efficient Indian auto-peeler!

Source: ACA Equipment Industry Analysis, 2016

Innovations of Decade - Sorting & Packing

- Automatic sorters and graders for Whole and Broken kernels from India making sorting and grading easier!
- Automatic color sorters for all cashew kernels from China and Vietnam are much in trend now!
- Metal Detectors and Dust Aspirators are today and tomorrow need!
- Tin Packing shift to Vacuum Flexi-Packing!

Source: ACA Equipment Industry Analysis, 2016

What is in Pipe?

- New updated versions of auto-shelling machines promising more industrial output with better performance!
- More efficient auto-scooping devices to be revealed!
- Cost-efficient auto-peelers!
- Small-Medium scale auto-sorters (HSC Technology) and continuous steam driers!
- Power generators and charcoal makers from cashew shell!

Source: Global Equipment Manufacturers Interviews, 2016

How to ACCESS?

Source: ACi Equipment Study, 2011

Value Extraction from so called WASTE?

Annual African Production

5 Million MT Approx.

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98% WASTED APPROX.

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$0.7-3.5/Kg

$3-7/Ltr

$7-10/Ltr

Source: Alibaba, Amazon and AliExpress

Value Extraction from so called WASTE?

Annual African Production

95,000 MT Approx.

$2-700/MT

$3-550/MT

$0.4/KW

95% WASTED APPROX.

Source: ACA Industry Analysis, 2015-16

Agro-Waste Management

Agro-industrial waste produced during cashew nut processing involves the hazards of multiple pollutions, i.e. air, land and factory indoor pollution. This affects the environment and the health of the factory workers. There are two commonly followed methods of cashew nut processing, namely, (i) the roasting process and (ii) the steam (roasting) process. Both methods produce environmental pollutants. This includes thick black pungent smoke that is discharged into the atmosphere from roasting which creates an irritating odor.

Recommendations for minimizing Environmental Impacts; Air pollution can be minimized by using smoke green fuels, i.e. Cashew shell de-oiled cake and also by using industrial chimneys with prompt smoke exhaust system as practiced by major cooperate-social responsible industry giants, i.e. India, Vietnam and Brazil.

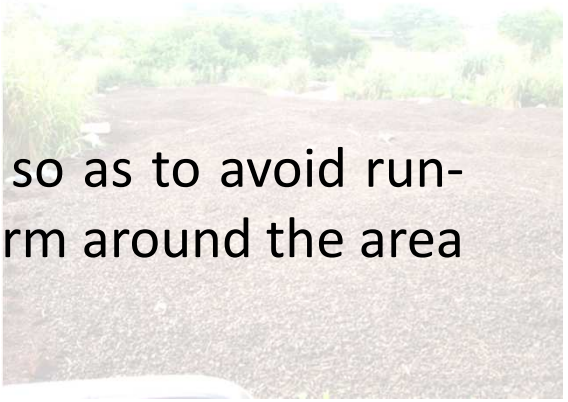
Land pollution caused by cashew shell dumping on land can be controlled by further processing the shell to value-added byproducts, i.e. CNSL, Cardanol and Charcoal and also by using organic solutions at cashew plantation to reduce the chemical residue.

Water pollution also can be controlled by installing the waste water treatment plant annexed to cashew processing factory.

Please read the ACA & USAID – THN 2015 "Waste Management Study" for more information.
http://www.africancashewalliance.com/en/news-and-info/blog/aca-delivers-presentation-environmental-impact

Source: Thomas M. Catterson, Environmentalist (USAID – THN), 2016

Improved Shell Disposal



- ✓ Plan, site and construct a waste disposal site so as to avoid run-off, and if necessary include a containment berm around the area and a sump to capture run-off!
- ✓ Load waste in layers, not too thick (50 cms) with alternating bands of soil (10-20 cms) to improve conditions for on-site decomposition!
- ✓ Consider adding another agriculture-based waste product as alternate layer to buffer acidity of cashew shell waste!
- ✓ Ideal would be to only dispose of cashew nut shell waste that has been pressed to extract CNSL– “pate de coque”!
- ✓ Build containment barriers around existing dump sites!

Source: Thomas M. Catterson, Environmentalist (USAID – THN), 2016

Alliance turned 10 years Today!

Alliance successfully concluded today its 10 years of existence, performance and growth. Be part of Celebration and strategic revamp during this 'World Cashew Festival & Expo, 2016' in Guinea Bissau during 19-22nd September, 2016