

GLOBAL SCENARIO OF COCONUT SECTOR

Discussing Value Chain & Trade
Aspects of Coconut Development



CAB International Asia-Pacific Regional Consultation 16 – 19 October 2018, Beijing Friendship Hotel, China



Outline



- 1. The Coconut Community
- 2. Coconut the Tree of Life
- 3. Coconut Production
- 4. Coconut Oil Performance
- 5. Value Chains
- 6. Trade & Market Outlook
- 7. Challenges
- 8. Scenario
- 9. Conclusion

The Coconut Community



The Farmers



















The Organization



- The International Coconut Community (ICC), formerly known as the Asian and Pacific Coconut Community (APCC), is an intergovernment organization established in 1969 by a United Nations Article, placed under the aegis of the UNESCAP.
- Membership to date are 19 coconut-producing countries.
- Mandate is social and economic wellbeing (condition) of coconut farmers. It monitors the status of the global coconut sector, including trade and industry concerns.
- Conducts its Technical Panel through conferences, symposia and fora on scientific, technical and industrial subjects to inform stakeholders.

The Members 19 Countries



Pacific Members to date:	Asia	Africa	LA & Caribbean
Fed States of Micronesia Fiji Kiribati Marshall Islands Papua New Guinea Samoa Solomon Islands Timor Leste Tonga Vanuatu	India Indonesia Malaysia Philippines Sri Lanka Thailand Vietnam	Kenya	Jamaica

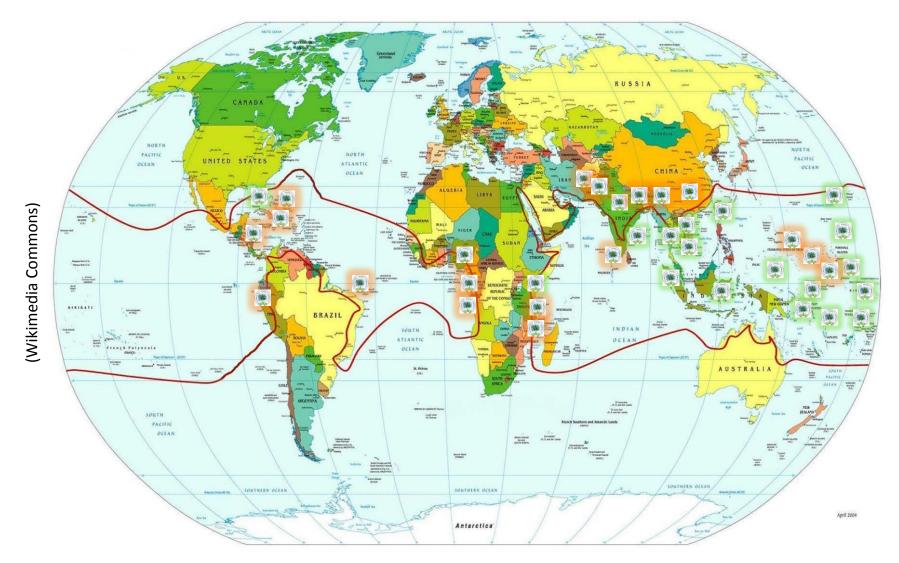
New	Mor	nhorc	tο	ho.
$IV \subset VV$	IVICI	IIDEIS	w	UC.

Cook Islands	Bangladesh	Cote d'Ivoire	Brazil
Nauru	Cambodia	Liberia	Columbia
Tuvalu	China	Mozambique	Dominican Republic
ravara	Maldives	Nigeria	Guyana
	Oman	Tanzania	Mexico
	Pakistan		Trinidad & Tobago

The Global Reach

(>39 Countries)





Coconut the Tree of Life



Tree of Life



- One of the most widely distributed plants in the world. Grows in over
 90 countries and utilized commercially in over 45 nations
- Over 90% of coconut farms are village-based small holdings of less than a hectare in size.
- Used as a traditional resource for millennia. Embedded and treasured in Cultures in much of the tropical world
- Global trade of coconut started only in the 19th century with the development of copra
- Coconut Oil extracted from copra in crude form, commonly referred to as CNO, is still the major product traded on the global markets
- Numerous ways coconut is used:
 - Household needs (non-commercial: food and cuisine, drink, medicinal, shelter, materials, fiber, energy)
 - o Farmer's livelihood (local economy)
 - Industrial products (including global trade)

Coconut Tree Uses



Coconut Husk + Shell

- · Husk: a pot for plants
- · Shells: to create bowls, utensils,
- handicrafts, musical instruments,
- exfoliating products
- Husks together with shell: fuel,
- buff floors
- · mosquito repellant.



- Coconut oil
- Coconut milk
- Nectar
- Copra
- · Coconut sap (Which can be turned to palm wine, candy, syrup, coconut sugar or palm sugar



Coconut Leaves

- Broom
- Baskets + mats
- Cooking skewers
- Kindling
- Roofing



- Drums
- Containers
- Canoes



- Dye
- Mouthwash
- · Frayed pieces can be used as a toothbrush





Consumed as a refreshing drink and for hydration in athletes and illness. Also used for skin + hair care.

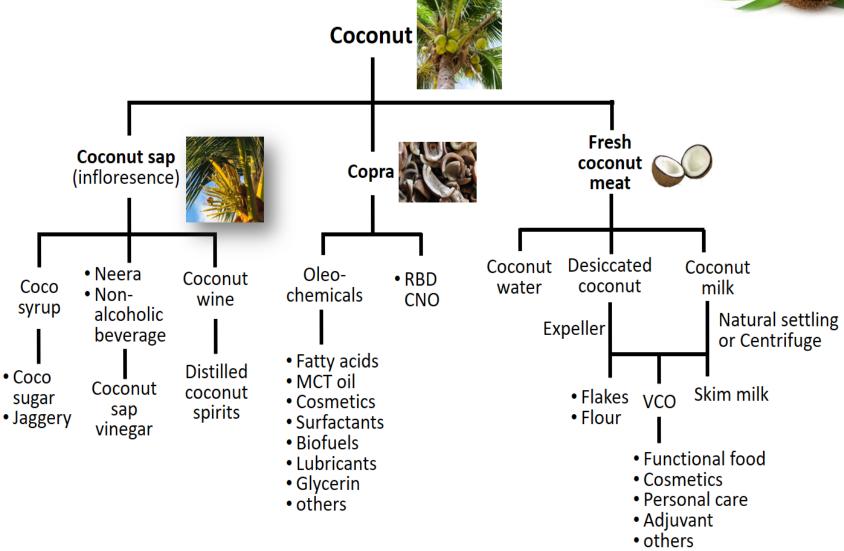
Coir

A natural elastic fiber extracted from coconut husks; used for floor mats, brushes, ropes + strings, mattress stuffing, caulking for boats and fishing nets



Downstream Products





Coconut Production



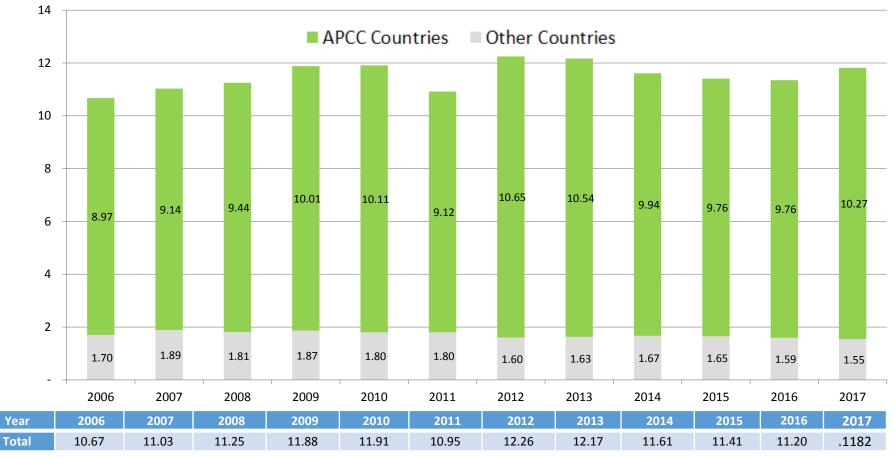
Global Status



- Over 110 states export destinations
- An estimated 60 -70 billion nuts produced annually [the copra equivalent would be estimated 12 million MT]
- The top 5 producing countries in the world are India, Indonesia,
 Philippines, Brazil and Sri Lanka. PNG is largest producer in the Pacific.
- No significant increase in production over last two decades
- Very little replanting and/or no new planting in most countries
- Land area reduced in some countries due to change in land use
- An estimated 50% of the planting area of coconuts have senile trees & require immediate replacement

Production









	Estimated	Coconut	Productivity	Estimated no. of	Estimated senile
Country	households	Area (Ha.)	(Nuts/Ha)	trees (120/ha)	palms (50%)
Fed. Stat. Micronesia	40.000	40.000	2 107	2 160 000	1 000 000
	18,000	18,000	2,197	2,160,000	1,080,000
Fiji	120,000	62,000	2,387	7,440,000	3,720,000
India	12,000,000	2,141,000	10,119	256,920,000	128,460,000
Indonesia	5,900,000	3,610,000	4,530	433,200,000	216,600,000
Kiribati	20,000	20,000	2,730	2,400,000	1,200,000
Malaysia	200,000	88,000	7,464	10,560,000	5,280,000
Marshall Islands	15,000	8,000	4,375	960,000	480,000
Papua New Guinea	300,000	221,000	6,710	26,520,000	13,260,000
Philippines	3,500,000	3,502,000	4,196	420,240,000	210,120,000
Samoa	40,000	99,000	2,697	11,880,000	5,940,000
Solomon Islands	50,000	38,000	2,631	4,560,000	2,280,000
Sri Lanka	50,000	440,000	6,623	52,800,000	26,400,000
Thailand	290,000	206,000	4,859	24,720,000	12,360,000
Tonga	25,000	31,000	2,423	3,720,000	1,860,000
Vanuatu	50,000	92,000	4,512	11,040,000	5,520,000
Vietnam	60,000	159,000	7,834	19,080,000	9,540,000
Jamaica	10,000	16,000	6,156	1,920,000	960,000
Kenya	90,000	177,000	1,462	21,240,000	10,620,000
	22,738,000	10,928,000	Av. 4,661	1,311,360,000	655,680,000

Coconut Oil Performance



CNO Export 2012-2017 ('000 MT)



- CNO continues as the major product traded globally.
- Philippines & Indonesia contribute 67% (1.61M MT)

Country	2012	2013	2014	2015	2016	2017
Philippines	1,321	1,492	1,137	1,124	895	933
Indonesia	930	868	911	917	843	696
India	392	376	395	371	363	247
Malaysia	44	53	50	52	42	44
Vietnam	34	34	34	34	33	33
Papua New Guinea	38	37	22	16	18	25
Mexico	131	129	127	127	127	131
Other countries	322	350	340	342	333	332
Total	3,212	3,339	3,016	2,983	2,654	2,441

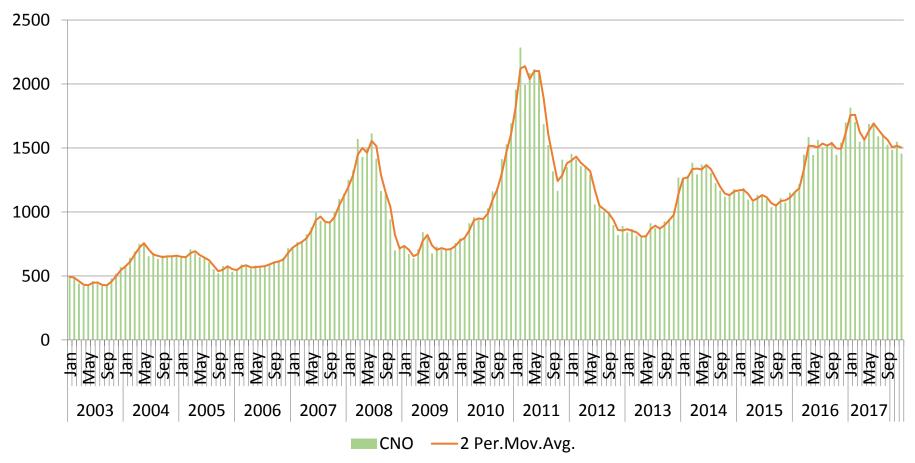
Source: Oil World, UCAP

CNO Price Movement

2003-2017 [USD/MT, CIF Rotterdam]

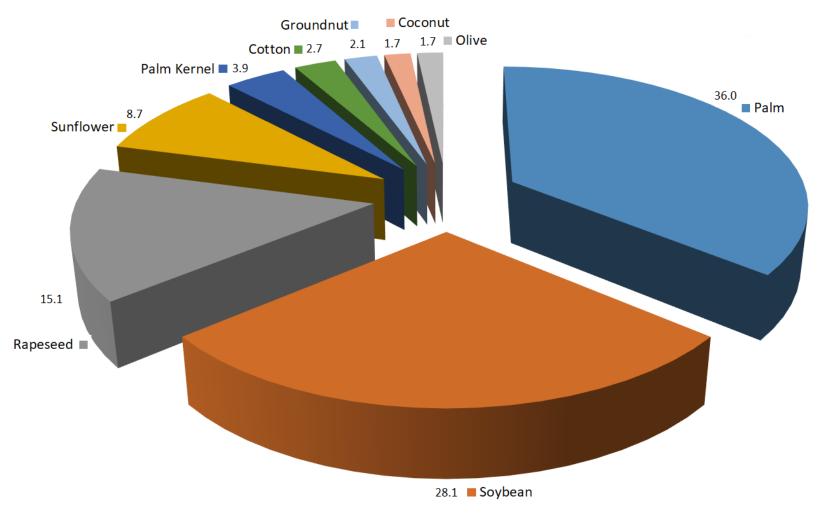


Average CNO Price CIF Rotterdam 2017 was USD1,603/MT. At 8.8% higher than 2016. December 2017 recorded lowest price of USD 1,456/MT. 2018 price forecast range USD 900–1,400/MT. Attributed to high premium over PKO USD324/MT & 14% decline in USA Market, largest importer.



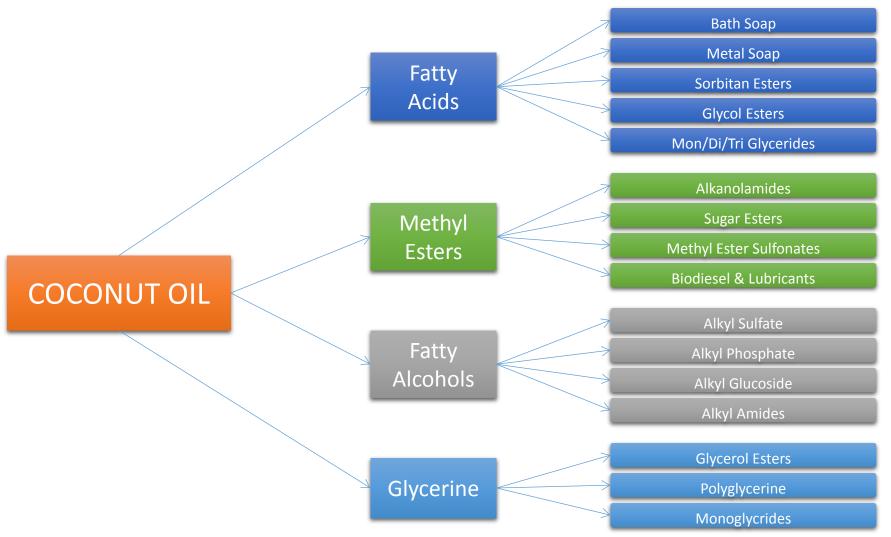
Coconut Oil vs Major Oils





Oleo Chemicals Value Addition Chart for Coconut Oil





Source: ASEAN Oleochemicals Manufacturers Group & Philippines Oleochemicals Manufacturers Association

Negative Campaigns against Coconut Oil



- APCC Rebuttal Papers were issued against the American Heart Association's Presidential Advisory (June 2017) & Karin Michels' malicious & false statement (July 2018).
- Tarawa Accord (October 2017) signed by APCC countries to join hands in promotion of the goodness of coconut and prepare to collaborate in international studies still required to be concluded
- Joint Communique signed in Malaysia Session (September 2018). Community taking a stronger stand against negative campaigns including legal recourse.
- APCC Panel of Experts preparing now to meet FAO in Rome, December 2018 regarding warnings against coconut oil.
- Collaboration encouraged amongst APCC institutions on clinical studies

Value Chains



'The Sea Change'



Coconut Milk



Coconut Water



Virgin Coconut Oil



Coconut Sugar



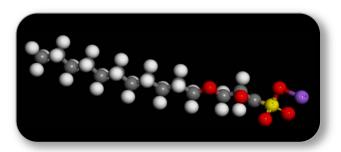




Auto Parts



Coconut Diesel



Coco- & Oleo Chemicals

The Coconut '*Come-Back*'

1993 *2*017

1	\sim	-	\sim	nem	ادعا	_
⊥.	U	ישו	u	16111	ıcaı	Э.

- 2. Glycerine
- 3. Fresh coconuts
- 4. Matured coconuts
- 5. Coconut seedlings
- 6. Bukayo
- 7. Coco Cream Powder
- 8. Coconut Milk
- 9. Frozen coco meat
- 10. Kopyor/Makapuno
- 11. Coconut vinegar
- 12. Nata de coco
- 13. Ubod
- 14.Coco acid oil
- 15. Alkanolamide
- 16. Paring oil
- 17. Coco coir waste
- 18. Coco coir fiber
- 19. Coconut water
- 20. Coco husk
- 21. Coco husk chips
- 22. Coco chips
- 23. Coco lumber
- 24. Coconut shell
- 25. Coconut shell charcoal powder
- 26. Toilet/Bath soaps
- 27. Husk nuts
- 28. Laundry soap
- 29. Shortening

1. Oleo chemicals

- 2. Glycerine
- 3. Fresh coconuts 55. Coconut flour products 31. Coco cutlery
- 4. Matured coconuts 32. Coir bullet proof vest 56. Coco Hostorium juice
- 5.Coconut seedlings 33. Coco Jam 57. Coco Mats
- 34. Spec Creamed Coconut 58. Coco Belt 6. Bukayo
- 7. Coco Cream Powder 35. Coco Hydro Water 59. Coco Vest
- 8. Coconut Milk 9. Frozen Coco Meat 37. Coco Fiber Dust
- 10. Kopyor/Makapuno
- 11. Coconut Vinegar
- 12. Nata De Coco
- 13. Ubod 14. Coco Acid Oil
- 15. Alkanolamide
- 16. Paring Oil
- 17. Coco Coir Waste
- 18. Coco Coir Fiber
- 19. Coconut Water
- 20. Coco Husk
- 21. Coco Husk Chips
- 22. Coco Chips
- 23. Coco Lumber
- 24. Coco Shell
- 26. Toilet/Bath Soaps
- 29. Shortening

- 30. Coco furniture

60. Coconut wines

62. Coir Pads & Liner

64. Coco Husk Cubes

66. Hydrogenated C/Oil

63. Coir Doormats

67. Coconut Syrup

69. Coconut shell oil

72. Bio Fuel products

74. Coconut sugar

76. Coco artifacts

77. Coco Art & Craft

78. Coco Fibre Shoes

73. Coco pith products

70. Coconut water blends 91. Infused oil

75. Coco sugar 3-1 Coffee 96. Coco wood panel

61. Coir Twine

- 36.Coco Soy Sauce
- 38. Coco Shell Powder 39. Coco Shampoo
- 40. Coco Wood Pallet 41. Margarine
- 42. Coconut Flour
- 43. Coconut Milk Powder 68. Charcoal briquette 44.Coconut Liquor
- 45. Coco Handicrafts
- 46. Grated Coconut Meat 71. Coconut milk blends
- 47. Coconut Honey
- 48. Coir Net
- 49. Soap Chips
- **50. Virgin Coconut Oil**
- 51. Coconut sugar
- 52. Neera fresh
- 25. Coco Charcoal Powder 53. Neera products
 - 54. Coco Culture
- 27. Husk Nuts
- 28. Laundry Soap



81. Coconut Vodka

82. Coco spirits

83. Coco Fabric

85. MCT oil

89. Lip Balm

84. Coir portraits

86. Laurin MCT Boost

87. Laurin MCT Brain

88. Insect Repellent

90. Charcoal T/paste

92. Roller Perfume

93. VCO capsules

95. Coco veneer

94. VCO by products

97. Organic fertilizer

+ 100s more each year

Value Chain Studies



With emergence of high value products it necessitated a closer look at value chains to determine if and how returns could be maximized to farmers. Recent studies:

- Coconut Value Chain Review done for ACIAR on Pacific Coconut Industry Chain
- Smaller area focused studies e.g. 'Value Chain Analysis of coconut in Orissa'
- EU funded CIDC (Caribbean) 2016 study led by CARDI and ITC "CONNECTING TO THE WORLD MARKET THROUGH REGIONAL VALUE CHAINS: Partnership Opportunities in Coconut Value Chain for the Small Caribbean Economies. Field interviews: DR, Jamaica & Guyana. Phone interviews with 7 other countries
- EU funded CIDP (Pacific) 2017 Coconut Value Chain Workshop held in Fiji led by SPC. APCC participated. Reports are already distributed.
- ASEAN Secretariat conducted coconut value chain workshop in Yogyakarta 24-26 October 2018 (next week). APCC participating.
- CABI & ICC could document more accurate supply and value chains with the collective expertise

Chain Studies Outcomes



- Position farmer well to produce in cost-effective manner cost of production below selling price.
- Access market and sell produce at viable prices two key elements that sustain production are 'Marketability & Profitability'.
- Coconut farmers are 'price-responsive'. They easily turn to other activities waiting for the price to go up again.
- Small holdings below 1 hectare in size will always sell fresh coconuts (young or mature) directly at wet market, to a buyer or try to make copra with mature nuts
- Value addition initiatives by private sector industry keeps fresh coconut markets open for small famers.
- India's Farmer Producer Organizations (FPO) initiative of CDB India has progressed well in some areas. CPCs are in modern processing facilities for high value products. Example of mobilizing farmer groups towards value addition hence maximize returns
- Enabling environment to be created by Government

Benefit to Farmers



- Produce and related products should be:
 - ✓ MARKETABLE
 - **✓ PROFITABLE**
- Value of one coconut should increase with switch to high value products
- Buyers, processors, exporters share their success through:
 - ✓ Fair trade practices
 - √ maximizing returns to farmer as supplier of raw material
 - ✓ Upstream involvement as part of social obligation e.g. in replanting projects
- Successful Farmer Producer Organizations needed to create synergistic networks and improved accessibility both ways for services
- Government policies and program interventions improved to serve farmers

Food Chains



Mature Coconut

Home consumption | Copra | White copra | Edible copra (ball copra) | Coconut oil from Copra | RBD oil from CNO | Coconut oil rom White Copra | Desiccated Coconut | Coconut Milk (Liquid/Cream/Powder) | Virgin Coconut Oil | Coconut Water | Nata de coco from mature nut water |

Coconut Oil (Extracted from Copra)

• Farmer Copra Buyer [Oil Miller] Processor Trader/Importer Market Consumer

Desiccated Coconut

• Farmer Buyer [Equipment] Processor [Certifier] Market Consumers

Coconut Milk (Liquid/Cream/Powder)

• Farmer Buyer [Equipment] Processor [Certifier] Market Consumers

Virgin Coconut Oil

• Farmer Buyer [Equipment] Processor [Certifier] Market Consumers

Young Fresh Coconut (6-9 months)

• Home consumption | Packaged Coconut Water Market | Beverages Blend Market

Coconut Sap

• Fresh Neera drink | Coconut sugar | Coconut honey | Coconut vinegar | Alcohol

Non-Food Chains



Mature Coconut

• Husk | Raw Fiber | Mattress Fiber | Coir products | Shell Charcoal | Activate Carbon | Artifacts

Husk Utilization

• Farmer Husk sale Primary process Raw fiber sale Process/End Products Market Consumer

Shell Utilization

• Farmer Shell sale Make/Sell Charcoal Process/End Products Market Consumer

Industrial Oil Utilization

• Farmer Copra sale Process/Sell Oil Trader/Buyer Process/End Products Market Consumer

Coconut Trunk (Log)

• Coco log | Coco timber | Coco furniture | Coco artifacts | Household utensils

Coconut Leaves & Fronds

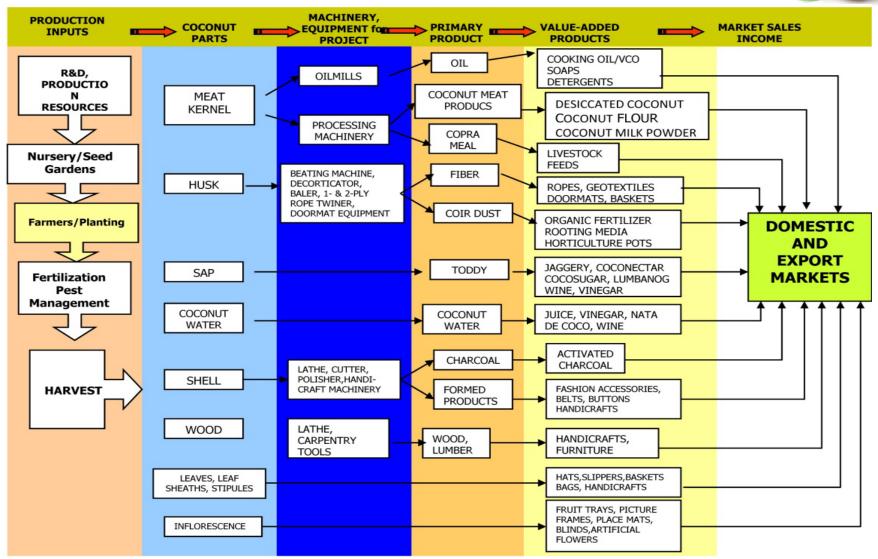
Artifacts | Household implements (brooms) |

Coconut Roots & Stump

• Traditional medicines | household utensils | household furniture

Supply Value Chain





Trade & Market Outlook



Desiccated Coconut



- DC is a fully developed coconut product manufactured by countries. World demand is over 400,000 MT annually with nearly 110 foreign markets destinations.
- Philippines, Indonesia & Sri Lanka are major producers. Aggregate 2017 exports at 242,461 MT, 10% higher than 2016 at 219,644 MT.
- Major destinations are USA, UK, France, Belgium, Netherlands, Russia, China,
 Canada, Australia, Turkey, Japan, NZ, Korea, SA & others increasing purchase.

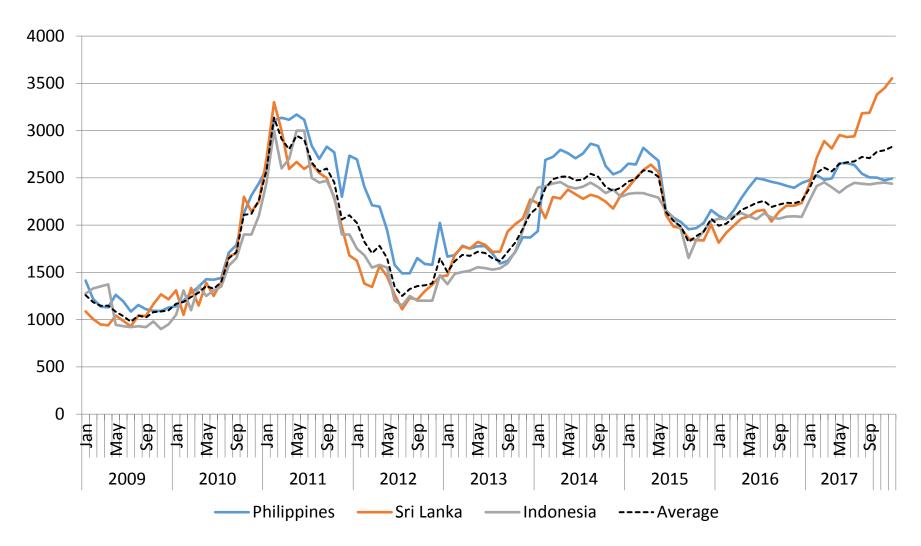
Country	Average Price/MT
Philippines	US\$2,537
Indonesia	US\$2,409
Sri Lanka	US\$2,898





Average Monthly DC Export Prices 2009 - 2017 [US\$/MT]





Virgin Coconut Oil



- Fastest growing product with high value niche market.
- Philippines export grew from 103 MT in 2003 to 36,332 MT in 2015. Reduced in 2017 to 27,000 MT.
- Philippines export earnings from US\$8.34 Million in 2011 to US\$129 Million in 2015. Reduced in 2017 to US\$92.4 Million.
- Consumers and public is increasingly becoming aware of VCO health benefits.

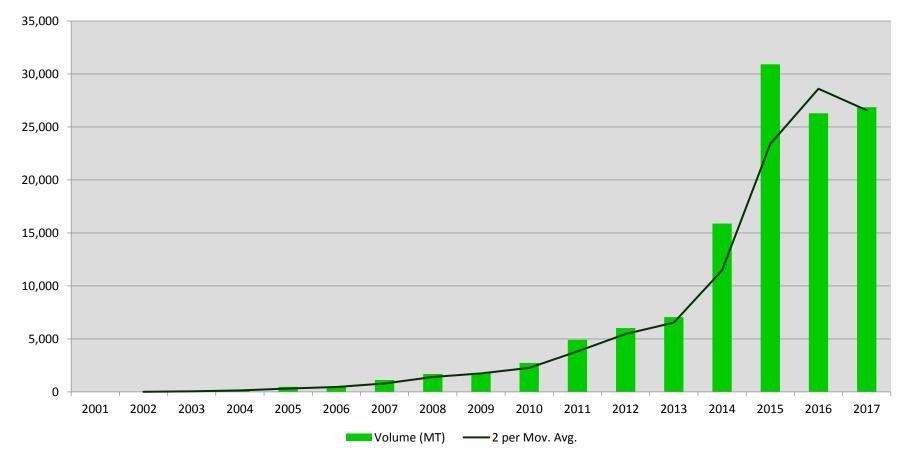


Philippines VCO Exports

Major Producer 2001-2017 (MT)



Main export destinations of USA, Germany and Canada at 42%, 16% and 12% respectively. Balance shared mostly by Germany, Japan, UK, Belgium, China, Singapore, Australia, Malaysia and Taiwan. FOB Manila VCO prices range US\$2.9 – 4 per Liter. VCO highest volume of non-traditional products.



Coconut Water



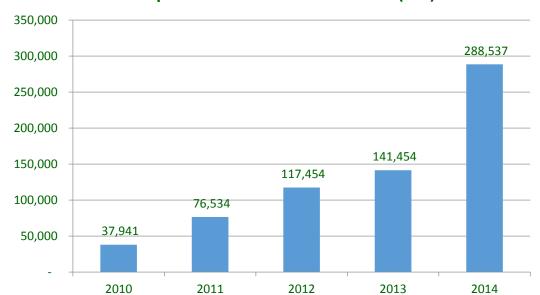
- Fastest growing new beverage with rapidly expanding market, increasing growth at 150% annually. Brazil is leading exporting country. Annual increases in production are reaching 150% each year. USA sales at over US\$350 million annually.
- The 'fluid of life' contains proteins, amino acid, sugars, vitamins, biological growth factors and enzymes promoting anti-aging, healthy cell growth and rehydration.
- Philippines export volume grew from 647,000 litres in 2008 to 85 million litres in 2017.
 Major export destinations being USA followed by and Netherlands. Other destinations are Canada, Australia, Singapore, China & UAE
- Export Prices increased from US\$ 0.8/litre in 2008 to US\$ 1.07/litre at end of 2017



Coconut Water Market



US Import Volume of Coconut Water (ton)



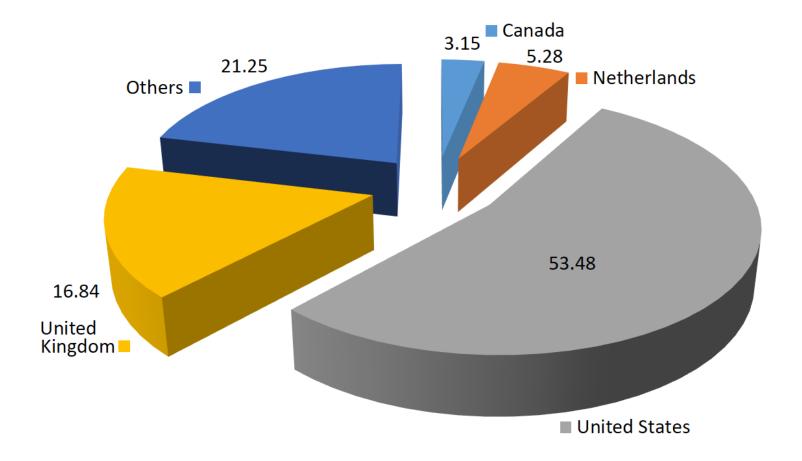
Country of Origin	%
BRAZIL	38
THAILAND	32
PHILIPPINES	8
SINGAPORE	6
SOUTH AFRICA	5
MALAYSIA	3
SRI LANKA	3
OTHERS	5





Philippine Coconut Water Export Destinations





Coconut Flour



- Flour is a by-product of the VCO processed from its residue
- Food-grade product similar in consistency with wheat flour
- Delicious, gluten-free with high dietary fibre for good health
- Philippines is leading exporter





Coconut Milk/Cream/Powder



Leading producers are Indonesia, Philippines, Sri Lanka, Thailand, Malaysia and India

Products	Year (metric tons)			
	2012	2013	2014	2015
Coconut Milk/Cream/Powder	160,139	185,894	229,511	245,447



Coconut Sap-Based Products



- Categories and use of sap-based products is expanding and growing
- Fresh Neera, Sugar, jaggery, vinegar, honey, syrup are main by-products
- Health benefit of low glycemic index at 35 is key to promotion of the products
- Major producers are Indonesia, Thailand,
 Philippines increasing in India & Sri Lanka
- India declared Neera as National Product the healthiest most freshest drink on earth, marketable/profitable for farmers

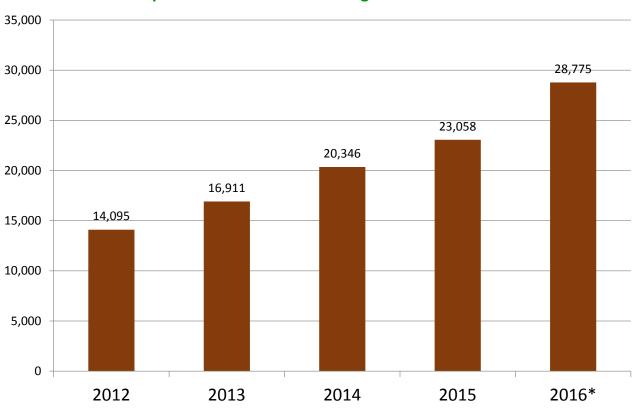




Coconut Sugar



Export Volume of Coconut Sugar from Indonesia



^{*}January-September 2016

Country of Destination	%
USA	68
Netherlands	7
South Korea	5
Malaysia	4
Australia	3
Singapore	3
Others	11



Coconut Shell Charcoal & Activated Carbon(AC)

Philippines, Indonesia, India & Sri Lanka are leading

 World demand for AC expected to rise at 10.3% annually to 2.0 Million MT in 2017

producers/suppliers

- 2016 Shell charcoal export volume at 288,375 MT & AC at 197,832 MT
- A major use is as agent for purification of drinking water, medicines, sugars etc.
- Japan and China import coconut shell charcoal from Indonesia to produce AC.



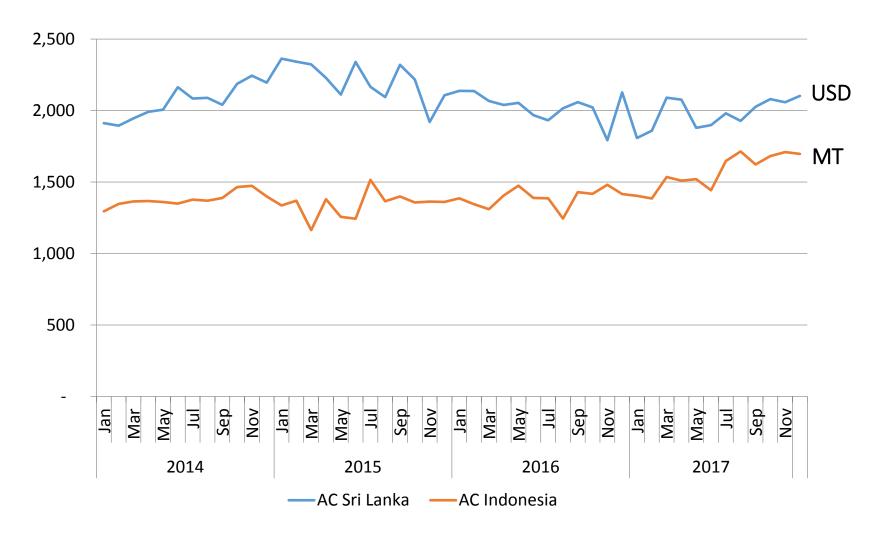






Price Movement of Activated Carbon 2014 - 2017





Coir products









- India and Sri Lanka continue as two major producers & exporters. Total export volume in 2017 at 1.3 M MT. Indian export volume increased by 27% from 752,020 MT in 2015/16 to 957,045 MT in 2016/17
- Coco pith (490,552 MT) and coir fibre (370,357 MT) are the largest products exported by volume from India.
- Sri Lanka exported 202,720 MT of Coco pith in 2017, increase from 2016
- Export destinations China, USA, Netherlands, UK (UK is fastest growing market for coco pith)
- Sri Lanka export of coir matting increased by 24% in 2015

Challenges



Aging & Senile Palms



- Aging palms at over 60 years old with decline in yield by over 40% in most instances
- Global average at 50% of palm population are senile
- Pacific region senile palm population is over 70%
- Palms too tall to harvest
- Very little effort to replenish plantings
- A major constraint would be access to adequate supply of good quality planting material



Status of Existing Plantings

Country	Coconut Area (Hectares)	Productivity (Nuts/Ha)	Estimated senile palms (50%)
Fed. States of Micronesia	18,000	2,197	1,080,000
Fiji	62,000	2,387	3,720,000
India	2,141,000	10,119	128,460,000
Indonesia	3,610,000	4,530	216,600,000
Kiribati	20,000	2,730	1,200,000
Malaysia	88,000	7,464	5,280,000
Marshall Islands	8,000	4,375	480,000
Papua New Guinea	221,000	6,710	13,260,000
Philippines	3,502,000	4,196	210,120,000
Samoa	99,000	2,697	5,940,000
Solomon Islands	38,000	2,631	2,280,000
Sri Lanka	440,000	6,623	26,400,000
Thailand	206,000	4,859	12,360,000
Tonga	31,000	2,423	1,860,000
Vanuatu	92,000	4,512	5,520,000
Vietnam	159,000	7,834	9,540,000
Jamaica	16,000	6,156	960,000
Kenya	177,000	1,462	10,620,000
	10,928,000	Average 4,661	655,680,000

Pests & Diseases



- Lethal Yellowing is a global threat
- Rhinoceros Beetle in Pacific
- Palm Weevil in many countries
- Mite pests affecting coconuts
- Root Wilt & Weligama disease
- Bogia Disease & Kadang kadang





Climate Change & Adverse Weather



- El Niño, Prolonged Drought & Dry Weather Conditions
- Cyclones and Typhoons at 200-300 km per hour speed
- Global warming
- Sea and water level rising
- Frequent Flooding

Scenario

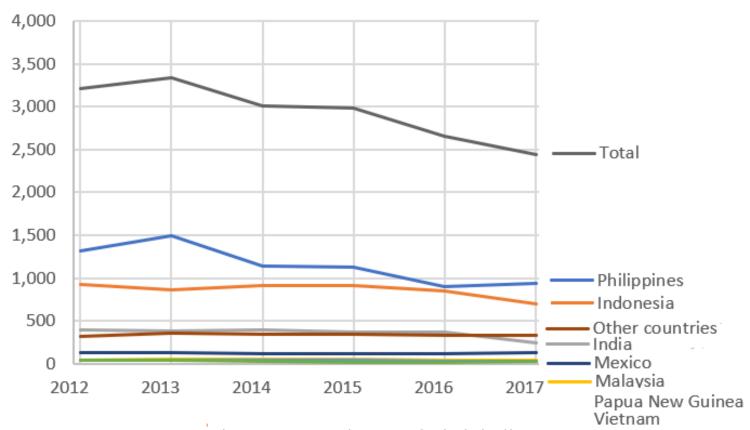


Market Performance



CNO Export 2012-2017

('000 MT)



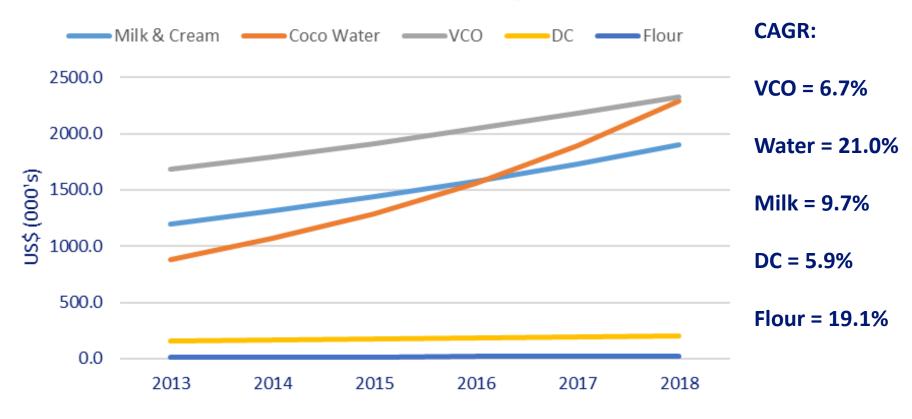
- CNO continues as the major product traded globally.
- Philippines & Indonesia contribute 67% (1.61M MT)

Source: Oil World, UCAP

Market Performance



Global Coconut Market Values By Product

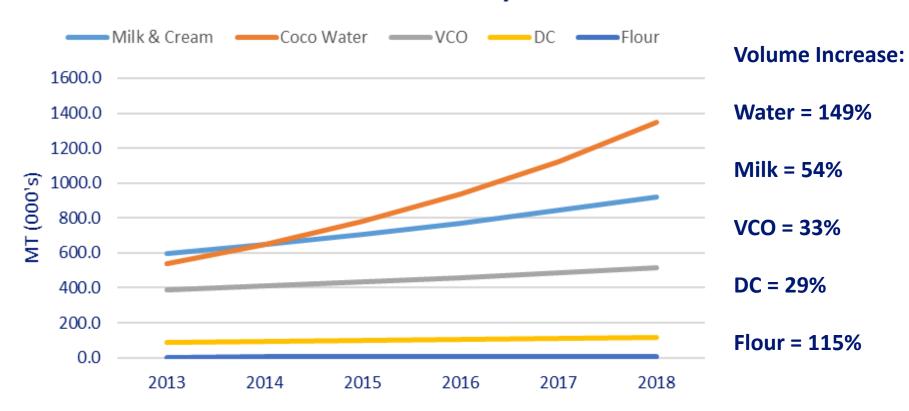


Coconut 'Liquid' products will see substantial value growth

Market Performance



Global Coconut Market Volume By Product



Global Coconut Water volumes will show the largest growth

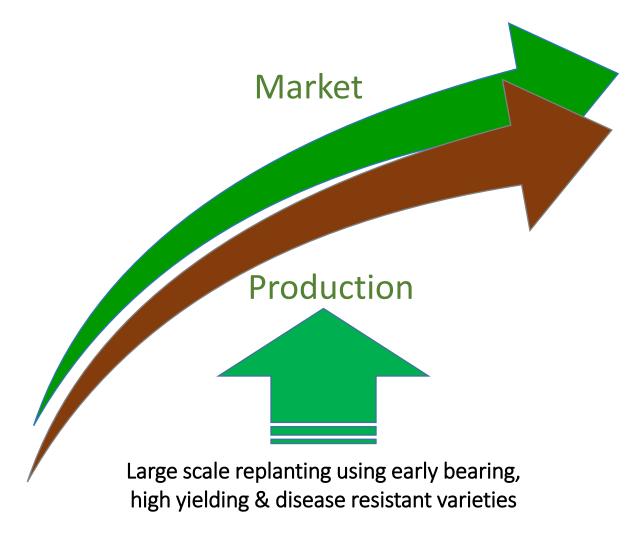
Coconut Market vs Production Oropeza chart **Market Production**

APCC data indicate >50% of trees are senile with declining yield

Coconut Market vs Production

Oropeza chart





Going forward







- ✓ Outlook of markets for higher value products is <u>extremely</u> positive, however, competition for raw material is high amongst products
- ✓ Product development, diversification, quality including R&D requires expansion
- ✓ Major challenges are threats to the coconut tree that include senility, pest/disease infestation, adverse climate change effects and lack of investment in planting

Conclusion



Technical Cooperation





The broad forms of cooperation referenced in MoU between CABI and then APCC of April 2018 are:

- Facilitate scientific exchange in terms of personnel and visits;
- Conduct Research and Development in areas of mutual interest;
- Jointly seek funds for projects; and
- Strengthen capacity development and publication

Way Forward





- The socio-economic welfare of farmers is a Mandate embraced and shared by both CAB International & the International Coconut Community;
- ➤ ICC and its Member Countries projects at national and regional level. E.g PNG Government fully funding National Biosecurity Plan project proposed with CABI
- ➤ ICC Secretariat pursue impact publications to reach farmers with important message on aspects of coconut development. E.g. IPM, Climate Smart & Organic Coconut Farming, Value Addition, Intercropping etc.
- ➤ Video promotion material proposed on themes of 'Coconut Farmers Need Not Be Poor' and 'Wealth Under the Coconut Trees'. 5 country experiences to be shared.
- Other important projects interventions



I thank you all for your time