

# 2016 BUSINESS AND BIODIVERSITY FORUM

## *Mainstreaming Biodiversity: Opportunities for Businesses*

### *Session E*

#### *Supply Chains and sustainable production and consumption*

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President, Saraya Co. Ltd

# Main Topics

1. BCT(Borneo Conservation Trust)
2. RSPO
3. Create More Values by the Palm Mill

# Palm Oil is used in many food products

## Foods



## Products



90% of Palm Oil is used for food

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# SARAYA Soap and Detergents

# Consumer

## B to B



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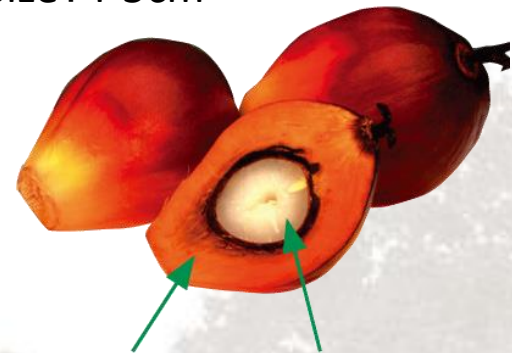
Oil palm



Oil palm fruits



Size : 4-5cm



Palm Oil

Palm Kernel oil

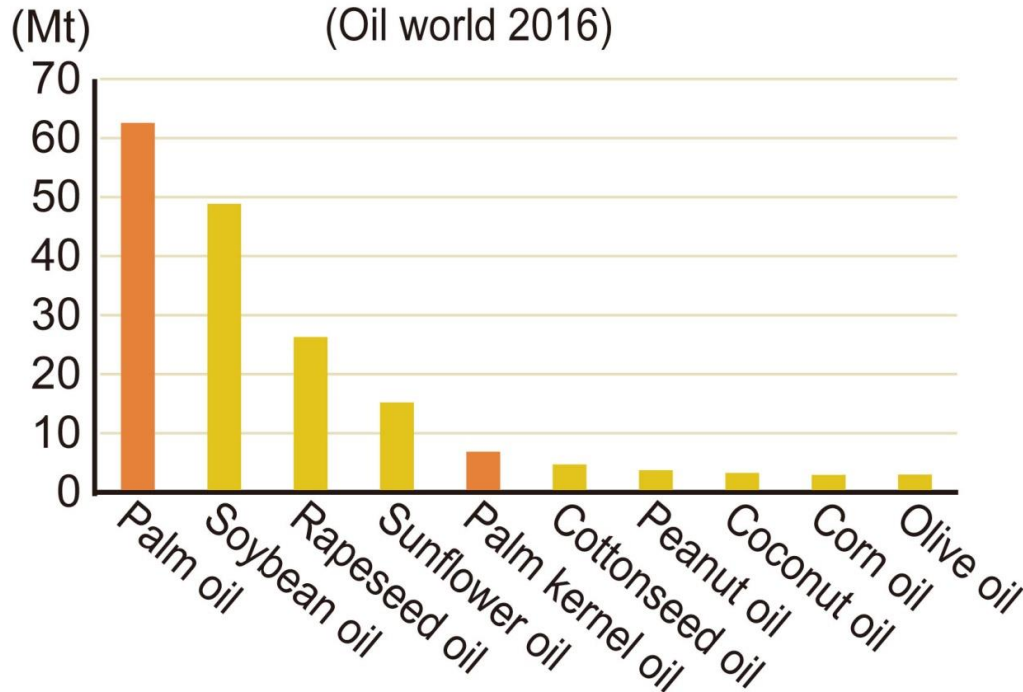
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# The production of main 10 vegetable oils

## Worldwide vegetable oil production

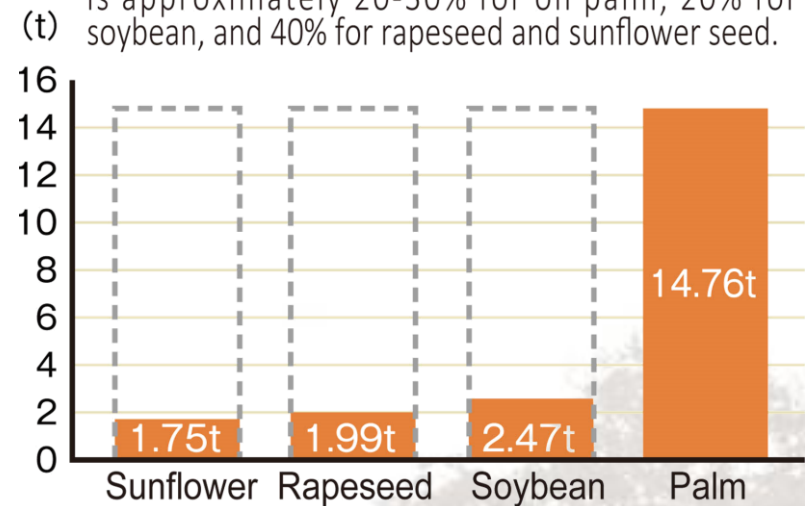
(Oil world 2016)



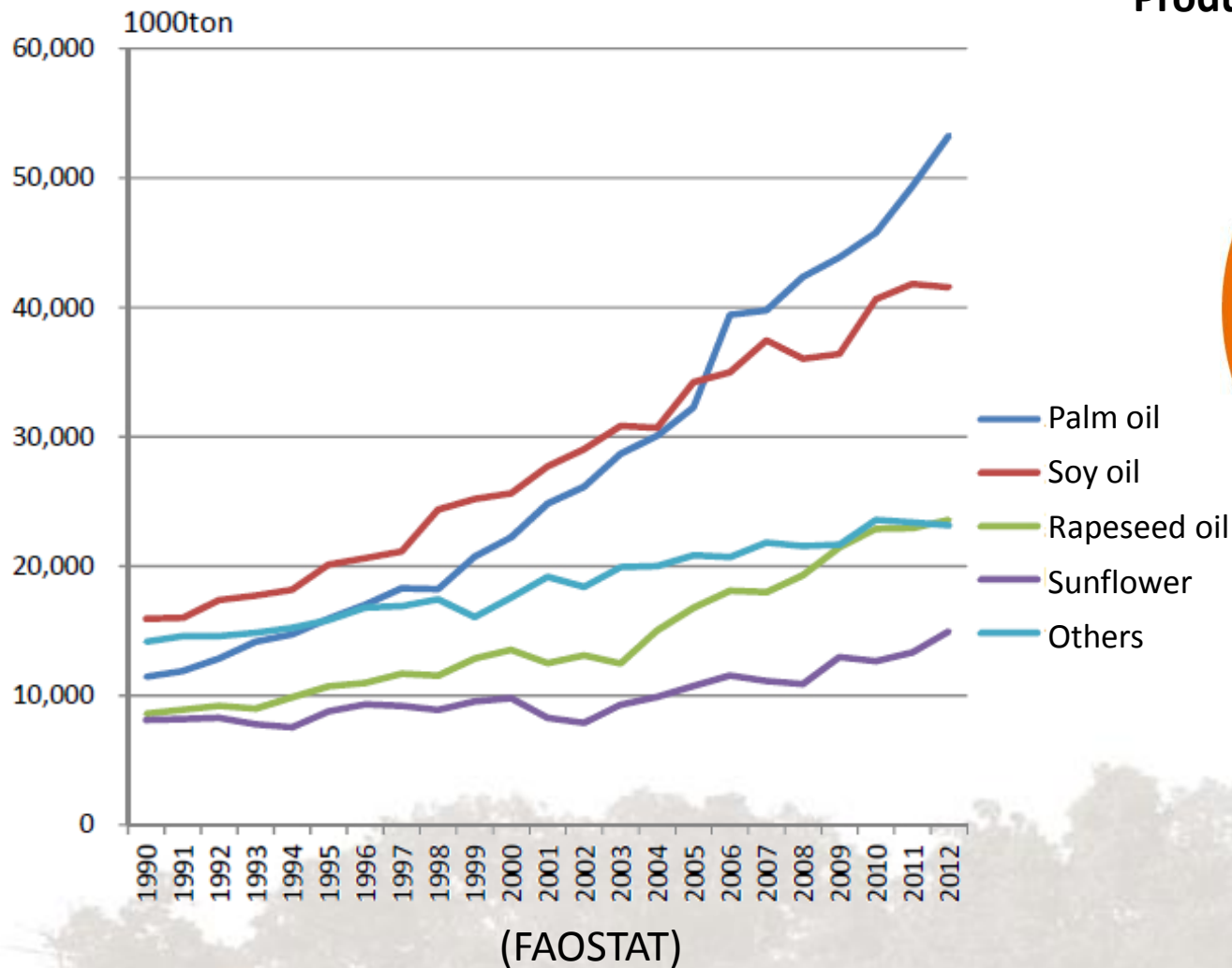
## Average yearly harvest yield per hectare

(FAO Statistics Division, May 2015)

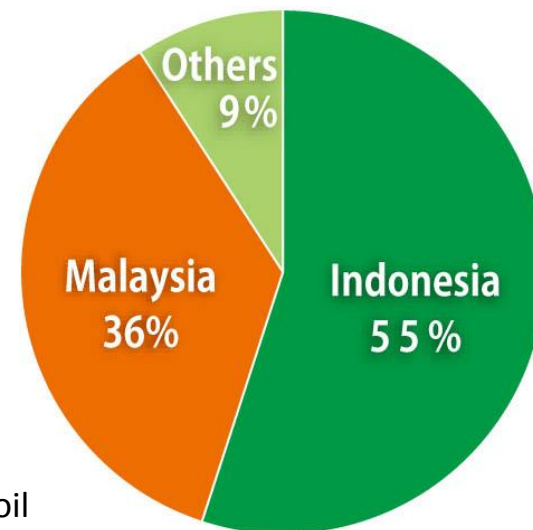
Stated yields represent bulk fruit harvest. Oil content is approximately 20-30% for oil palm, 20% for soybean, and 40% for rapeseed and sunflower seed.



# Global vegetable oil production



## Production of palm oil country

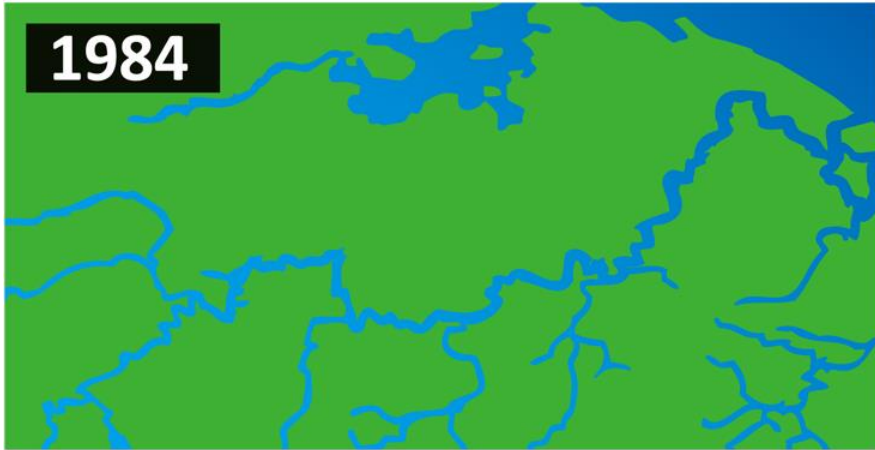


Oil world Annual 2016

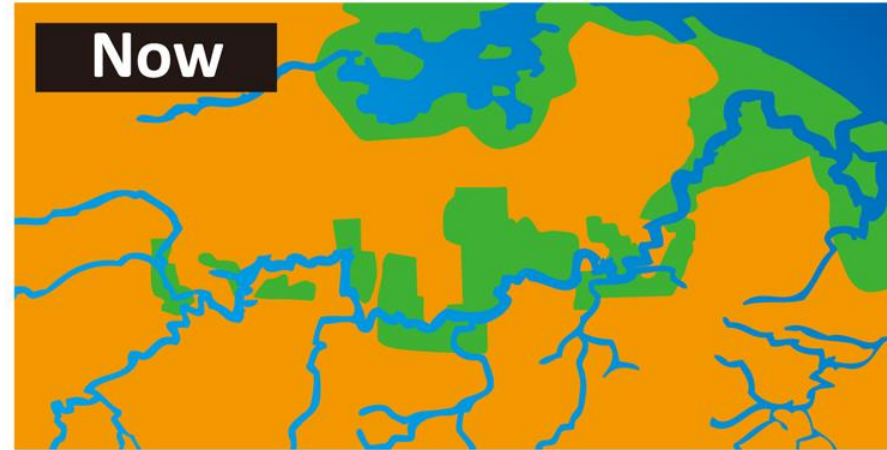


# Plantation take over

1984



Now



Green areas represent rainforest. Around 30 years ago this entire area was covered in native rainforest. It was paradise for wildlife.

Orange areas represent palm plantations. Now there is very little rainforest remaining, limited to a small area along the main river.



# RSPO Roundtable on Sustainable Palm Oil

Started in Dec.2003 by 7 members

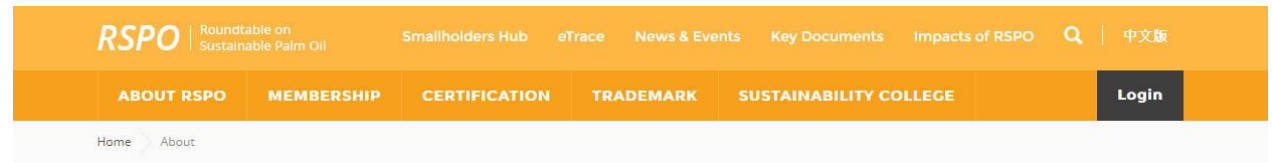
SARAYA Joined on Jan.17, 2005

RSPO members

**3,080**

Trademark Licenses  
issued by RSPO

**429**



## ABOUT US



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**SARAYA contributes 1% of  
“Happy Elephant” and  
“Yashinomi detergent” brands  
products in support of the  
Borneo rainforest**



Happy Elephant

Yashinomi detergent

# Borneo Conservation Trust Japan



BCT is officially approved as the Trust  
in Sabah Malaysia on Oct. 16, 2006



# Aug.1, 2004

TV Asahi program “The tear of a small elephant” brought awareness of the suffering of the elephants.

素朴な宇宙船地球号



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# Research Mission done by Mr.Nobuo Nakanishi in Nov, 2004















Rescue Members of Sabah Wildlife Department

# Borneo Conservation Trust

**Board Meeting of BCT on Sep.12. 2006, Kota Kinabalu,**

**BCT was approved in next month Oct.2006**



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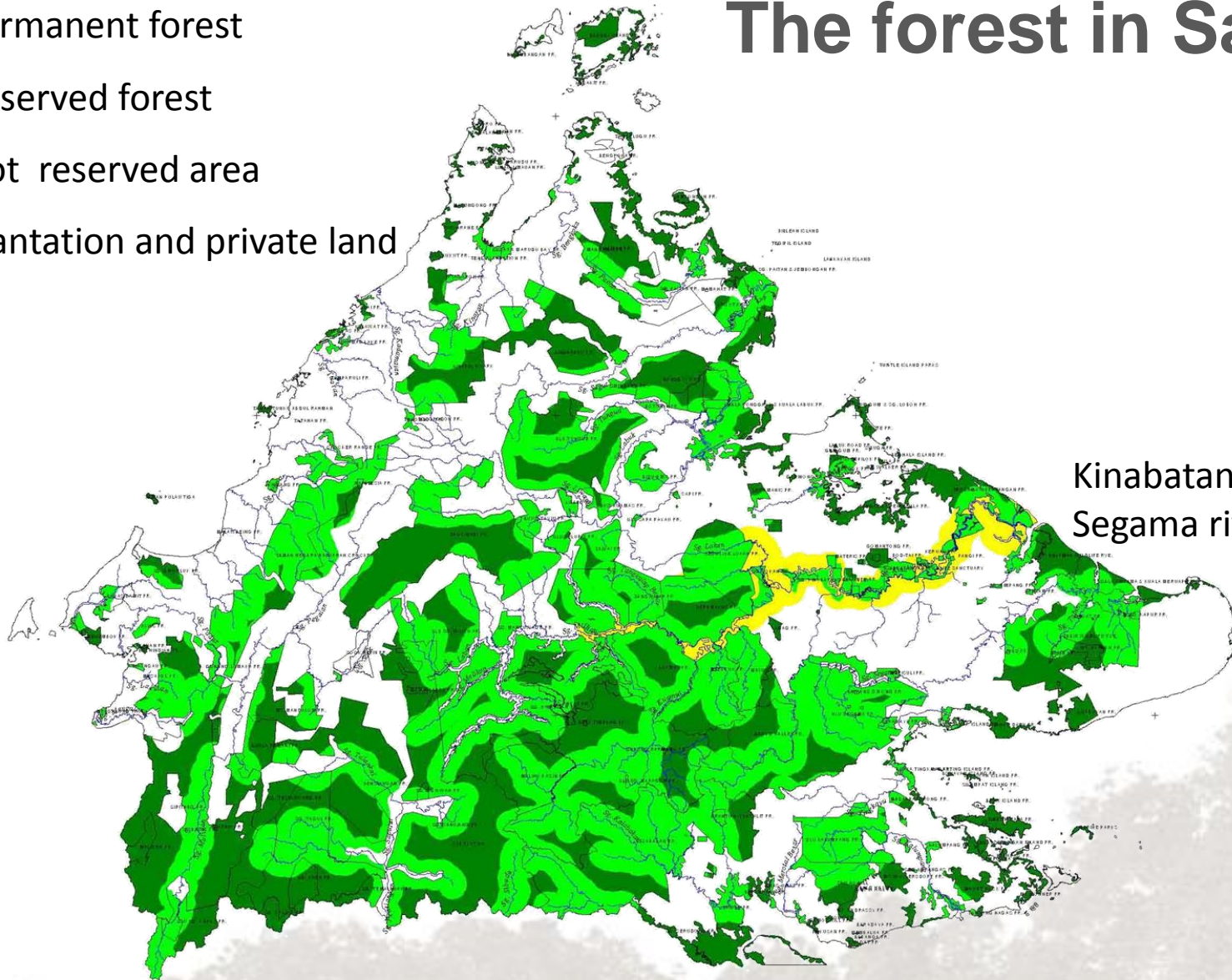
**Continue the rescue of elephants**

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# The forest in Sabah

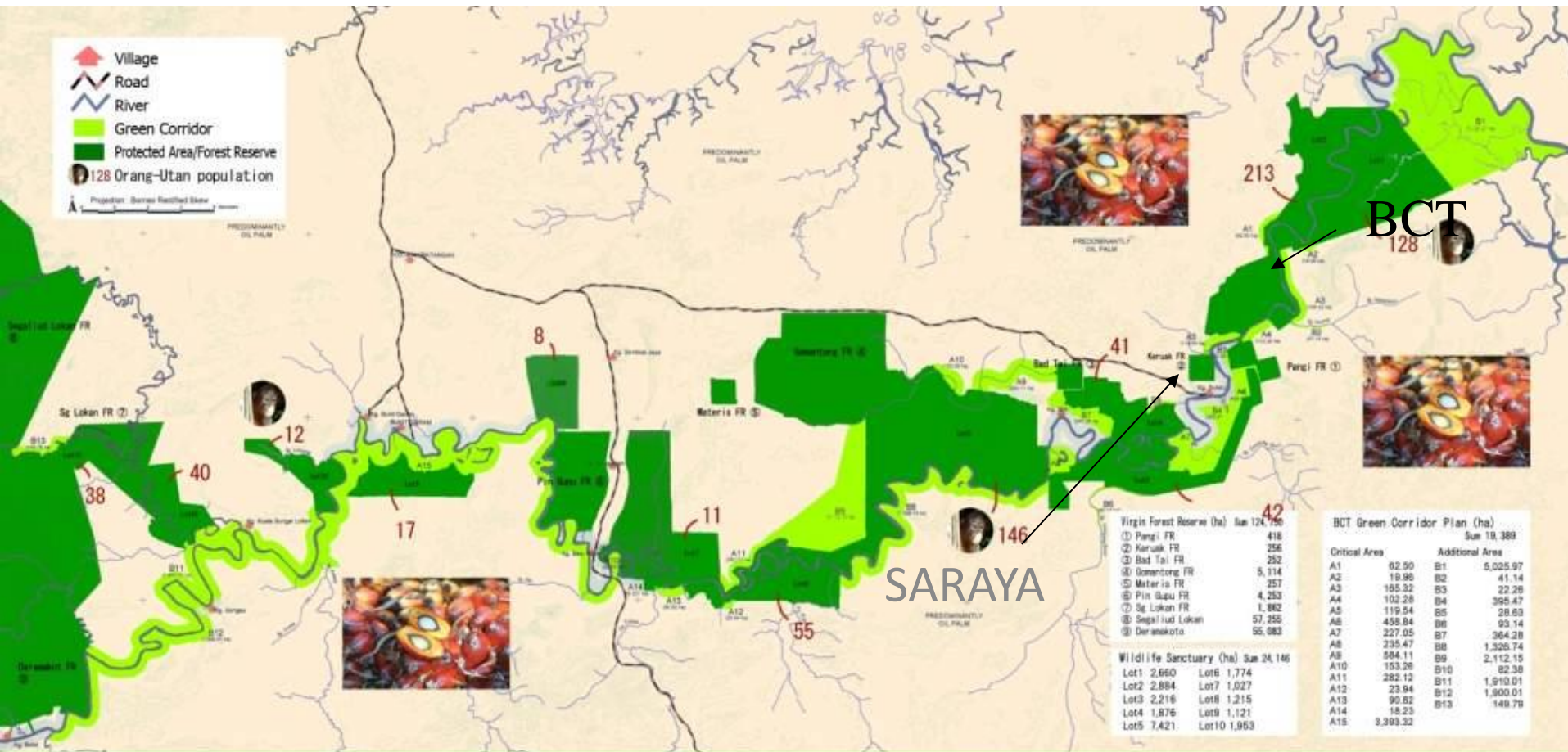
- Permanent forest
- Reserved forest
- Not reserved area
- Plantation and private land



Kinabatangan river  
Segama river



# Green Corridor by connecting the patches Green



The lower Kinabatangan River Region was used to be covered by dense rain-forests which are still home to the Borneo Orangutans, the Borneo Elephants and many other animals. However result of vast deforestation, most of the forests are now turned into palm-oil plantations (colored : light pink). As it is shown in the map, the forests marked as Protected Areas and Forest Reserves ( colored : dark green ) are scattered along the river. Since the forests are not connected, the Borneo Orangutans are stuck in one area and unable to move to other areas to meet potential partners for breeding. It is scientifically reported that the Borneo Orangutans in these areas are at risk of extinction in the next 50 years. The Borneo Elephants regularly migrate along the river and they sometimes go into

the palm-oil plantations and local farm lands. Consequently they damage the local crops. This leads to conflicts between elephants and people and as a result adult elephants are shot to death and babies are left to be orphans.

It is an urgent issue to establish the Green Corridor to connect the protected areas so that the animals can move around freely and that will help to conserve the biodiversity upon which they rely.

20,000 ha of land is needed for establishing the Green Corridor. The Borneo Orangutans, the Borneo Elephants and many other animals are in a great danger! Please join us and become a partner to conserve the ecosystems in the Borneo Rain-forest!

source: WWF Malaysia and Hutan







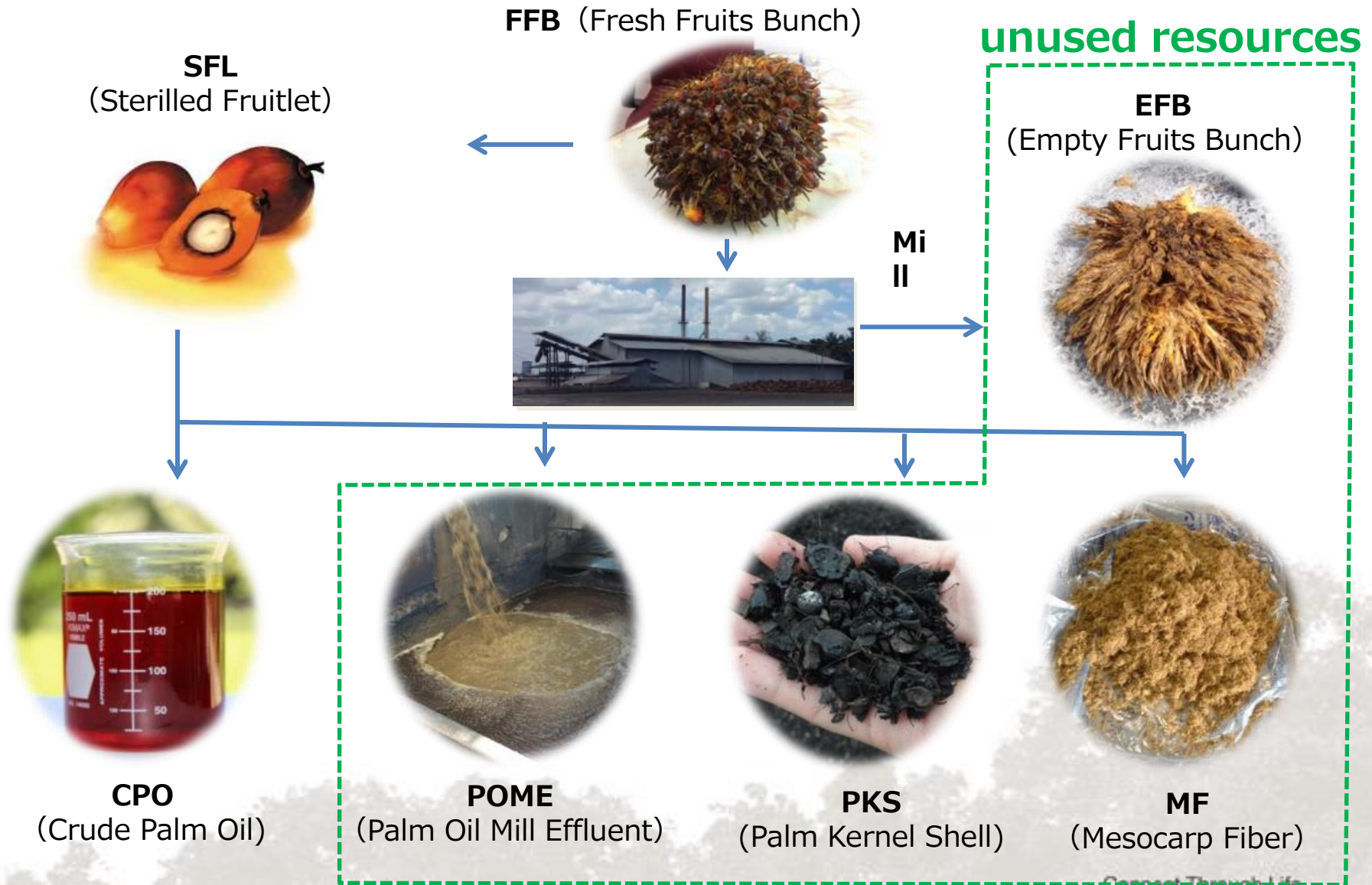
**2<sup>nd</sup> Stage Borneo Elephant Sanctuary  
inaugurated on Sep 19<sup>th</sup>, 2013**





Sep.19<sup>th</sup>, 2013 Borneo Elephant Sanctuary

# Renewable energy creation in the plantation: The biomass







**MF**  
(Mesocarp Fiber)



**EFB**  
(Empty Fruits Bunch)



**POME**  
(Palm Oil Mill Effluent)



**PKS**  
(Palm Kernel Shell)

【そのまま利用】



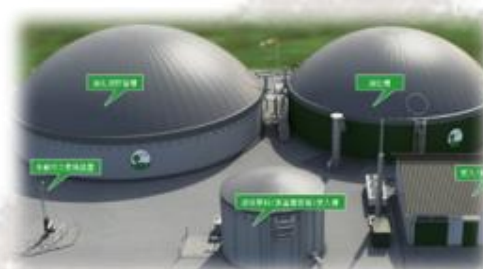
**Pellet**



**Briquette**



**Baler**



**Biogas**

# Economic Effects of New Resource Creation (A)

In a Case of the Mill of 60t/h (FFB), about 10,000ha

Business As Usual	Item	Volume	Use at Mill	Sales Potential
	EFB	63,360t/y	63,360t/y	0t/y
	MF	39,000t/y	39,000t/y	0t/y
	PKS	15,300t/y	2,160t/y	13,140t/y
	POME	187,100t/y	-	-

Palm Pellet Production		Volume	Use at Mill	Sales Potential
	EFB	63,360t/y	0t/y	63,360t/y
	MF	39,000t/y	16,600t/y	22,400t/y
	PKS	15,300t/y	2,160t/y	13,140t/y
	POME - Electric - Gas - Pellet	187,100t/y	- All Generation All Gas	0MWh/y 0Nm3/y 0t/y

※The purchase period in the FIT scheme is 16 years in Malaysia.



# Economic Effects of New Energy Creation (B, C)

## In a Case of the Mill of 60t/h (FFB) Scales

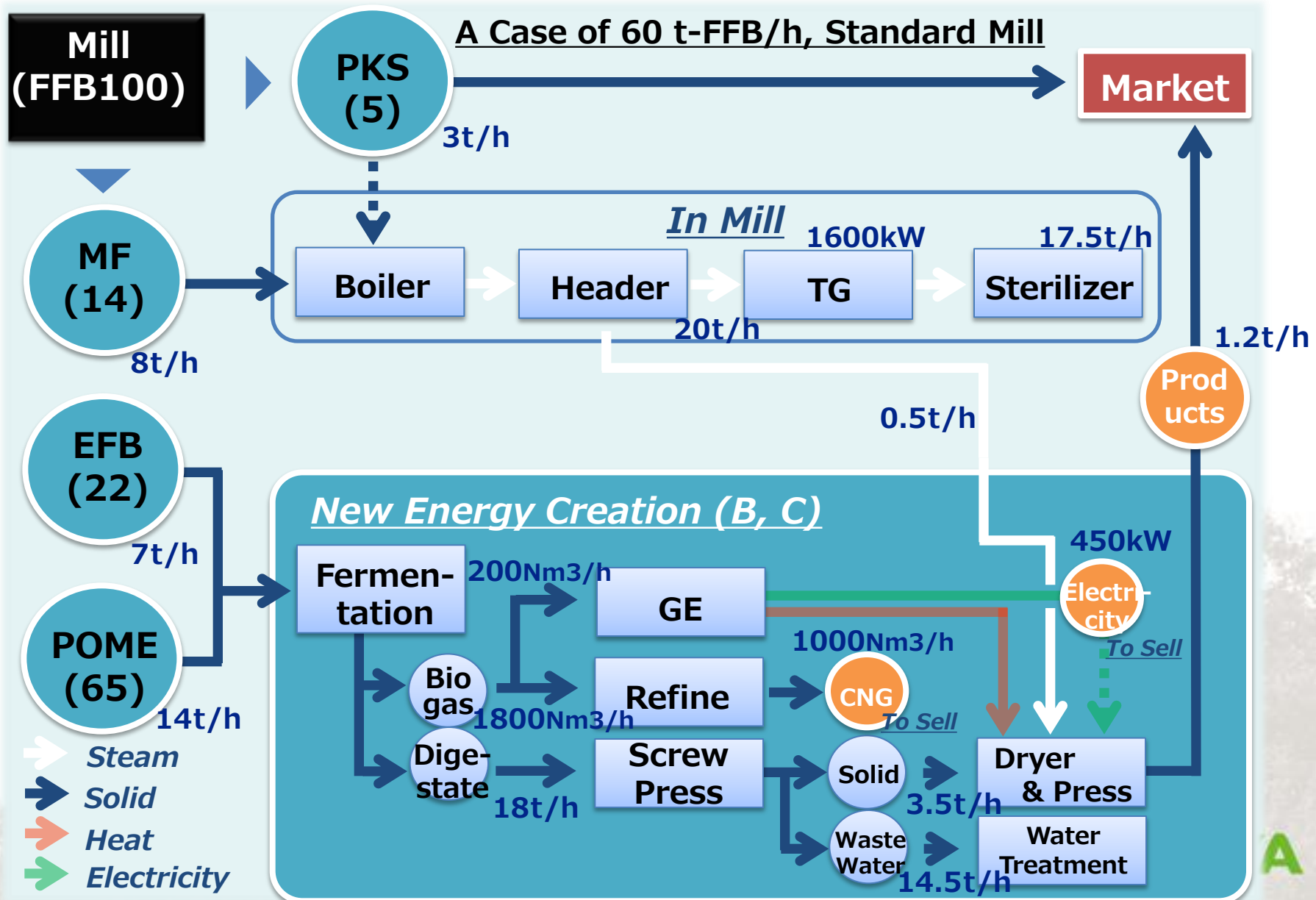
Business As Usual	Item	Volume	Use at Mill	Sales Potential
	EFB	63,360t/y	63,360t/y	0t/y
	MF	39,000t/y	39,000t/y	0t/y
	PKS	15,300t/y	2,160t/y	13,140t/y
	POME	119,136t/y	-	-

Methane Fermen- tation System	Item	Volume	Use at Mill	Sales Potential
	EFB	63,360t/y	63,360t/y	0t/y
	MF	39,000t/y	39,000t/y	0t/y
	PKS	15,300t/y	2,160t/y	13,140t/y
	POME - Electric - Gas - Pellet	119,136t/y	- All Electric Case All Gas Case	51,946MWh/y 8,628,600Nm3/y 10,047t/y

※The purchase period in the FIT scheme is 16 years in Malaysia.

# Proposal of New Energy Creation

## Balance Sheet of the Methane Fermentation System





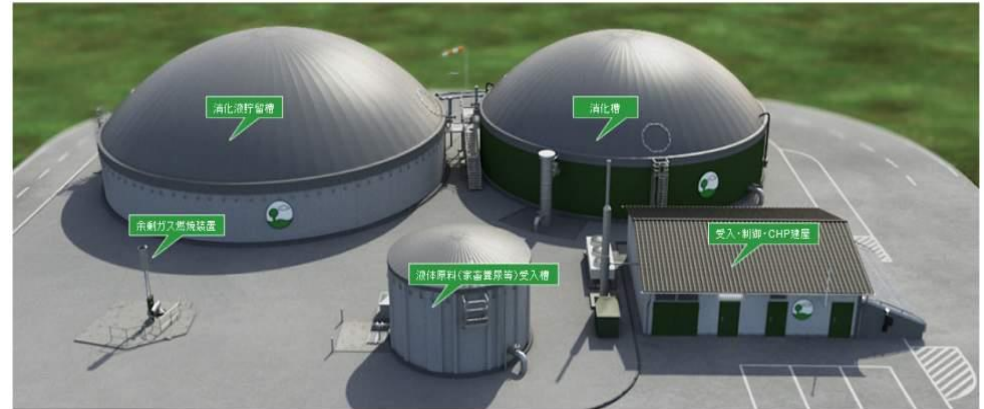
# Product

## Pellet



Size	Energy density
Φ8~10mm	3,800~4,400 kcal/kg

Methane fermentation to create methane gas.



**Conclusion: SARAYA wish to propose a new Criteria for RSPO to reduce methane gas by new fermentation tank and utilize the unused biomass for the pellet. The pilot experiment is now is starting in 2016.**