

SUSTAINABLE PALM OIL BIOFUEL

By:

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OUTLINE



- I. Introduction
- II. Overview of Palm Oil Market:
 - a. Production
 - b. Consumption
 - c. Export
- III. Biofuel Industry Development
- IV. Challenges and Opportunities
- V. Government Policies on Oil Palm Development
- VI. Closing Remarks

I. INTRODUCTION (1)



- Palm oil is the most efficient compared to soybean, rape seed, sunflower → high productivity and low production costs.
- Palm oil is Annual plants (Perennial Crop) that can be grown in almost all developing countries → other vegetable oil crops only grow and produce in developed countries
- Consumption of palm oil in more than 160 countries worldwide.
- Palm Oil Production Indonesia and Malaysia accounted for 86% of world palm oil production.
- Since 2006, Indonesia is the largest palm oil producer in the world (the current production is about 30 million tons)

I. INTRODUCTION (2)



- The function of oil palm estates :
 - Economy, → increase welfare, prosperous people, and strengthening economic structure;
 - Ecology, → carbon fixation, oxygen supply, land and water conservation;
 - Social – culture, → unifying nation.
- Oil palm area in 2014 was 10.95 million ha (46% of total plantation area 23.84 million ha).
- In 1980 oil palm area : 295,000 ha and in 2014 increased to 10.95 million ha, meaning that during 33 years the oil palm area increased 37 times.

I. INTRODUCTION (3)

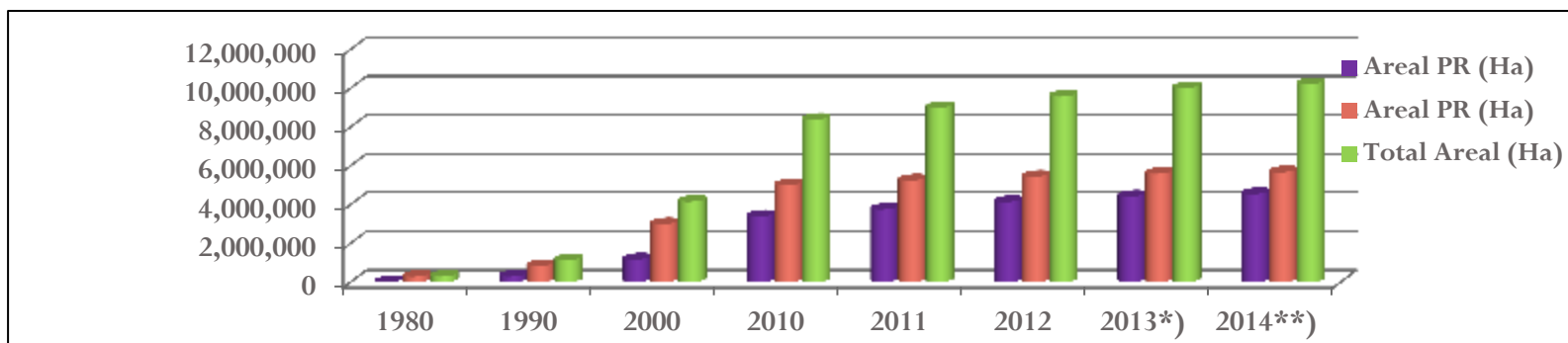


- The oil palm area consists of 4.4 million ha (42%) of smallholders, 728,000 ha (7%), of state-owned estates and 5.4 million ha (51%) of private-owned estates.
- CPO production in 2014 was 29.34 million tons (increased 41 times compared to production in 1980)
- Exports of CPO and its derivatives in 2014 amounted to 22.89 million tons, with a value of US \$ 17.46 billion;
- Besides as a foreign exchange earning, palm oil has a role in employment of about 5.2 million households; raw materials of food, non-food and bio-diesel industries; and also as developing centers of economic growth.

II. OVERVIEW of INDONESIA PALM OIL (1)



2. a. GROWTH OF OIL PALM AREA 1980 - 2014



NO	YEAR	AREA (Ha)					
		PR	%	PB	%	TOTAL	%
1	1980	6.175	2	288.385	98	294.560	100
2	1990	291.338	26	835.339	74	1.126.677	100
3	2000	1.166.758	28	2.991.319	72	4.158.077	100
4	2010	3.387.257	40	4.998.137	60	8.385.394	100
5	2011	3.752.480	42	5.240.344	58	8.992.824	100
6	2012	4.137.620	43	5.435.095	57	9.572.715	100
7	2013	4.356.087	42	6.108.933	58	10.465.020	100
8	2014*)	4.551.854	42	6.404.377	58	10.956.231	100

Remarks: *) provisional figures

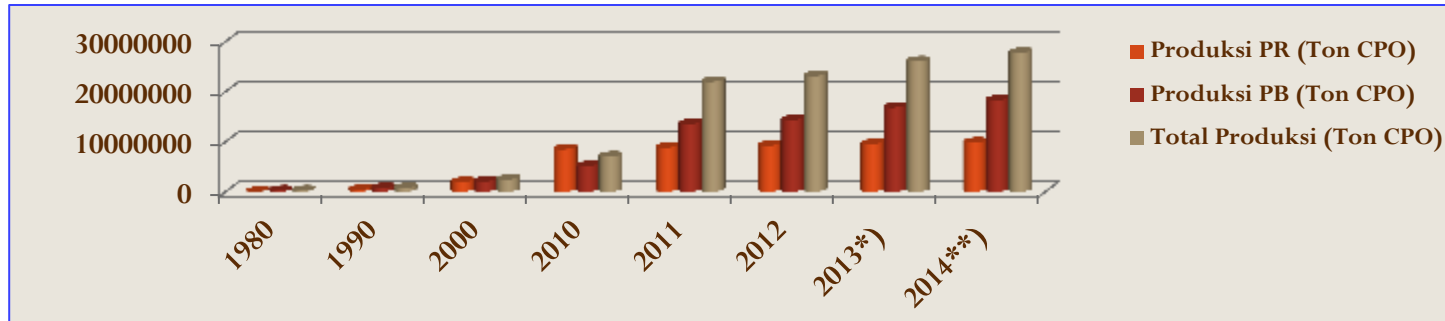
PR = Smallholder PB = Large estate

Sources: Statistic of Estate Crop, MoAgr 2014

II. OVERVIEW of INDONESIA PALM OIL (2)



2. a. PALM OIL PRODUCTION GROWTH 1980 - 2014



NO	YEAR	PRODUCTION (TonS)					
		PR	%	PB	%	TOTAL	%
1	1980	770	0,11	720.402	99,89	721.172	100
2	1990	376.950	15,62	2.035.662	84,38	2.412.612	100
3	2000	1.905.653	27,22	5.094.855	72,78	7.000.508	100
4	2010	8.458.709	38,52	13.499.410	61,48	21.958.119	100
5	2011	8.797.924	38,09	14.298.617	61,91	23.096.541	100
6	2012	9.197.728	35,35	16.817.790	64,65	26.015.518	100
7	2013	10.010.728	36,03	17.771.276	63,97	27.782.004	100
8	2014*)	10.683.286	36,40	18.661.193	63,59	29.344.479	100

Remarks: *) provisional figures
 PR = Smallholders PB = Private and Government estates

Sources: Statistic of Estate Crop, MoAgr 2014

II. OVERVIEW of INDONESIA PALM OIL (3)



2.b. Indonesian Palm Oil Consumption

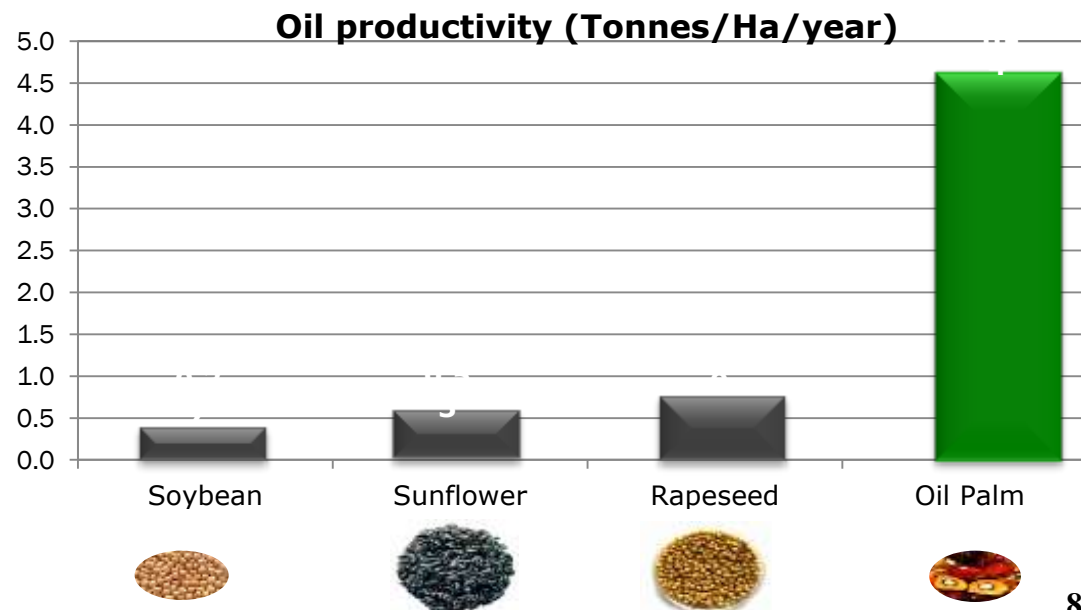
	2010	2011	2012**	2013**
Domestic Consumption (ton)	6,345,000	7,129,000	7,806,616	8,780,283
Food Use Domestic Consumption (ton)	4,475,000	4,702,000	4,991,990	5,203,783

Sources of data: Ministry of Agriculture; and USDA, processed

Note: ** = trend projection⁵⁹

Fulfilment of food needs

Oil palm has the highest competitive advantage compare to soybean, sunflower and rapeseed, especially for producing cooking oil.



II. OVERVIEW of INDONESIA PALM OIL (4)



2.b Supporting energy needs

Palm oil can be used as supporting fulfilment energy needs. Besides as a oil producer, oil palm also produces biomass, likes pome, shell, empty fruit bunches and fiber. All of them are promising for supporting fulfilment energy needs and renewable energy.

II. OVERVIEW of INDONESIA PALM OIL (5)



2.c. Indonesian CPO Export Performance

- Palm oil is the **main agricultural export commodities** of Indonesian export target of U.S. \$ 200 billion in 2011,
- **Palm oil derivatives industry** of food and non-food purposes (CPO, RBD Palm Olein, RBD PO, RBD Palm Stearin, Palm Kernel Oil, RBD PKO, PFAD, Oleo Chemical, Surfactants, FAME / biodiesel etc), had been developed,
- Palm oil exports been accounted of **11.96%** from total **non-oil exports** of Indonesia,
- There is a growth of palm oil and its derivatives exports by **18%** during the **period 2007-2011**, from the original U.S. \$ 8.9 billion in 2006 to U.S. \$ 19.4 billion in 2011.
- **By volume**, the Indonesian palm oil exports as a **whole continues to rise with the trend of 7.66%** during the period of 2007-2011. CPO exports in 2011 amounted to 8.4 million tonnes and exports of cooking oil by 4.6 million tons.

II. OVERVIEW of INDONESIA PALM OIL (6)



2.c. UPSTREAM - DOWNSTREAM OIL EXPORTS



Source: Data Center, MoT 2012

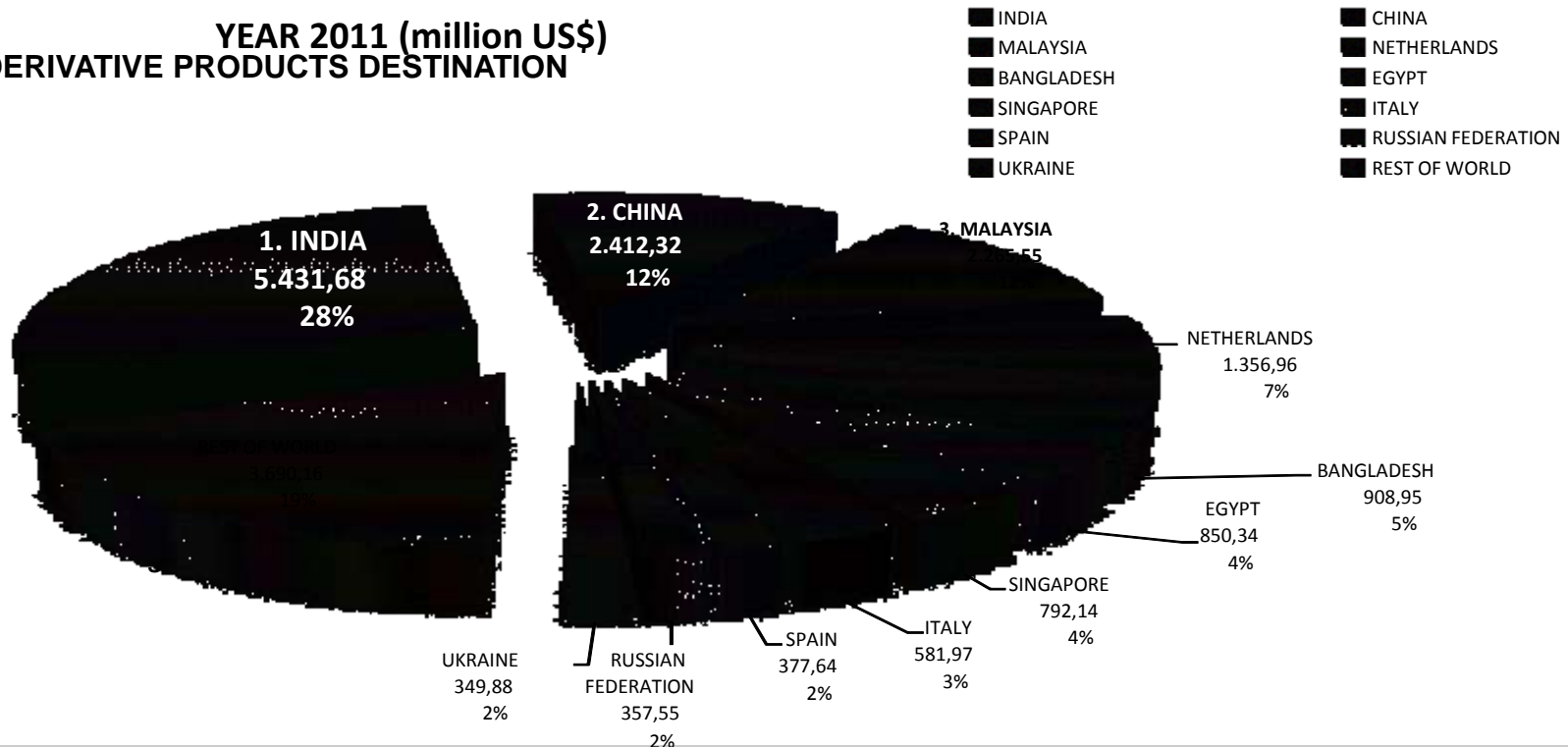
- Exports are still **dominated by the export of raw materials** (upstream products) in the form of CPO & CPKO of U.S. \$ 10.4 billion in 2011, or approximately **53.8%** of total exports of palm oil products.
- Product between (**1st downstream**) such as *Crude Palm*, *Kernel Olein*, and *Stearin* have a share of **4.8%** of the total Indonesian palm oil exports in 2010, while the **share of downstream products** (2nd downstream) as *Refined Bleached Deodorized (RBD)*, *Palm Olein* or *cooking oil* and *RBD Palm and Kernel Oil and Stearin* by **41.4%**.

II. OVERVIEW of INDONESIA PALM OIL (7)



2.c. COUNTRIES of INDONESIA CPO EXPORT

YEAR 2011 (million US\$)
CPO AND DERIVATIVE PRODUCTS DESTINATION EXPORT



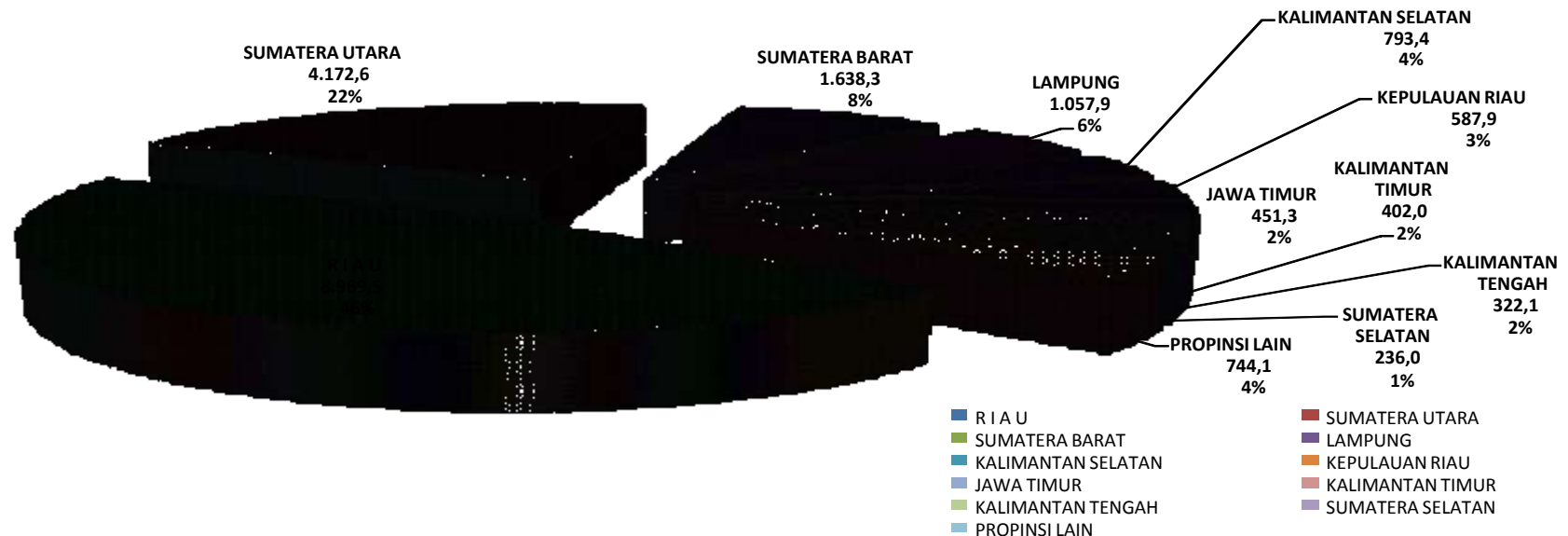
India is the main destination of Indonesia's CPO exports with a value of U.S. \$ 5.432 million (28%) in 2011, followed with a market share of 12% by China and Malaysia

II. OVERVIEW of INDONESIA PALM OIL (8)



2.c. PROVINCE ORIGIN OF CPO EKSPORT

PROVINCE ORIGIN OF CPO EKSPORT YEAR 2011
(million US\$)

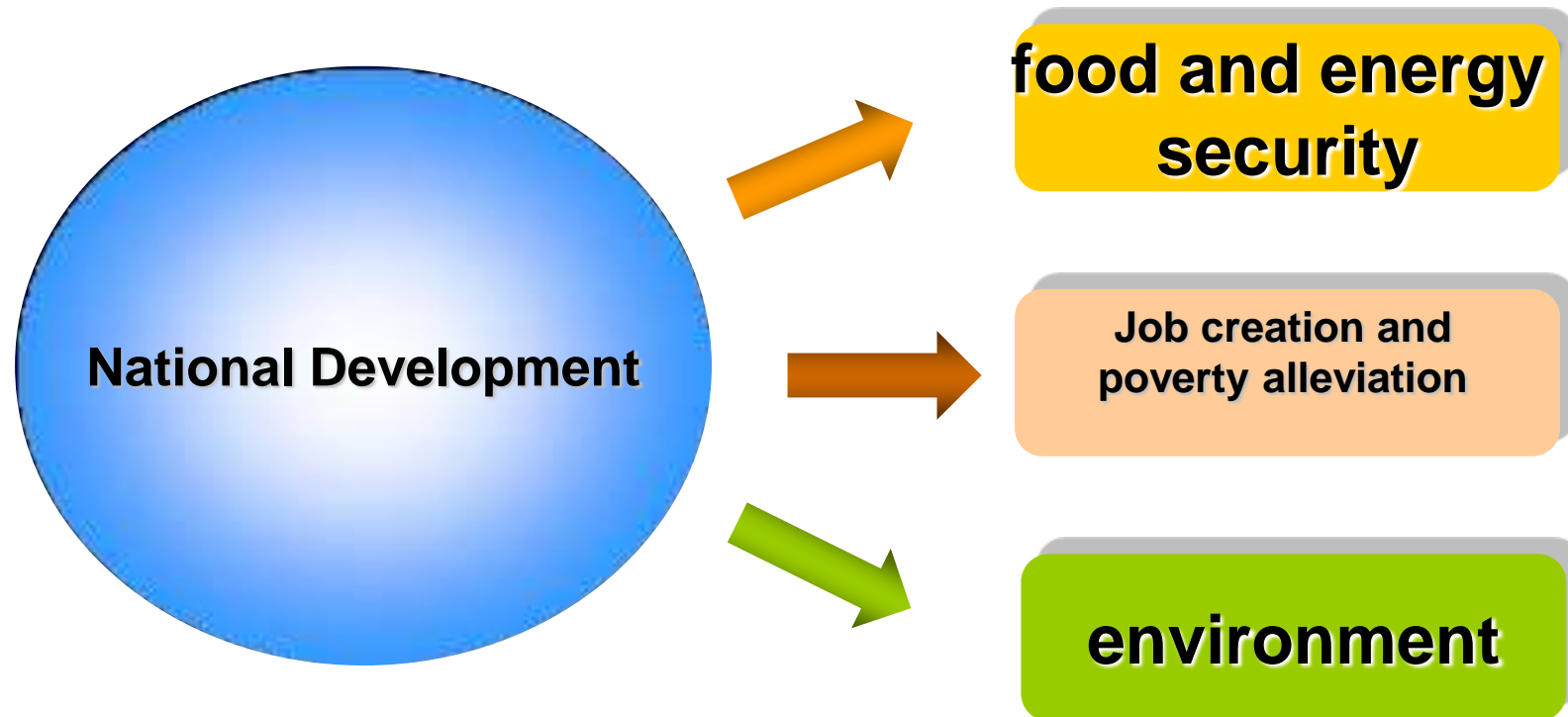


Source: Data Center, MoT 2012

Areas of Indonesia's largest palm oil exporter in 2011 was the province of Riau with an export value **U.S. \$ 8.969 million** followed by **North Sumatra** exported **22%** of the total Indonesian CPO exports and third in **West Sumatra 8%**.



National Development Policy

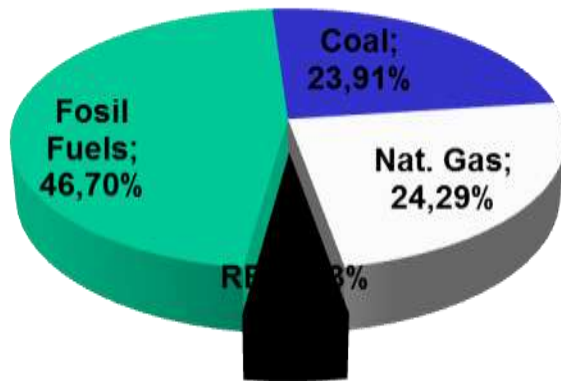


III. SUSTAINABLE PALM OIL BIOFUEL (4)



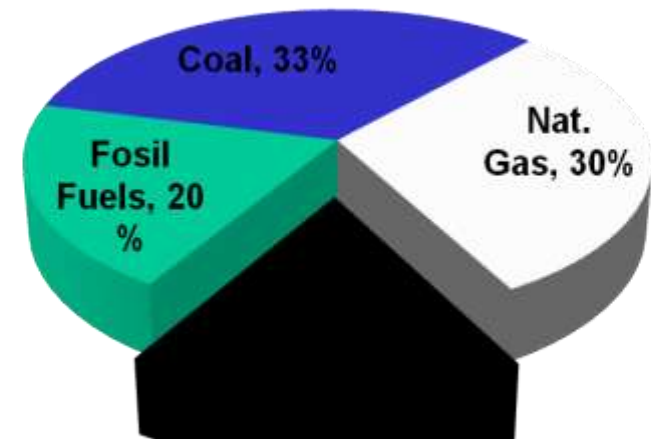
Mixed energy by 2025

2011



Sumber, ESDM

2025



Biofuels 5%
Geothermal 5%
Solar, Nuclear, Wind 5%
Liquefied Coal 2%

III. SUSTAINABLE PALM OIL BIOFUEL (5)



Renewable energy mandatory use KEPUTUSAN MENTERI ESDM NO 25, 2013

BIOETHANOL (Minimum)						
Sector	Sept.2013	Jan 2014	Jan. 2015	Jan. 2016	Jan. 2020	Jan. 2025
Transportation Public Service Obligation (PSO)	-	0.5%	1%	2%	5%	20%
Transportation, Non PSO	1%	1%	2%	5%	10%	20%
Industry		1%	2%	5%	10%	20%

BIODIESEL (Minimum)						
Sector	Sept.2013	Jan. 2014	Jan. 2015	Jan. 2016	Jan. 2020	Jan. 2025
Transportation Public Service Obligation (PSO)	10%	10%	10%	20%	20%	25%
Transportation Non PSO	3%	10%	10%	20%	20%	25%
Industry	5%	10%	10%	20%	20%	25%
electricity	7.5%	20%	25%	30%	30%	30%

III. SUSTAINABLE PALM OIL BIOFUEL (6)



Fossil and renewable energy use

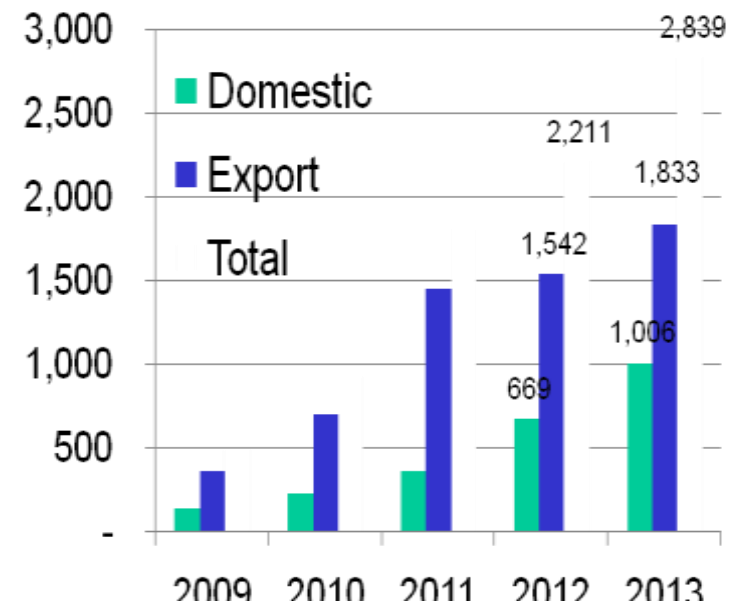
Projecton	2013	2014	2015	2016	2020	2025	2030	2040
Solar, m kl	33.00	34.65	36.38	38.20	46.43	59.26	75.64	123.20
BD %	10%	10%	10%	20%	20%	25%	30%	40%
BD, m kll	3.30	3.47	3.64	7.64	9.29	14.82	22.69	49.28
CPO, jtkl	29.89	32.18	34.48	36.78	45.98	57.47	68.97	91.95
Premium, m kl	26.00	27.30	28.67	30.10	36.58	46.69	59.59	97.07
E, %	1%	1%	2%	5%	10%	20%	25%	30%
E, m kl	0.26	0.27	0.57	1.50	3.66	9.34	14.90	29.12

III. SUSTAINABLE PALM OIL BIOFUEL (9)



Biofuel Production

Biodiesel (Volume)				
year	Domestic 000 kl	Export 000 kl	volume 000 kl	Export (%)
2009	130	354	484	73%
2010	223	695	918	75.7%
2011	359	1,453	1,812	79.1%
2012	669	1,542	2,211	69,7%
2013	1,006	1,833	2,839	65.5%
2014*	3,000	2,200	5,200	42.3%



Projection

Sumber, Pertamina, EBTKE, BPS, Aprobi

III. SUSTAINABLE PALM OIL BIOFUEL (12)



Biodiesel Prices

Based on Rapeseed, soybean oil and palm oil



IV. CHALLENGES AND OPPORTUNITIES (1)



- Oil palm plantation owned by smallholders should be replanted
- Weakness in farmer organization
- Productivity of plantation owned by independent smallholder is low (lower than its potential productivity)
- Independent smallholders have limited access to the services of technology, capital and production input
- Fulfilment of food and energy security
- Sustainable and environment friendly products

IV. CHALLENGES AND OPPORTUNITIES (2)



EU RENEWABLE ENERGY DIRECTIVES

- Obliges states EU member to make use **renewable energy by 20%** and **by 10% biofuels** in the transport sector by 2020. EU-RED came into effect on 23 April 2009 to be adopted by states EU member.
- In *Directive 2009/28/EC, Article 17, paragraph 4* set the standard provisions regarding palm oil which can be imported into the EU as a biodiesel raw materials.
- ***Minimum default value emission saving*** allowed by the EU is **35%**, while the *default value Indonesian palm oil* is only rated at **19%**, which is caused by deforestation and forest clearance for the use of peatlands for palm oil plantations that do not deserve to be considered as raw material for renewable energy.

IV. CHALLENGES AND OPPORTUNITIES (3)



SUSTAINABILITY (ISPO)

- In line with the Policy Greening program that includes environmental, social and economic aspects of development, the Government of Indonesia implementation the mechanism of *Indonesia Sustainable Palm Oil (ISPO)* which aims to raise awareness the importance of sustainable palm oil production, supporting the government's program to reduce greenhouse, gas emissions and improve competitiveness of Indonesian palm oil in the world market .

V. GOVERNMENT POLICY ON OIL PALM DEVELOPMENT (4)



- **In the future development of oil palm should be continued, either through**
 - ✓ **increasing the productivity (productivity of FFB 35 tons/year/ha and oil content of 26% in 2025)**
 - ✓ **expansion of area (i.e. 1 million ha in border area)**
 - ✓ **diversification of business : oil palm - cattle integration**
- **CPO products :**
 - ✓ **to match the food needs especially for cooking oil**
 - ✓ **to support the bioenergy needs (biodiesel and electricity)**

V. GOVERNMENT POLICY ON OIL PALM DEVELOPMENT (5)



. Organization

- ✓ development of the new partnership pattern between the smallholders and the private-owned estates i.e. production, processing and marketing, etc
- ✓ strengthening the farmer organization (i.e ASPEKPIR, KUD, APKASINDO)
- ✓ to develop minimally 20% smallholder plantation as stipulated in Decree of Minister of Agriculture No. 98/2013

IV. GOVERNMENT POLICY ON OIL PALM DEVELOPMENT (6)



. Indonesian Sustainable Palm Oil (ISPO)

- ✓ in accordance with the Decree of MOA No: 11/2015 : private and government-owned estates have to obtain ISPO certificate (mandatory) and it is optional (voluntary) for the smallholders.
- ✓ Cooperation between MOA and UNDP: the development of pilot project for smallholders to implement the ISPO's principles and criteria.
- ✓ Up to now, there are 97 private and government- owned estates have obtained the ISPO certificate.

VI. CLOSING REMARKS (1)



- Palm oil is the “Grace of God (Allah SWT)” to the Indonesian people,
- Indonesia will continue to increase production and competitiveness of palm oil / CPO and its derivative products in a sustainable manner by taking into account the principle of ISPO,
- Palm Oil will sufficient to produce biofuel (B 15) with mandatory policy
- The implementation mandatory policy of B 15 needs more supports and coordination especially in pricing policy, and infrastructure development



VI. CLOSING REMARKS (2)



- The Indonesian government continues to improve policy on palm oil with sustainable and environmentally friendly,
- Utilization of funds from the state revenue CPO export duty policies and products derived from palm oil that is intended for people garden rejuvenation, strengthening human resources, research, infrastructure improvements and promotional campaigns to counter the negative as well as mitigating the production of eco-friendly palm oil,
- Promotion policies to counter the negative campaign against palm oil will be done with the diplomatic approach and involving all actors of interest, including NGOs.





THANK YOU