



Oil palm in Indonesia linked to trade and investment: Implications for forests

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Outline

- The debate: controversial issues
- Production, market and investment trends
- Conditions shaping those trends
- Local impacts of oil palm expansion
- Main implications for forests
- Options to manage impacts
- Conclusions

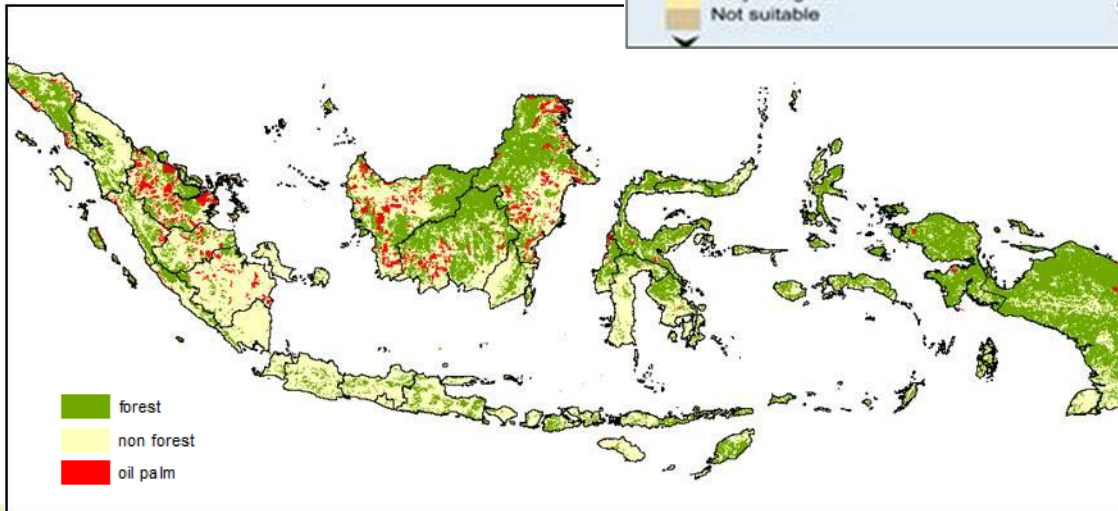
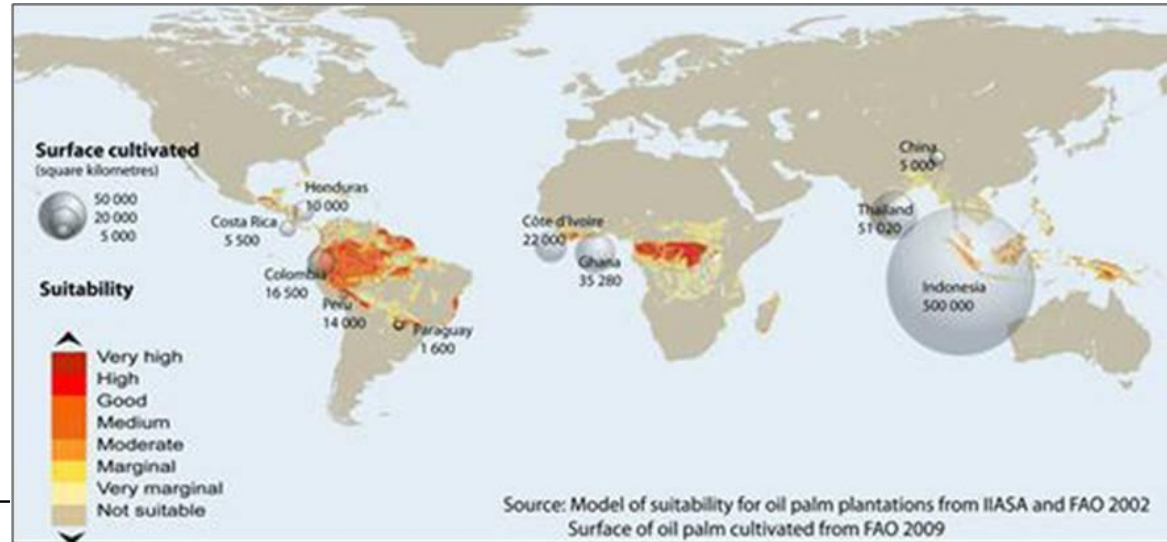
Main issues in the debate

- Oil palm sector contributes to the economy in important ways, but at the same time, it has significant impacts on forests, thus on carbon emissions and climate change
- The impacts on local development and people's wealth are contradictory, and there is a tension between the options for improving equity vis-à-vis productivity
- Important scope for reducing negative and enhancing positive impacts of oil palm development linked to regulations and incentives, technological options, and market-based initiatives, but key barriers remain



The geography of oil palm

- More rapid growth in Southeast Asia
- Larger expansion in Sumatra / Kalimantan
- Expanding to Papua Province in Indonesia



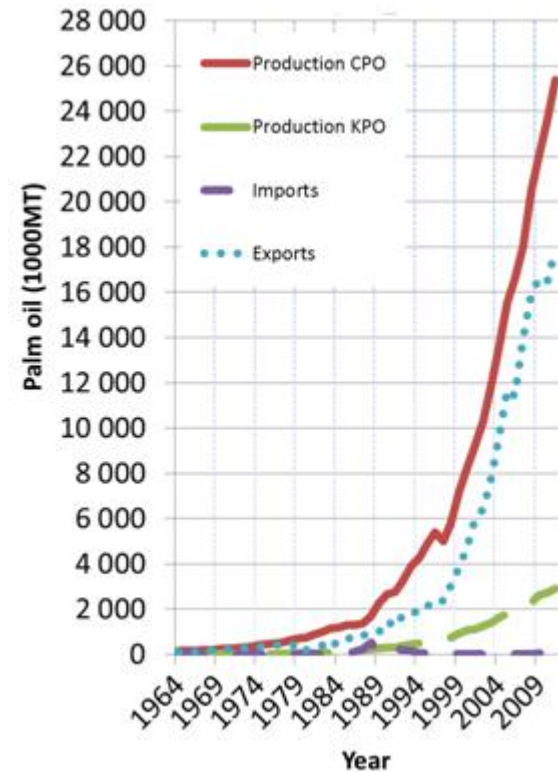
Indonesia



Production trends

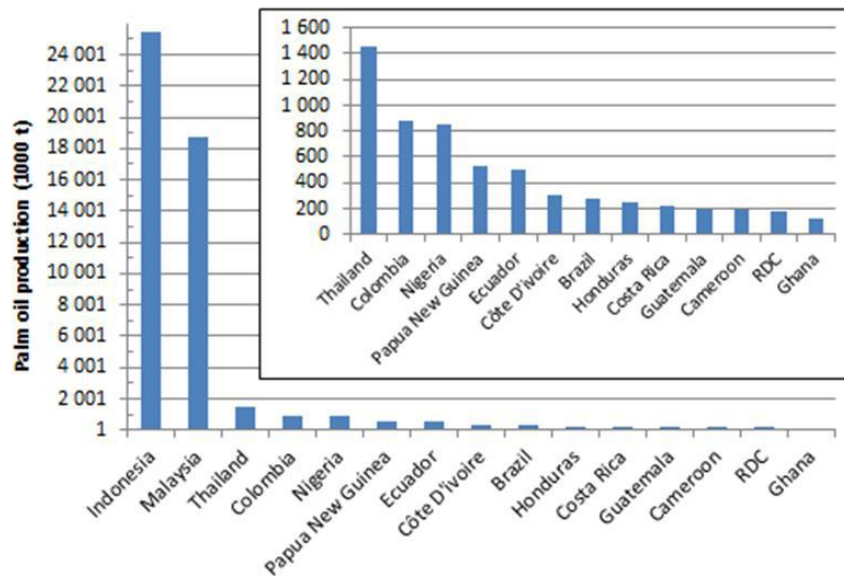
- Indonesia is the largest producer of CPO (25.4 million tons; ~45% of global market in 2011)

Palm oil in Indonesia, 1964-2012



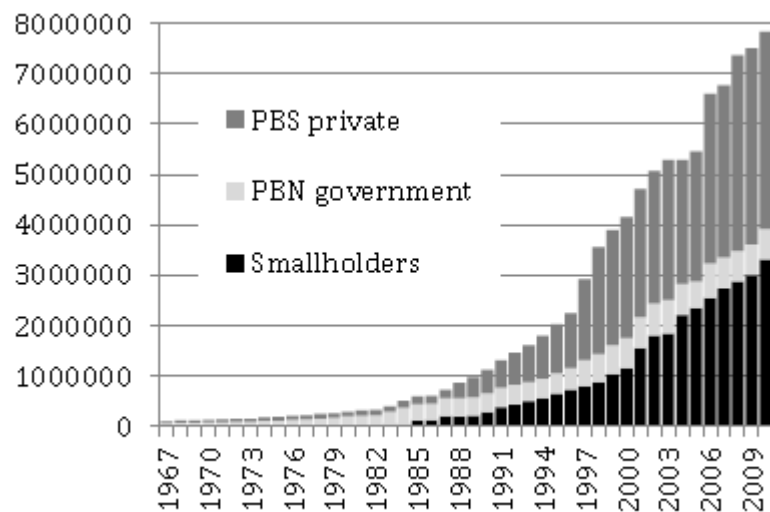
Source: <http://www.indexmundi.com/>

Palm oil production in 2011

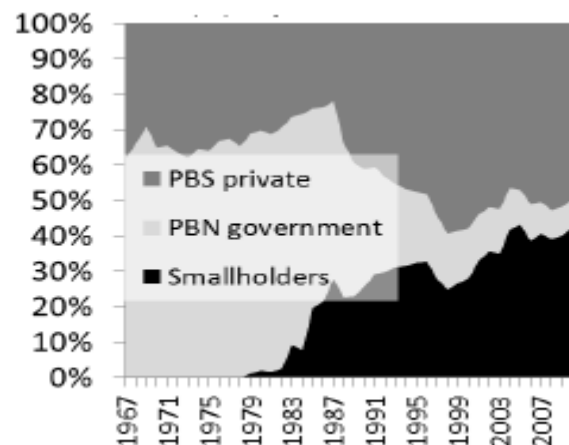


Oil palm plantations

Oil palm plantations in Indonesia (in ha)



Share by type of producer (in %)



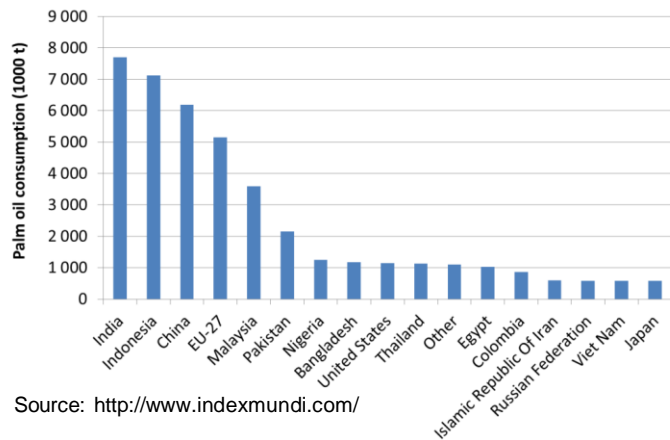
Source: Ministry of Forestry (2011)

- Three types of business models:
 - Large-scale plantations
 - Nucleus state smallholders (NES)
 - Independent smallholders
- Smallholders obtain yields 30-40% lower than large-scale estates



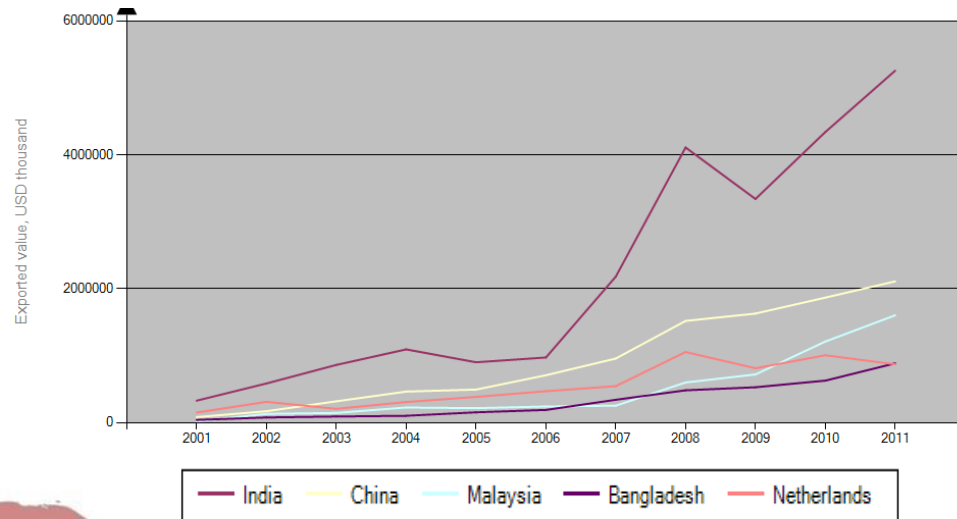
Market trends

Palm oil Consumption in 2011

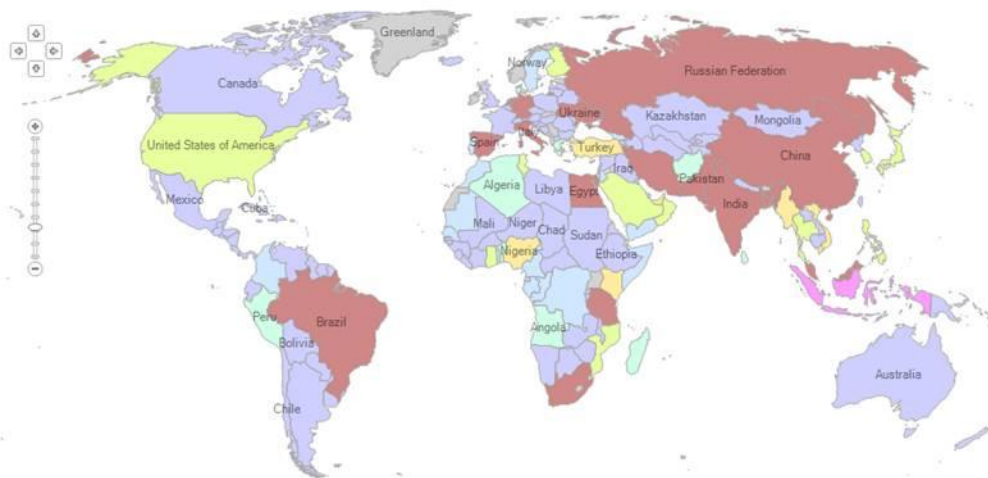


Source: <http://www.indexmundi.com/>

List of importing markets for a product exported by Indonesia
Product: 1511 Palm oil & its fraction



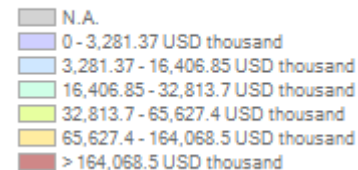
Source: COMTRADE (2012)



List of importing markets for a product exported by Indonesia in 2011

Product : 1511 Palm oil & its fraction

Exported value, USD thousand



Investment trends

- About US\$ 12.5 billion were invested in oil palm expansion in the period 2000-2008
- Modest role of multilateral financial institutions, and equity investors play an important role.
- The ten largest companies were financed on average 59% by equity, and 41% through debt from commercial bank loans
- The top ten oil palm companies have a combined market capitalization of US\$ 79.1 billion



Source: van Gelder et al. (2011)

Projected growth

	2009	2015	2020
Production	19.1	30	40
Export	9.6	11.3	12
Domestic use	9.5	18.7	28
- cooking oil	8.7	11	12
- biodiesel	0.3	5.7	12
- oleochemicals	0.5	2.0	4.0

Source: Ministry of Industry (2011)

A largest growth in consumption of oil palm production (in million tons) was expected to take place due to biodiesel demand

Table 5: World Requirement of Vegetable Oils ('000 tonnes)

Use of oils	Requirement		
	2007	2015 (p)	2030 (p)
Food	136.8	147.2	160.7
Bio-fuels*	7.6*	57.0**	102.0**
Total	144.4	204.2	262.7

Source: Basiron & Kheong (2009); OECD (2008)

What is the role of biofuels?

- Indonesia has long been dependent on fossil-fuel energy, but over time it has been looking for alternative sources of energy due to shrinking oil reserves
- The government made efforts to develop biofuels (e.g. plans for land allocation, subsidies, blending targets) associated to energy production and poverty alleviation
- Targets are far from being achieved due to higher prices of CPO (compared to fossil fuels), a growing market for edible oil, and government subsidies to fossil fuels
- In 2011, 22 biorefineries with a production capacity of 3,936 M Liters, 17% capacity use, 650 M Liters biodiesel, about 2.5% of total CPO production

Source: Caroko et al. (2011), USDA (2011)



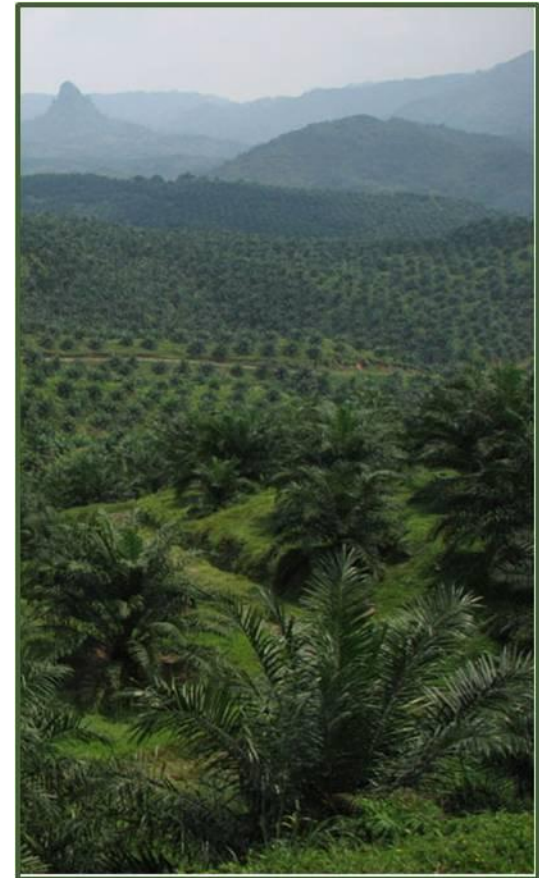
Multiple factors shaping current trends of oil palm development

- **Economic** – oil palm is an important contributor to state revenues, employment and smallholders' livelihoods / profits are relatively larger than in other commodities
- **Institutional** – different government levels (e.g. district, province, national) have authority to issue permits for oil palm plantations / tenure regulations facilitate granting of permits in forested lands as long as the status of the land is “convertible production forests”
- **Political** – strong incentives for public officials and private sector to convert forests to more economically profitable land uses, and capture associated rents



Outcomes depend on local state-society-agribusiness configurations

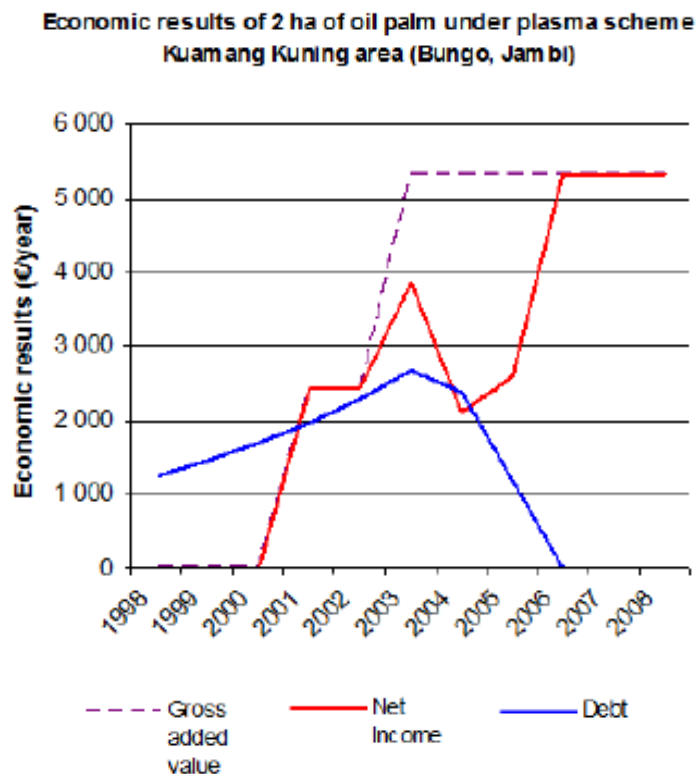
- Interactions between state and non-state actors affect local production networks, thus with differentiated socio-economic outcomes
- Three main situations are visible:
 - *Jambi, Sumatra*: shift from state-led to a laissez-faire development with growing local social differentiation
 - *West Kalimantan*: partnerships highly favorable to company interests supported by district government
 - *The Riau case*: reapplying the hand of the state with a pro-poor oriented goals



Source: McCarthy et al. (2012)



Oil palm expansion in small-scale farming systems



Source: Feintrenie et al. (2010)

- Farmers have a limited range of cash crops to choose from due to biophysical and market factors
- Development of oil palm help to improve incomes but complete specialization may increase vulnerability of households
- Independent smallholders have a lower net income than farmers bounded with a company (Jambi)

Local socio-economic impacts of large-scale plantations (1)

- Socio-economic impacts more positive than environmental ones:
 - Employment opportunities
 - Better incomes
 - Opportunities to save and invest
 - Better infrastructure and education
- Significant differences between stakeholder groups in terms of access to these benefits:
 - Better off - employees and investing households
 - Worse off - former landowners often with rights under informal customary tenure



Source: Obidzinski et al. (2012)

Local socio-economic impacts of large-scale plantations (2)

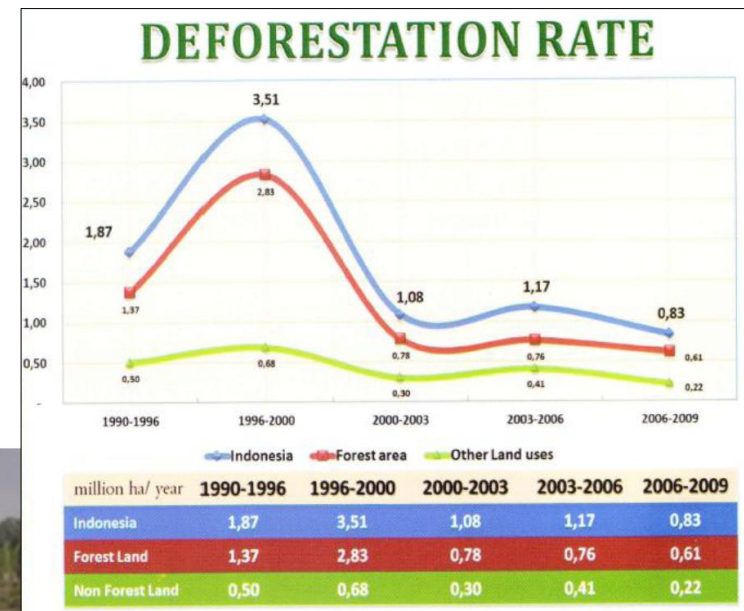
- Socio-economic negatives related to oil palm plantations expansion:
 - Employment usually with low salaries, uncertain duration, limited benefits
 - Influx of migrant labor, which is a tough competitor to locals
- Land transfer problems:
 - Inconsistent adherence to local customary land authority structures
 - Lack of contract and compensation clarity
 - Conflict associated with plantations
 - Land speculation



Source: Obidzinski et al. (2012)

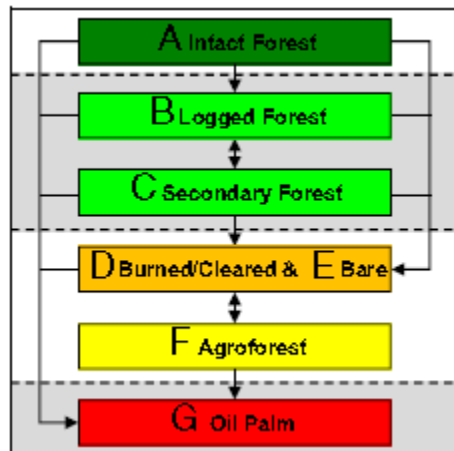
Impacts on forests related to oil palm expansion

- Established to the expense of forest and peat lands leading to deforestation and carbon emissions
- ~70% of existing oil palm plantations were developed on former state forest lands
- ~56% of expansion between 1990-2005 occurred at the expense of forest cover



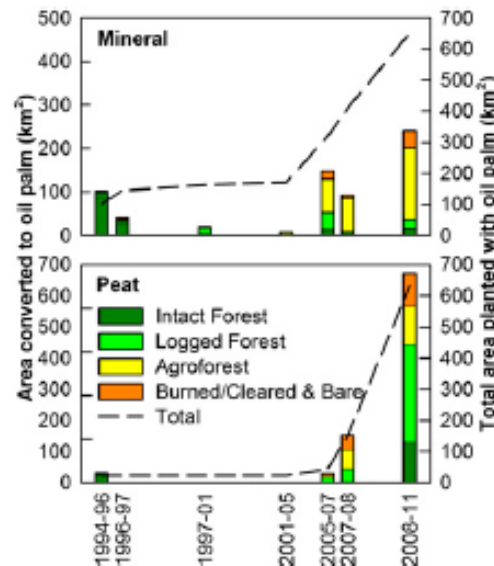
Diverse land use trajectories

- Smallholders – main trend is the conversion of agroforestry systems to monoculture plantations linked to processes of intensification and/or expansion on forested lands
- Companies - have tended to establish oil palm plantations under several previous land uses (e.g. primary forests, logged forests, rubber plantations, burned and cleared)



Land use transitions in West Kalimantan

Land cover sources for oil palm



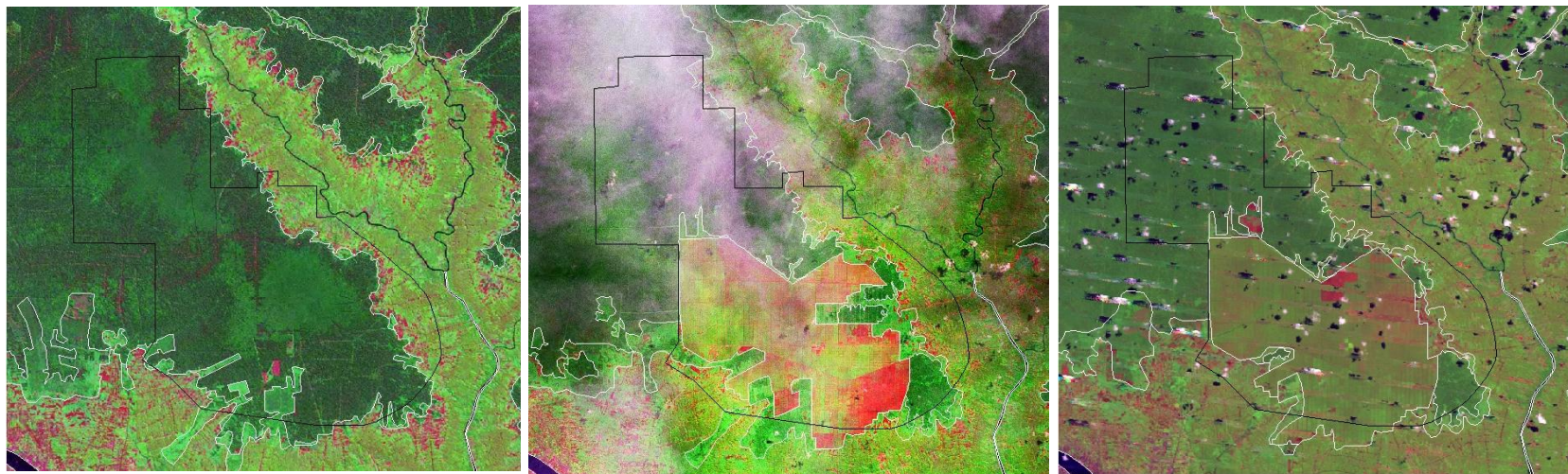
Mineral soils

Peat soils

Source: Carlson et al. (2012)



The case of two oil palm concessions



Site	Start date	Concession area (ha)	Area developed (ha)	Area deforested (ha)	Forest type	% expansion displacing forest
West Kalimantan, Indonesia	1994	13 605	5 266 (by 2009)	4 949 (by 2009)	Secondary peat swamp forest	94%
Boven Digoel, Papua, Indonesia	1998	34 000	17 000 (by 2010)	11 300 (by 2008)	Humid tropical	≥ 66%

Source: Obidzinski et al (2012)



Progress for managing impacts but several constraints persist

- **Multi-stakeholder initiatives** - greater adoption of RSPO but in a limited scale and risk to marginalize smallholders
- **Market regulations** for biofuels in consumer countries, yet doubts on their effectiveness to affect oil palm supply:
 - EU-RED: to have a minimum life-cycle carbon emission savings of 35% compared to fossil fuels and not coming from lands of HCV
 - EPA-USA: Renewable fuel standard (EPA): the minimum 20% GHG reduction – oil palm has been declared not to meet this minimum
- **Company initiatives** – SMART with TFT for conserving HCS (provisional Definition 35 ton C above ground per ha)
- **Government actions** – Indonesian's forests moratorium

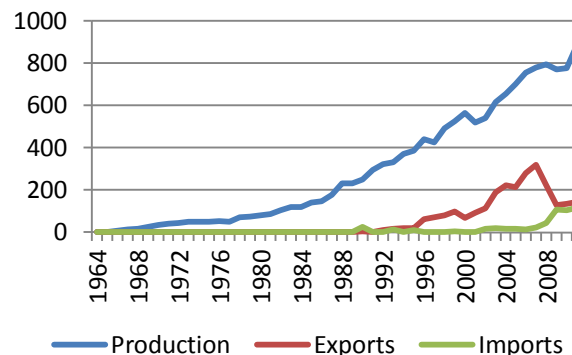


Some contrasting situations

- Important expansion of plantations
- Mainly large-scale estates; 19% under 'alliances' with smallholders
- A growing portion to supply biodiesel market, with a decrease on exports
- Relatively reduced impacts on forests

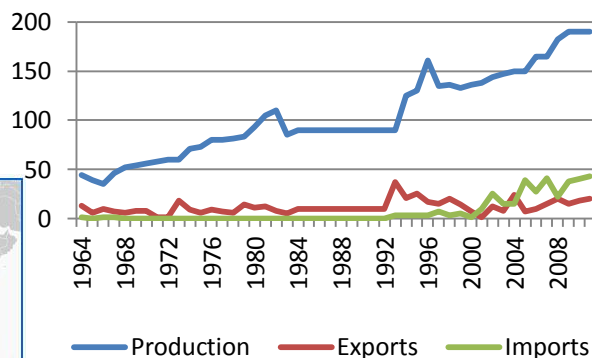
Source: Pacheco (2012)

CPO production and trade (000 MT)



Colombia

CPO production and trade (000 MT)



- Smallholders contribute to 70% of total area but only 47% to total production
- Artisanal oil processing important to supply the domestic food market
- At least 6 foreign companies planning to expand plantations (~1 M ha)
- Expected high impacts on forests

Source: Hoyle and Levang (2012)



Cameroon

Ways to reduce impacts on forests and enhance benefits

- Investment shifts to degraded lands
- Active support to smallholder-based economies
- Development of value added industries
- Enhance tenure security and ensure FPIC
- Responsible investment along the value chain



This requires policy harmonization to realign incentives, forest tenure reform, commitment from private actors towards responsible investment, and greater transparency in decision-making, among others. Changes, if any, will be slow.

Conclusions

- Oil palm expansion is shaped by strong economic forces and comparatively high profits, supported by institutional private-public arrangements for capturing economic rents
- Considerable socio-economic benefits for some local groups (e.g. outgrowers, independent farmers, and employees), but impacts on customary land users
- Significant negative direct environmental impacts (forest loss and carbon emissions), mainly due to expansion in peatlands, along with complex land use trajectories
- Likely hybrid governance systems required drawing on international norms, third party monitoring and social arrangements, and including norms in public policies