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

Pablo Pacheco

Agriculture and rural development learning exchange
May 2012
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
Production trends

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

Source: http://www.indexmundi.com/
Oil palm plantations

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

![Graph showing palm oil consumption in 2011](http://www.indexmundi.com/)

Source: [http://www.indexmundi.com/](http://www.indexmundi.com/)

![Graph showing list of importing markets for a product exported by Indonesia](http://www.indexmundi.com/)

Source: COMTRADE (2012)
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

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>19.1</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Export</td>
<td>9.6</td>
<td>11.3</td>
<td>12</td>
</tr>
<tr>
<td>Domestic use</td>
<td>9.5</td>
<td>18.7</td>
<td>28</td>
</tr>
<tr>
<td>- cooking oil</td>
<td>8.7</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>- biodiesel</td>
<td>0.3</td>
<td>5.7</td>
<td>12</td>
</tr>
<tr>
<td>- oleochemicals</td>
<td>0.5</td>
<td>2.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Use of oils</th>
<th>2007</th>
<th>2015 (p)</th>
<th>2030 (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>136.8</td>
<td>147.2</td>
<td>160.7</td>
</tr>
<tr>
<td>Bio-fuels*</td>
<td>7.6*</td>
<td>57.0**</td>
<td>102.0**</td>
</tr>
<tr>
<td>Total</td>
<td>144.4</td>
<td>204.2</td>
<td>262.7</td>
</tr>
</tbody>
</table>

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

- 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).

Source: Feintrenie et al. (2010)
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)

Source: Carlson et al. (2012)

Land use transitions in West Kalimantan

Land cover sources for oil palm

Source: Carlson et al. (2012)
The case of two oil palm concessions

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

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

**Colombia**
- 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)

**Cameroon**
- 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)
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.