Reducing Impacts and Enhancing Sustainable Management of Oil Palm on Peatlands

Session 3

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Introduction

- Peatlands cover 30 million ha in SeAsia.
- Many values for water management, climate control, biodiversity and socio-economic purposes.
- Due to the decreasing agricultural land areas, pressure is mounting on the low lying peatlands for agricultural development
- Peatlands have been converted for oil palm for more than 30 years, particularly in Malaysia and Indonesia
Peat in Natural State

- Covers large areas of coastal lowlands
- Normally formed between two rivers
- High water table
- Accumulated layer of partly-decomposed plant materials 1-20m deep
- Dome/lens shape
- Covered with peat swamp forest
Table 2: Crop Areas on Peat in Peninsular Malaysia

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area (ha)</th>
<th>%</th>
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<tbody>
<tr>
<td>Oil palm</td>
<td>247,034.36</td>
<td>65.7</td>
</tr>
<tr>
<td>Rubber</td>
<td>62,414.65</td>
<td>16.6</td>
</tr>
<tr>
<td>Padi</td>
<td>17,114.38</td>
<td>4.5</td>
</tr>
<tr>
<td>Coconut</td>
<td>14,637.02</td>
<td>3.89</td>
</tr>
<tr>
<td>Mixed horticulture</td>
<td>14,677.97</td>
<td>3.9</td>
</tr>
<tr>
<td>Pineapple</td>
<td>5,825.93</td>
<td>1.5</td>
</tr>
<tr>
<td>Orchard</td>
<td>5,816.43</td>
<td>1.5</td>
</tr>
<tr>
<td>Miscellaneous crops</td>
<td>5,345.98</td>
<td>1.4</td>
</tr>
<tr>
<td>Vegetable</td>
<td>574.41</td>
<td>0.15</td>
</tr>
<tr>
<td>Shifting cultivation</td>
<td>470.53</td>
<td>0.13</td>
</tr>
<tr>
<td>Cocoa</td>
<td>235.74</td>
<td>0.06</td>
</tr>
<tr>
<td>Agriculture stations</td>
<td>163.76</td>
<td>0.04</td>
</tr>
<tr>
<td>Others</td>
<td>1,693.84</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>376,006.00</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Lim et al., 2002
Peat forests ablaze

BY DAVID BAKAR

PESSIMIST 30%: One third of peat forest in its full extent in Malaysia are burning and firefighting efforts are being hampered by strong winds and poor visibility due to smoke and haze. The peat is burning in a few places, including in the Sumatran region.

One of the reasons for the massive fires is the increasing demand for palm oil, which is used in a wide range of products including fuels, fertilizers, and food. This has led to massive deforestation, particularly in Indonesia, to make way for palm oil plantations.

The environmental impact of these fires is significant. Peat lands are the largest carbon sinks on earth, and their destruction releases carbon dioxide, a greenhouse gas, into the atmosphere. This contributes to climate change.

The fires have also had a significant impact on biodiversity. Many species of flora and fauna are threatened by the loss of their habitats.

The Malaysian government has been criticized for its response to the fires. The country is a major producer of palm oil, and the government has been under pressure to show leadership in combating the fires.

The global community is also paying attention to these fires. The United Nations has called for action to prevent further destruction of the peatlands and to address the root causes of the fires.
Local Impacts

Peat Fires in SEA
Peat Fires in Plantations

Riau province, Sumatera - 24th Jan 2005
PKPS, Batang Berjuntai - 2002

North Selangor - 2001

Peat Fires and Drainage Canals

North Selangor Peat Swamp Forest - 2001
Current common scenarios – uncontrolled drainage leading to peat fires

- Natural condition
- Plantation adjacent to peat causing water outflow
- Draw down of water table and drying of peat soil
- Dry peat very vulnerable to fire, besides threat from burning in plantation

Common Problems Faced

- Land preparation phase
  - Inaccessibility for heavy transport
  - Tree trunks impediment to mechanical cultivation
  - Requires heavy liming (extremely acidic)
  - High input of fertiliser (nutrient deficiency)
  - Underlying acid-sulphate soil
  - Complex hydrological management
Common Problems Faced

• Palm development phase
  – Mid-crown chlorosis (Copper deficiency)
  – Peat yellow (Zinc deficiency)
  – Palm slower to mature compared to mineral soil, and production steadily decline to uneconomic levels
  – Palm leaning
  – Peat subsidence
  – Flooding

Oil Palm Replacing Peat Swamp Forest, Malaysia
Risks of Peatland Development

• Drainage is unavoidable for oil palm cultivation on peat (over-drainage or poor water management common)
• It affects hydrology regime of peat dome and ecosystem
• In many areas, drainage lowered water table, peat soil become dry and vulnerable to fire in dry season and vulnerable to flood in wet season.

Example of Oil Palm on Peat, Tanjung Karang, Selangor
Example of Oil Palm on Peat, Pekan, Pahang

PKPS Case Study

- 360 ha in tin mining land and former peat swamp forest at Batang Berjuntai
- Developed for oil palm in 1999
- Completely burned in 2002
PKPS Case Study

Canal blocking in PKPS, Selangor, Malaysia

Low-cost blocking of drainage channels using metal sheets and peat soil
Successfully rehabilitated PSF in Pru Toh Daeng, Thailand

- Based on 15-year research programme to restore forest on burnt peatland areas
- Becomes a successful eco-tourism site
- Manual on peat forest replanting, Thailand

Interlinkages with P & C for Sustainable Palm Oil Production

- Principle 5 - Environmental responsibility and conservation of natural resources and biodiversity
  - Criterion 5.5 Use of fire for waste disposal and for preparing land for replanting is avoided except in specific circumstances as identified in the ASEAN guidelines or regional best practice.
- Principle 7 - Development of new plantations
  - Criterion 7.3 New plantings have not replaced primary forest and any area containing one or more High Conservation Values
  - Criterion 7.4 Extensive planting on steep, and/or marginal and fragile soils, is avoided
ASEAN Peatland Management Initiative & Strategy

- ASEAN Peatland Management Initiative adopted by 10 ASEAN countries in February 2003
- APMS (2005-2020) endorsed by ASEAN HTTF Nov 2005, pending adoption by AMMH, Dec 05
- Operational Objective 8.4 - Manage agriculture in peatland areas in an integrated manner
- Action 8.4.1 - Restrict future agriculture development to degraded shallow peat
- Action 8.4.2 - Document and promote techniques for prevention of subsidence and over-drainage,...low impact agriculture practices in existing peatland agriculture area

Reducing Impacts and Enhancing Sustainable management Of oil palm on peatlands

- **Guidelines** for site selection and management of oil palm in peatlands building on the RSPO P&C
- **Practical manual** for reduced environmental impacts and best management practice for oil palm plantations in peatlands.
- **Pilot and Demonstration sites** for improved best management practice.
  - Models for integration of oil palm development and peatland conservation strategy to maintain peatland functions and values, while reducing poverty and improving local livelihood
Proposed Activities

- Assessment of impacts
- Review site selection procedures and experience.
- Document good & bad management practices
- Develop guidelines and management practices to contribute to the reduction of global climate change
  - Evaluate impact of management measures on the emissions of greenhouse gases
- Testing of management measures at Pilot sites
- Organise workshops and awareness campaign for sustainable management practices

Linkage with Ongoing Activities and Frameworks

- Global Assessment on Peatlands, Biodiversity and Climate Change in the framework of the Convention on Biological Diversity (CBD)
- Wetland and Poverty Reduction Programme
- Biorights Initiative

- Proposed duration: 3 years (2005-2008)
Funding

- Estimated budget = $450,000 plus the costs for management measures at pilot sites
- GEC - approx. $50,000 through the framework of the ASEAN Peatland Management Initiative and the Assessment of Peatlands, Biodiversity and Climate Change (CBD)
- Wetlands International - approx. $80,000 to support the development of appropriate sustainable development models and establishment of pilot areas.
- ASEAN-IFAD-GEF: Contribution through regional programme on Peatland Rehabilitation and Sustainable Use
- Additional partners or sponsors will need to contribute further resources.

Partners

- Global Environment Centre and Wetlands International
- EOI from International Peat Society and International Water Management Institute
- OP plantation companies that have had, have or going to start plantation on peatland particularly, PO Associations, and OP research agencies and institutions
- NGOs or other agencies developing models for conservation or sustainable oil palm in peat
Feedback

• Please fill in the form
• Contact fparish@genet.po.my
• Contact david@genet.po.my
• Check www.peat-portal.net

Thank you