

# Current Status of Woody Biomass in Eastern Part of Thailand

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## 1. Background

We have investigated the utilization of woody biomass in ASEAN countries. This is mainly because ASEAN countries certainly have large availability and potential of woody biomass. We reported the feasibility on utilization of wood residues in Sabah, Malaysia in the previous workshop held at Tsukuba, January 2005. We then visited and surveyed several wood-processing factories and plantations located in eastern part of Thailand (Fig. 1), such as Khon Kaen, Prachin Buri, Trat, and Chon Buri from September to October 2005. In this paper, we report the current status of woody biomass in these places.



Fig. 1. Eastern part of Thailand



Fig. 2. Eucalyptus for pulp



Fig. 3. Waste from board making

## 2. Industries using wood resources

- (1) Pulp mill (Phoenix Pulp & Paper Public Co. Ltd., Khon Kaen)  
Production capacity: 230,000 ton/year  
Raw materials: Eucalyptus 80% (Fig. 2), Bamboo 10%, Kenaf 10%  
Fuels for steam generation: Black liquor 82.5 %, Bark + Dust 7.5%, Petroleum 10%  
The company-owned plantation:  
Total Area in Thailand: 480,000 ha (Northeast 47%, East 27%, others 26%)
- (2) Board making factory (Vanachai Group Public Co. Ltd., Chon Buri)  
Production capacity: Particle board (PB) = 1000 m<sup>3</sup>/day; MDF = 3000 m<sup>3</sup>/day  
Raw materials: Rubber wood 90%, others 10%  
Usage of wood wastes: Saw dust and bark are used for energy in the manufacturing process (Fig. 3).



Fig. 4. Eucalyptus plantation

## 3. Examples of plantation sites in the area

- (1) Eucalyptus plantation in Khon Kaen (Fig. 4)  
A side job of farmers / grown as "agricultural products"  
An area owned by each farmer: 1.5 ~ 4 ha; Harvesting cycle: 3-4 years,  
Usage: Mainly raw material for pulping
- (2) Rubber wood plantation in Trat (Fig. 5)  
Felling over 20 years old due to the depletion of latex production  
Usage: Raw materials of lumbers or boards
- (3) Teak plantation in Khon Kaen (Fig. 6)  
Usage: Raw materials for furniture production
- (4) Seedlings of oil palm in Chantha Buri (Fig. 7)  
For supply to plantation and gardening



Fig. 5. Rubber wood plantation



Fig. 6. Teak plantation



Fig. 7. Seedlings of oil palm

## 4. Agroforestry systems

- (1) Rubber wood and pineapple (Fig. 8)  
Pineapple: 2 years cycle, 2 times harvest (total 4 years cultivation)  
Rubber wood: Latex production starts 7 years after the planting.
- (2) Eucalyptus and paddy field (rice crop) in Prachin Buri (Fig. 9)  
Synergy effect: both crops need much water for growth



Fig. 8. Agroforestry system:  
rubber wood/pineapple



Fig. 9. Agroforestry system:  
eucalyptus/rice

## 5. Summary

In the eastern part of Thailand, plantation areas of eucalyptus and rubber wood are widely spread and both trees have been used efficiently as raw materials for charcoal, pulp, and board manufacturing including small branches. Thus, there is little expectation of the availability of these woody biomass for alternative resources. (However, we estimate that 800 baht/ton should be paid for collecting the biomass, that is quite possible.) In addition to this, oil palm plantation will be promoted by the Thai government in the eastern region for the production of bio-diesel fuel. If oil palms grow well under the climate of the eastern region, residues of oil palm may facilitate the utilization of woody biomass for alternative materials and energy resources.

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