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Transformation of Forest Use among Local People in Peat Swamp Area

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To design a forest-based society in the local context, it is important to grasp how the local people have used the forest and how the forest has been degraded. This presentation examines a forest-based society that we are attempting to reconstruct, focusing on the transformation of forest use at the local level from a socio-historical standpoint.

Most land in the Bukit Batu area of Riau province in Indonesia consists of peat land, and a mineral soil belt lies along the coastal area around the mouth of the Bukit Batu River. Because the peat swamp is unsuitable for cultivation, the sphere of human activities was limited mainly to the mineral soil belt. Old villages such as Bukit Batu, Tenggayun, and Sepahat were formed in this belt. Tanjung Leban, our research site, is located in the peat land; as such, few people lived there in the past.

Tanjung Leban is believed to have been reclaimed by Tenggayun villagers in the nineteenth century. People earned their livelihood by fishing and cultivating paddy, vegetables, coconut palm, and areca palm. At that time, they traded shrimp and prawns, coconuts, and areca nuts on Bengkalis Island and the Malay Peninsula. Farming in the peat land requires the water to be drained from it. Thus, the reclamation of peat land begins with the digging of canals. Because thick peat land is not suitable for planting areca palm, only land approximately 200 meters inland from the coastline was utilized.

In the 1960s, the commercial value of areca nut dropped, and people began to plant para rubber instead of areca nut. Para rubber can be planted in somewhat deeper peat land, so the people reclaimed the peat swamp forest to cultivate para rubber as far as 1 kilometer inland from the coastline. They traded rubber sheets in Bengkalis and Malaysia.

In the early 1980s the construction of a road from Dumai enabled outsiders to access this area, which affected the use of peat swamp forest in Tanjung Leban. In the 1980s, commercial logging was started under Chinese *Tauke* in Bengkalis, Rupert, and Singapore, though this logging was small scale because the operation was carried out manually with handsaws, axes, and sleds. The scale of logging has grown larger since the late 1990s. Some villagers started to dig canals and deepen the rivers to carry logs to the coastline using machines under the patronage of Malaysian

merchants. A vast amount of forest was cut down as much as 4 to 5 kilometers inland from the coastline. Canal construction and river deepening resulted in the drainage of the peat swamp. Dried peat catches fire easily so this area faces fires frequently in the dry season. Eventually, the peat land in Tanjung Leban became desolated and has remained so. This misguided logging by some villagers resulted from political confusion and a decline in governance caused by the collapse of the Soeharto regime.

In the end of the 1990s, improvement in the road to Dumai and the deregulation of oil palm production resulted in an oil palm cultivation boom in this area. The opening of a factory near the village resulted in ocean pollution after 2000 which caused a markedly reduced shrimp, prawn, and fish catch. Given this, many villagers stopped fishing and began to plant oil palms. The oil palm boom attracted outsiders from other districts who were seeking land for oil palm gardens. The local government also started a development program to increase the local people's economic income through oil palm crops. They planted oil palm in the peat land that had been logged. However, frequent fires caused great damage, which resulted in some landowners selling their land to other people or abandoning cultivation. The fewer people managed their land, the more frequently fire broke out. In this way, people came to pay less and less attention to this land. The peat swamp of Tanjung Leban is currently caught in this downward negative spiral.

To conduct a people's reforestation program toward a forest-based society, there are two problems that must be solved. The first is how to stop and prevent fires in the peat land. Because this is a serious problem for all stakeholders, it is expected that forming a cooperative relationship among them would be easy, though this lies apart from the technical issues.

The second problem pertains to how to motivate local people to join in reforestation. As mentioned above, local people's livelihoods are based on commercial crops such as areca nuts, rubber, and shrimp—these people are not subsistence farmers. They are thus sensitive to changes in commercial value, and they have the flexibility to change their crop and economic activities in response to market trends. In fact, they changed their crop from areca palm to para rubber, established a patron–client relationship with Malaysian merchants toward expanding logging activities, and proactively introduced oil palm cultivation. They maintain a close relationship with the Malay Peninsula, a marine trade network. When we start a people's reforestation for the rehabilitation of the desolated peat land, it will be important to plant good tree species, not only from an ecological aspect but also from an economic one. There are some migrants and absentee landowners who hope to expand oil palm farms in the village. It is important to establish a collaborative institution that will also motivate them to rehabilitate the peat land.