Pilot study to establish highly productive and environmentally sound forest management methods in West Kalimantan, Indonesia
(International Charcoal Cooperative Association)

§ Background

This project took place in the Republic of Indonesia's West Kalimantan state, located in the southwestern part of world's third largest island, Borneo (Kalimantan). The size of the state is roughly equivalent to half the size of Honshu, Japan's mainland. Borneo is in the tropical zone, and is famous for its tropical rainforests with mangroves, freshwater swamp forest, peat swamp forest, and lowland dipterocarp forest. The tropical rainforests of Borneo are home to one of earth's highest concentrations of biodiversity and many endemic species, including well-known species such as orangutan, rafflesia and arowana.

Residents of West Kalimantan state consist of indigenous peoples such as the Melayu and Dayak peoples, as well as immigrants from other places. Most of the Dayak people live inland, moving from place to place as they practice slash-and-burn farming. These people are especially dependent on a variety of forest products. As an example, in 1993 Dayak living in Kab Sanggau of West Kalimantan state categorized over 1,000 plants (and their parts) into 5,000 named items that they utilize for food, building materials, medicines, and tools such as basketry or rope. As a people that receive benefits from the forest, they've established strict customary laws regulating the management of forest resources, and have accumulated a wealth of experience and knowledge regarding the utilization of forestry products.

Indonesia experienced an economic crisis in 1997, followed by a forest fire of great magnitude. With the ensuing presidential election in 1999, a revised decentralization act was enforced in 2001, a substantial change for local administrative organizations. Still, the unstable political situation remains unchanged, and as social unrest and the deterioration of administrative functions accelerate, the number of illegal acts by both corporations and individuals are increasing. The situation is same in West Kalimantan state, which is beyond the reach of the central government's power, and illegal acts resulting in severe environmental damage -- such as illegal deforestation and mercury discharge from gold extraction -- are seen frequently in the area. Furthermore, great amounts of land in West Kalimantan are devoted to large-scale oil palm plantations, an industry receiving a great deal of criticism both domestically and internationally for accelerating both the speed of deforestation and the impoverishment of indigenous peoples dependent on the forest.

'Tembawang' is a word the Dayak use for the ancestral forests that they have protected for many

generations. Depending on the region, there are many types of tembawang, but generally speaking, it refers to forests that include fruit trees and other valuable flora cultivated by the Dayak over generations. Dayak consume Tembawang products themselves, and trade in surpluses (thereby supplementing their income); the harvesting is also a source of pleasure for the local Dayaks. It is thought that the last forests to remain around the villages in West Kalimantan state are all tembawang.

§ Outline

In this project we cooperated with the Yayasan Daian Tama Foundation to survey ways to create a new type of tembawang, based on traditional tembawang but cultivated in deteriorated forests and denuded lands around villages. Since fiscal 2000 we have undertaken a survey on tree growth volume and seedling tests for 27 native species at a 10-ha test forest within the Yayasan Daian Tama Foundation's research facility located in Kab Pontianak, West Kalimantan state.

In addition, we stayed at an illegal deforestation camp set in a commercial deforestation area to collect information on illegal deforestation activities. At the same time, we collected documentation on forest-related laws and regulations, and traditional forest utilization. We were also able to conduct an aural survey regarding tembawang at two local villages.

§ Findings

In terms of growth volume, other than deaths seen in the severe dry season in February and March, 2000, seedlings grew satisfactorily. However, we were not able to collect data to calculate the stored carbon volume because this test forest had been afforested only a year previous. To obtain such data, we need to accumulate more data on a continuing basis.

For seedling tests, we tried to improve the survival rate by growing them in a simple plastic greenhouse, but the number of plants that withered and died exceeded our expectations. We need to acquire more proficient skills on ways to manage and utilize seedling crops.

Illegal deforestation in Kab Sintang is typical of many developing nations: Local strongmen give poor people tools, and they fell trees along the forestry roads. Local authorities and police are involved as well, so there is virtually no power to stop the practice. Accordingly, many villages populated with illegal deforesters are starting to form along forestry roads. Moreover, an anarchic land use based on customary laws and a lack of regulations is starting to arise in these villages.

According to the aural research on tembawang at the two villages, we found out that one family

typically owns 0.5-5ha of tembawang, and this ownership is guaranteed by the village headman or a person specially selected for this purpose. People in both villages expressed their views on the importance of tembawang, and said that they want to maintain tembawang in the future. Some called for a plan for increasing income from their tembawang.

Troubles related to land ownership happen easily in such places, and a large-scale afforestation project runs the risk of having a strong effect on the traditional land use of local people. It is therefore not appropriate. In other words, a method involving small-scale afforestation that is located around villages and similar to tembawang will contribute to the local peoples' lives, and is therefore the most realistic option.

Costs of carrying out a small-scale afforestation project in terms of area and stored carbon volume would be high if it were undertaken solely by an external organization. However, costs could be reduced by increasing the stored carbon area. This would be possible if an NGO could demonstrate a model project that the local people could take part in; The NGO would provide technical advice to the local people, who could create a tembawang-style forest on communal land, by and for themselves. To accomplish this, the most important thing is to provide incentive for the local people by modeling the project after the tembawang.