



With reference to named examples, assess the effectiveness of measures taken in managing tropical rainforests to achieve sustainability. [8]

In Kalimantan, Indonesia, the Ministry of Forestry has implemented a few measures for the sustainable management of the Indonesian rainforests. The first measure is afforestation and deforestation. Afforestation is the planting of trees on areas that were not covered with forests before, while reforestation refers to the replanting of trees in formerly forested areas. The MOF has set out to restore 900,000 hectares of forests annually in Kalimantan through the Forests and Land Restoration Initiative. The locals are involved in replanting trees in areas affected by forest fires, while timber companies are required to replant and retain a minimum of 25 commercially valuable trees per hectare of forests that they have logged, and the costs of replanting these trees are paid by them.

It is effective because the teak trees that are commonly planted can restore forest areas quickly. Teak trees is a commercially valuable timber species that is fast growing. It takes only about 5 years before it is suitable to be logged again, compared to the usual 20 years for a tropical rainforest tree. This allows the replanted teak trees to be logged at a sustainable rate. In areas where afforestation and reforestation projects have successfully attracted the local people's active participation, such as in East Kalimantan, significant restorations of forests have been made possible.

However, this measure has not achieved the aim of restoring large areas in Kalimantan. The rates at which forests in most places are replanted are still slower than the rates at which they are cleared, which may be because the incentives given to the locals to replant trees are not attractive enough for them to participate in forest restoration projects. Also, because only teak trees are planted to restore an entire area of a forest, the original biodiversity of tropical rainforests is lost. A plantation of teak trees is unable to support the flora and fauna species living in the original rainforests.

Another measure taken is conservation, which refers to the careful use of resources, such as forests, to prevent them from destruction. Protected nature reserves have been set up in some areas in Kalimantan where logging is banned. An example is the Betung Kerihun Nature Reserve in west Kalimantan. Set up in 1992, it covers an area of 8000 km² and is home to a diverse range of plant and animal species, including the Orang Utans. It is successful as a way to protect tropical rainforests because it preserves their original biodiversity. The plant and animal species are protected from any damage due to human activities like logging. Also, the reserves can be managed sustainably through agreements among countries, e.g. the WWF has managed to get the agreement of three nations in a joint-effort to protect the reserve.

However, a limitation is that illegal logging activities may still take place without being detected. Such activities may be difficult to monitor due to the vastness of the nature reserves, remoteness of the logging sites and the lack of manpower. Besides, a balance between conservation and economic needs are required. In the case of Kalimantan, timber exports generate income for Indonesia. Therefore, there is a limit to the number of nature reserves that can be built as the to cutting down of trees to manufacture products such as furniture are still necessary for economic growth.

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