ABSTRACT

HERRY PURNOMO. A Modeling Approach to Collaborative Forest Management. Under the direction of Rudy C. Tarumingkeng, Endang Suhendang, Dudung Darusman, Mohammad Syamsun and Upik Rosalina.

A successful sustainable development strategy requires that forest management be carried out in a participatory way. This includes the involvement of local communities. The importance of communities’ participation has been written into Indonesian Law No. 41 on Forestry (1999). However, how this law can be implemented in areas already allocated to a concession holder is still unclear. The state-owned company, Inhutani II Sub Unit Malinau, has managed a forest area in Malinau District, East Kalimantan for over 10 years. Forest-dependent communities located in the managed area were Long Seturan, Long Lorah and Langap villages. The company managed the area based on plans approved by the local and central governments. They established permanent sample plots for measuring the stand growth and yield data in their area, and were asked to improve the well-being of local communities. However, the schemes did not give the company sufficient space to manage the area creatively, or provide a systematic way to involve the communities in the management of the forest.

This research was aimed at seeking scenarios of sustainable forest management (SFM) that addressed the above limitations. To reach this aim, two research hypotheses were proposed:

1. Local forest stakeholders can define their own SFM Criteria and Indicators (C&I) for specific sites where they live, or that concern them;
2. Collaborative management of forests by all relevant stakeholders will achieve better forest management outcomes.

An artificial society of primary forest actors was built using a multi-agent system approach, used for developing scenarios to increase the sustainability of forest management. Indicators of forest cover and standing stock, communities’ incomes, company revenue and taxes paid to local and central governments measured the sustainability.

The research results showed that local communities that lived in the area of Inhutani II were able to define C&I of SFM. The local C&I are not different from the generic or scientific C&I of SFM. However, these C&I are formulated with different structures and argumentations. The developed knowledge-based system found a way to harmonize this knowledge. Collaboration between concessionaires and the communities appeared to be the most suitable alternative for SFM - particularly for improving communities’ incomes without decreasing the quality of the forest. An appropriate decentralization policy is a condition for implementing collaborative forest management.