ABSTRACT

BAHRUNI. A System Approach to Estimate Total Economic Value of Forest Ecosystem: Case Study on the Logged of Production Natural Forest.

Supervised by PROF. ENDANG SUHENDANG as chairman of the advisory committee, PROF. DUDUNG DARUSMAN and PROF. HADI S. ALIKODRA as members of the advisory committee.

Sustainable forest management needs the economic and ecological balance. The change of forest management with the strong sustainability paradigm should be supported by moral awareness which is predominated from the beginning by anthropocentric ethics and then shift to biocentric and ecocentric.

Total economic value (TEV) of forest ecosystem comes from various forest products such as timber, non timber forest products, and ecological function. TEV is based upon human preference and there are use value, option value and existence value. This research has following objectives: (1) to answer the question on how to measure the dynamics of total economic value of forest ecosystem, and (2) how to harmonize various values of stakeholders in forest management. The forest ecosystem values could be estimated using a system approach which is based on ecological and economic linkages. This system concerns on dependency nature of forest products and differences of stakeholders interest. System is constructed to evaluate impact of cutting intensity to TEV dynamics, which is consist of subsystem of forest stand, timber and non timber forest products, ecological function, TEV and it’s distribution among stakeholders.

Simulation result of harvesting intensity by 0%, 50%, 76% and 100% show that the relationship between use value of timber product and other values (use value of non timber forest products, erosion control and water regulatory functions, option and existence values of biodiversity) is trade off and non linear. Each component of TEV is influenced by forest stand condition, as the result of harvesting intensity. A harmonize stakeholders’ interest is measured by total economic value distribution and sustainability of forest resources. Result of simulation shows the harmonize will be achieved at 50% until 76% of harvesting intensity. To allow implementation of multiple use management, forest policy change is needed such as institutional setting, forestry planning system and facilitating of NTFP market.

Keywords: total economic value, stakeholders, sustainability of forest resources, forest policy