

Silviculture Agroforestry Regime: Compatible management in Southern Gunung Merapi National Park, Java, Indonesia.

Abstract

Silviculture agroforestry regime (SAR), which is a compatible management with forest rehabilitation and also renewal zoning system of the national park, was started to increase the agroforestry productivity surrounding Gunung Merapi National Park (GMNP). In addition, SAR also supported the basic information succession of Mount Merapi eruption in 2006 to strengthen Merapi lava tour. This is an innovative step in developing GMNP, in which its pro-poor conservation is not only based on land productivity, but also based tourism. This study was begun with the development of a permanent plot to study succession (May 2008-November 2009), and the impact of community intervention on grass stock at GMNP, as well as to assess agroforestry typology and its implication on the areas surrounding GMNP. SAR was developed using landuse model based on limiting the factor of each agroforestry cluster. Choosing the treatment in SAR refers to the actual condition and opportunity every agroforestry cluster and sensitivity analysed until the intervention on the GMNP was minimal. The implementation of SAR was done with a software known as Stella 9.0. There are five SAR models which are appropriate for agroforestry cluster (AF); these are labelled as AF1-SAR1, AF2-SAR2, AF3-SAR3, AF4-SAR4 and AF5-SAR5. SAR is based on resources sharing whereby space is arranged through crown pruning and also rationalization number of dairy cows. In addition, SAR has a packet management for synergizing function of private lands (homegarden, dry field and land village as a unit management) and intensification by land tillage, renewal of grass and fertilization. In particular, SAR1-5 has the ability to balance agroforestry management with decreasing local community intervention and increasing biodiversity level on GMNP. The ratio for grass productivity outside GMNP with grass necessity and implementation of SAR was close to an optimum point (1). Meanwhile, the ratio values of SAR1-5 were 0.982, 1.010, 1.44, 1.047 and 1.253, respectively. Nonetheless, the implementation of SAR needs more technology of silviculture agroforestry and a full support from stakeholders.

Keyword: Silviculture; Agroforestry; Compatible management; National park.