ABSTRACT

NI WAYAN FEBRIANA UTAMI. Landscape Characteristic of Bamboo Stand in The Upper Stream of Kali Bekasi Watershed. Under supervision of HADI SUSILO ARIFIN, NURHAYATI, and SYARTINILIA

A high rate of land use change around the upper stream of Kali Bekasi watershed currently causes various environmental problems including threat on biodiversity. Indonesia, which is namely as mega-biodiversity country, has about 143 bamboo species and 60 species was reported that they were planted in Java. Nine of them were endemic species and it has been utilized widely by rural people for daily uses. The objectives of this research were to map a bamboo distribution; to analyse bamboo and non-bamboo stands diversity and biomass; to analyse bamboo utilization and management based on traditional ecological knowledge; and to establish recommendation for sustainable bamboo management. Survey method was used for collecting bamboo data. Data analysis used landcover and bamboo classification by image classification analysis, bamboo and non-bamboo biomass index, diversity index analysis by Shannon’s index, and local ecological analysis. Result showed that bamboo was occupied about 5,360,89 ha or 11.39% of total area with six bamboo species. The highest bamboo diversity index was in the higher part of the upper stream of Kali Bekasi watershed (0.62), however the highest bamboo biomass index was found in the lower part of the upper stream of Kali Bekasi watershed (98.96 ton/ha). About 230 trees and belong to 29 species and 27 above-ground plant species were also found in the surveyed area. Local knowledge about bamboo cultivation and management, their values and uses to environment and daily life were to keep bamboo still exist. Sustainable bamboo stands management should be done with the agroforestry concept in mixed garden. This option would be better cooperated amongs farmers and local community in order to conserve bamboo and tree species diversity with harmony to local wisdom.

Keywords: agroforestry, bamboo, biodiversity, sustainable management, local ecological knowledge (LEK)