

ULU MUDA FOREST RESERVES ECOSYSTEM SERVICES: POLLINATION

Norliyana A^{1*}, Mohd-Fahimee J² & Rohana AR¹

¹Research Planning Division, Forest Research Institute Malaysia, 52109 Kepong, Selangor, Malaysia

²Agrobiodiversity and Environmental Research Centre, MARDI Headquarter, 43400 Serdang, Selangor, Malaysia.

*norliyana@frim.gov.my

Abstract - Pollination is one of ecosystem services provided by tropical forest as addressed in The Millennium Ecosystem Assessment. Roughly, two-third of the world's agriculture species cultivation required pollination. Studies shows that 70% of tropical crops seem to have at least one variety for which production is improved by animal pollinators. Most common pollinators live naturally in the ecosystem known as wild pollinators. The objective of this study was to quantify the economic value of pollination services by wild pollinators of Ulu Muda Forest Reserves, Kedah. Agricultural data was obtained from annual statistic of plantation production, Department of Agriculture Kedah. Data incorporated the list of farmers/villages, types of crops planted, annual area planted (ha), annual area harvested (ha) annual production (kg) and annual production value (RM). The analysis of this study uses a market price, production function approach to calculate the economic value of pollination effects. The economic value of pollination services was estimated by multiplying production value of each crops with its pollinator dependence ratio. Results of analysis on economic value of natural pollinator services based on pollinator dependence ratio for Ulu Muda FR was RM 60,719,000. These accounted for 56% of the total production values for the region. It demonstrated that the natural pollinators have important impacts and benefits to agricultural sectors through pollination services provided by the nearby forest. With improved pollination services, crop production could be further increased, successful agricultural production, pollination would contribute significantly to world food security.

Keywords: Agriculture, natural habitat, wild pollinators, pollination, dependency ratio