

ABSTRACT

In the villages of Dulamayo Selatan, traditional agroforestry systems are called *ilengi*. The structure of these forests resembles natural forest, and provide numerous products to local people. There are six different kinds of *ilengi* agroforestry, which are planted with different species according to the products which farmers aim to harvest, including food, medicine and timber.

The purpose of this study is to characterise *ilengi*, identify the diversity and richness of tree species in this forest characteristics identify, farmers' knowledge about the selection of tree species, and their preferences for various plants and tree species *ilengi*. The methods included analyzing the diversity index and the density of tree species, tree species richness index, basal area, and the *Local User Value Index* (LUVI).

Results showed the Diversity index (H') and species richness (Z) in *ilengi* similar to natural forests to be H' 2,81 and Z 0,74 respectively. Specifically the type *ilengi* which aims to produce, fruit and palm, has a value of H' 2,03 and a Z value of 0.70 for *ilengi* which aim to produce wood and fruit. Based on tree density, basal area, number of individuals and number of species, there are differences between the six profile types of agroforestry *ilengi*, because there are efforts by farmers to enrich the number of trees.

Farmers in agroforestry *ilengi* are selecting tree species based on the consideration of biophysical factors tend to prefer *Aleurites moluccana*. Whereas, landscape factors are more important, farmers tend to choose *Swietenia macrophylla*, and socioeconomic factors are important, farmers prefer *Syzigium aromaticum*.

The selection of tree species is closely related to the use of agroforestry *ilengi* as a source of food, medicine, heavy construction, light construction, equipment/tools, firewood, handicraft, tradition, objects that are sold and for the future.

Keywords : Agroforestry *ilengi*, biodiversity, species richness, the use of Agroforestry

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