Carbon stock and plants biodiversity of pekarangan

Abstract

The presence of vegetation in Pekarangan can be proposed to mitigate global climate change impacts by CO₂ sequestration and at the same time to promote the availability of food for the community. The aims of this research is to calculate carbon stock and biodiversity in pekarangan, and to compare carbon stock and biodiversity on three levels of Cisadane Watershed. Four groups of Pekarangan defined on a purposive random sampling. Allometric models were developed to estimate aboveground biomass of vegetation, and an inventory was conducted in 48 pekarangan. Shannon Weiner Index (H') and Margalef Index (D_m) are used to
evaluate biodiversity, averaged 2.84 and 5.10 (G1); 2.55 and 4.27 (G2); 2.56 and 4.52 (G3); 2.68 and 4.84 (G4), while carbon stock averaged 33.20 Mg Carbon/ha (G1); 29.97 Mg/ha (G2); 59.18 Mg/ha (G3); and 40.98 Mg/ha (G4). There is no relationship between biodiversity with carbon stock on pekarangan ($R^2 = 0.02$), or tree's biodiversity with carbon stock ($R^2 = 0.23$). High resolution satellite imagery can be used to extrapolate carbon stock and plants biodiversity of *Pekarangan* at watershed level.

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