ABSTRACT

Mangrove forests are well-documented as effective carbon sink and believed as potential solution to mitigate human-induced climate-change. The current study performed a preliminary assessment on carbon storage capacity of the rehabilitated mangrove area in Barangay San Rafael IV, Noveleta, Cavite, using reconnaissance survey method. Two sampling sites were purposively selected with 6 plots, each measuring 10 m x 10 m quadrats. Using standard calculations, the DBH of adult trees were measured for the determination of tree carbon density, and soil samples were analyzed for the soil and bulk carbon densities. Diversity indeces (H') of 0.5301 and 1.0631 were calculated for site 1 and site 2, respectively, with *Avicennia marina* as the most abundant mangrove species. As predicted, site 2 had higher soil carbon density of 174.67 t/ha^{-1} with 125 mangrove trees. Surprisingly, site1 had higher tree carbon density (39.88 t/ha^{-1}) than site 2 (4.86 t/ha^{-1}) due to the presence of more fully developed trees. Overall, the total Carbon Stock (161.13 t/ha^{-1}) of the area could be credited to the existing mangrove vegetation as a major determinant of carbon storage.T-test ($p < 0.01$) revealed a positive relationship between mangroves and their carbon storage capacity, meaning more trees would mean higher carbon stock in the soil and biomass. In conclusion, high carbon storage capacity of the on-going mangrove rehabilitation project in Noveleta serves as good indicator and efficient approach for climate change mitigation and adaptation for the local community.

Key words: mangrove forest, carbon storage, Reconnaissance survey, A.marina, climate change, carbon stock