EVALUATION OF CARBON SEQUESTRATION POTENTIAL IN REHABILITATED MANGROVE FORESTS OF SOUTHERN THAILAND

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Abstract- Mangroves are ecologically and economically important forests of the tropics. Especially, they are increasingly seen as carbon-rich ecosystems. However, there are few empirical measurements of long-term carbon storage in mangroves or of how storage varies across environmental gradients. The mangrove rehabilitation sites at the abandoned shrimp ponds in southern Thailand have been planted since 1990. In this paper, we aim to evaluate carbon accumulation in this rehabilitated mangrove sitein southern part of Thailand. Therefore, we measured carbon contents in soil from surface to 2.0 m depth and we investigated the tree height, DBH and weight of each part of tree in mangrove planting sites since 1990. In addition, soil chemical properties such as pH, electrical conductivity, Na concentration, and oxidation-reduction potentialwere measured. Consequently, carbon content in soil was gradually increased with planting age.The total weight of mangrove tree after 25 years in our planting site was from 1.8 to 3.6 ton/ha.Therefore, the rehabilitated mangrove forest would be as a sink source for carbon.

Keywords- Biomass, Carbon sequestration, Mangrove, Shrimp ponds, Soil chemical properties.