

# **A WATERSHED-SCALE ASSESSMENT OF PRESENT AND FUTURE CARBON STOCK: GIS APPLICATION IN KHLONG YAI WATERSHED OF THAILAND**

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## **ABSTRACT**

A study was carried out to assess the current carbon stock in different agricultural land uses and investigate the respective trend of changes in the coming ten years using available methodologies. A nested quadrature sampling technique of different quadrature sizes was used to collect the biomass data of eleven major land uses of the watershed. Existing soil data was used to estimate soil carbon. All the data preparation and analysis works were carried out in GIS environment. The total carbon stock of agricultural land uses of the study area was estimated to be 20.5 million tons, out of which 41.5% was biomass carbon and 58.5% was soil carbon. Para rubber land use had the highest average biomass C while paddy land use had the lowest. It was also analyzed that the type of land uses that would maintain desirable level of C in coming ten years from sustainability viewpoints