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## Multitemporal analysis of change of soil use and vegetable coverage for the development of a probabilistic prospective model and estimation of carbon stock in the capucuy river basin

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The main objective of this research is to build a simulation model of land use change and coverage (LULC) of the Capucuy River Basin (Ecuadorian Amazon Region) by the year 2026 through the use of official historical cartographic information to estimate changes in LULC and carbon stock. First, it was quantified and defined the most representative anthropic drivers that have been affected LULC in the basin and modeled with historical LULC cartography from the years 1990 to 2016 with the help of DYNAMIC EGO program. Second, forest biomass was determined using an indirect method where 3 forest plots were established to obtain dasometric parameters and estimated the carbon stock of each different type of forest of the basin. Finally, agricultural carbon stock was determined with surveys and secondary data through the use of DNDC program. The results obtained show that the simulation of the maps of 2008 - 2016 allows us to obtain a simulated map of 2026 with an error of less than 5%, presenting the most significant error in the anthropic area with a 3.18% difference. It is expected that by 2026 the forest, the body of water, agricultural land and the anthropic zone occupy 56.83 %, 2.14 %, 40.09 % y 1.34 % of the total area of the Capucuy River Basin, respectively. Also, this model allowed to estimate the carbon stock reduction and its impact on climate change.