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49. Rural landscapes and ES in Tropical countries (OPEN)

A geocology approach to map ecosystem functions in Atlantic Forest – Brazil.

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The growing demand for natural resources has direct impact on ecosystems services. Thus, methodologies about the functioning and quality of ecosystem services contribute to sustainable planning and are relevant to society.

This study presents an approach to understand and analyzes the geocological functions in a rural watershed in Atlantic Forest, Brazil. The main goal of this research was to identify and map geocological functions. The research starts from the premise that the study of geocological functions is the first step to understanding ecosystem services, what could contribute to stakeholders take decisions about the better use of natural resources. The methodology used included the landscape units definition, according Rodriguez *et.al.*, (2007) As a result, seven landscape units of first order; twelve landscape units of second order and twenty tree landscape units of third order were identified. After this step, thirteen ecological functions, based in de Groot *et al.*, (2002) were selected: eight regulatory functions (gas regulation, climate regulation, nutrient cycling, water regulation, water supply, disaster prevention, soil retention);three production functions (food production, raw material production, genetic resources), one habitat function (habitat maintenance) and one information function (landscape opportunity). Based on third order landscape units and on the geocological functions, a correlation matrix was defined, using the Delphi method of expert consultation. In this matrix, the experts should answer what degree of relevance that a function has in a landscape unit. These information were the base to generate thirteen maps – one for each analyzed function – that shows the relevance degree of each function in each third order landscape. Finally, a synthesis map, to facilitate the functions understanding was generated. This map highlighted the potential of landscape to generate geocological functions and has the possibility to be used for stakeholders take decisions about the landscape planning.