desert- steppe were relatively higher rainfall variability than steppe. We performed a vegetation survey in each area and interviewed pastoralists along grazing gradients. We also estimated the cover of all species present in each survey plot and asked pastoralists to evaluate whether the plots were suitable for grazing. Floristic composition changed nonlinearly along the grazing gradient in both desert-steppe and steppe areas. Pastoralists in the desert-steppe area perceived the post-threshold vegetation state negatively, whereas pastoralists in the steppe area perceived them optimistically. We suggest that, although the observed ecological patterns were similar, the pastoralists' perceptions of them were influenced by environmental context (e.g., rainfall variability), which has important implications for sustainable rangeland management.

0210

Land Use Change in two watersheds under agriculture use in the mountains of Rio de Janeiro State – Brazil: an approach to support the agriculture sustainable planning.

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The historical agricultural expansion in Brazil is characterized by the lack of the adequate use of the land. As a consequence, many environmental problems can be observed in different scales and they affect the whole society. This paper is about the Land Use Change in two watersheds located at mountainous region of Rio de Janeiro state – Brazil, at the Atlantic Forest biome. They are strategic areas for agriculture production in Rio de Janeiro state, because their output supplies the main cities of the state. For the development of this work the association between remote sensing and GIS were used. Such tools have contributed to the advance of knowledge and also for the development of better analytical work. Both watersheds have a mosaic of land uses and the agriculture is practiced in small properties like a family farming. However, the agricultural production is different: in one of the watershed the main product is flower whereas at another one is horticulture. The watersheds are similar in one aspect: the continuous deforestation towards the forest frontier. But, through the approach adopted in this study it was observed that, despite the watersheds were under agricultural use, the different soil management and the diversity of crops contributed to the spatial heterogeneity at the watersheds. This fact shows that it is necessary to understand the agricultural practices in a scrutinize level and then propose more appropriate practices to each reality based on sustainable landscape planning.

0222

Agricultural land use and soil carbon stocks in the Brazilian Cerrado

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Land use changes (LUC) in Brazil, as a response to enhanced global demands for food, fibre, and energy, shape the landscapes, significantly impacting society, economy and the environment, turning Brazil into the largest contributor to greenhouse gas (GHG) emissions. In the tropics, most of the carbon lost to the atmosphere due to LUC derives from the oxidation of plant biomass and decomposition of soil organic matter. In the last 20 years, different tropical agricultural research institutions have developed a number of agronomical techniques able to enhance carbon sequestration, and reduce the negative impacts to the climate generated by agricultural use of the land. The most striking example is the no-tillage production system, with the continuous cultivation of a field without removing plant residues from the previous crop. More recently, the Crop-Livestock-Forestry Integrated system was developed and is being assessed in different socio-environmental settings in Brazil. Knowledge of the relations between land use systems and soil carbon stocks is essential for an effective assessment of their effects on carbon dynamics, climate change and sustainability. A comprehensive literature survey was carried out to analyze existing knowledge on soil carbon stock and related properties, associated with land cover in the Cerrado biome, Central Brazil. The data show that, in general, conversion of Cerrado vegetation to agricultural use significantly reduces soil