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CHALLENGES FOR INTEGRATIVE RESEARCH IN LBA: TOWARDS SUSTAINABILITY

M. Batistella, D. A. Alves, E. F. Moran

[1]Embrapa Satellite Monitoring, Campinas, SP, Brazil; [2]National Institute for Space Research, São José dos Campos, SP, Brazil;: [3]Indiana University, Bloomington, IN, United States

The Large Scale Biosphere-Atmosphere Experiment in Amazônia (LBA) is the largest science effort organized to study the climatological, ecological, biogeochemical, and hydrological functioning of the Amazon, the impact of land use changes on these functions, and the interactions with the Earth system. As LBA progressed, understanding land-use/land-cover changes became a priority, with a particular focus on processes such as deforestation, land abandonment, land degradation, and land-use ntensification. Many LBA projects include a land-use/land-cover component and it is now time to take on the challenge of developing cross-scale assessments towards an understanding about the complex human-environment interactions, from the landscape to the region. This presentation will address some methodological advances in detecting and mapping land-use/land-cover changes in Amazônia; elements on patterns and processes related to these changes; and propositions for future integrative work on interactions among the components of LBA, with particular attention to thresholds and non-linearities. Some LBA investigations have contributed to an integrative research agenda, through dialogues among natural and human sciences. A major challenge is to capture regional differences as well as to understand local-scale dynamics. A more complex framework for LBA research then arises, indicating the need for continually looking at linkages between land-use/land-cover changes and other processes. LBA is initiating a new programmatic effort, that will be essential to enhance its interface with other similar research initiatives. The recognition of continually and creatively reviewing the integration of human and natural sciences is among the lessons learned and an incentive for a science of sustainability in Amazônia.