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Abstract Book

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Plenária VI

(Plenary VI)

17.1: Como as Descobertas do LBA podem ser Úteis para a Agricultura na Amazônia? (*How can LBA Achievements be Useful to Agriculture in Amazônia?*)

Tatiana Deane de Abreu Sá, Embrapa Amazônia Oriental, Tv. Enéas Pinheiro S/N, 66095-100, Belém, PA, Brasil,, tatiana@cpatu.embrapa.br (Apresentador / Presenting)

Although relatively few studies undertaken by LBA are directly related to agriculture (considered in a broad sense, including agriculture, livestock and forestry), a large proportion of the results achieved by this project is prone to be used in many senses and scales towards sustainable agriculture. Considering that agriculture is the most important driving force promoting land cover change in Amazonia, most of the LBA studies on biophysical and biogeochemical impacts of that change are potential information sources to support strategic and tactical actions associated with agriculture. Nevertheless, little effort has been pursued to integrate LBA results into an agricultural approach. An attempt is made *to translate* into an agricultural perspective results of studies covering issues associated to the LBA science themes, *i.e.* Physical Climate, Carbon Storage and Exchange, Biogeochemistry, Land Surface Hydrology and Water Chemistry, and Land Use and Land Cover. An effort to transform the information generated by LBA into environmental decisions is urgently needed considering that one goal of decision-making and planning institutions associated to agriculture ultimately desire to contribute to the reduction of deforestation and land degradation in Amazonia. A good example is the potential contribution of results generated by LBA on carbon balance components in different ecosystems and land uses to PROAMBIENTE, the recently created Brazilian governmental program oriented to the socio-environmental development of family agriculture in Amazonia. Ultimately, as LBA already exhibits outstanding records in training & education in areas related to agriculture, this may also be considered as a very important and sustainable contribution of LBA to agriculture in Amazonia.

17.2: Sensoriamento Remoto do Corte Seletivo de Madeira: Desafios, Sucessos e o Futuro (*Remote Sensing of Selective Logging: Challenges, Successes, and the Future*)

Gregory Paul Asner, Carnegie Institution, gpa@stanford.edu (Apresentador / Presenting)

Carlos Moreira de Souza Jr., IMAZON and the University of California, carlos@geog.ucsb.edu

Selective logging is one of the most difficult forms of land-cover change to detect with remote sensing. Variation in the biophysical

attributes of selective logging challenge traditional methods. LBA has supported the development of improved remote sensing

approaches for detecting the location of selective logging, for quantifying forest canopy damage associated with timber harvest, and for monitoring rates of forest canopy closure following disturbance. Different methods have now been compared, and the strengths and weaknesses have been documented. In addition, remotely observed changes in forest canopy cover following timber harvest are now being linked to a range of ecological and biogeochemical processes in the field. This presentation will provide a detailed summary of the overall progress towards understanding how selective logging affects Amazonian forest ecosystems at the regional scale.

17.3: Uma Análise Integrada da Ecologia, Uso da Terra e Dinâmica da Cobertura Florestal na Amazônia Oriental (*An Integrated Analysis of Ecology and Land Use and Land Cover Dynamics in Eastern Amazônia*)

Ima Célia Guimarães Vieira, Museu Paraense Emílio Goeldi, ima@museu-goeldi.br (Apresentador / Presenting)

Land use analysis is central to our understanding of the role that deforestation processes play in the terrestrial biosphere as a source and sink of atmospheric CO₂, and it also helps us to advance towards modeling the links between terrestrial and atmospheric processes and to predict scenarios and support policies. By looking at long and short-term rates of change and its spatial distribution, land use analysis provides a way to discriminate the role of different variables and their importance at different scales. Our approach to land use and cover change analysis combines studies from LBA and GEOMA (a Brazilian research network) initiatives. These use different approaches depending on the question, scale and levels of interest, and availability of data. Some of our results from LBA, contrary to previous expectations, show that landscapes which were colonized and initially deforested several decades ago display a fast dynamic change of land use and land cover that influences biodiversity and C dynamics and that induces initiatives to develop ways to explore better the remaining natural resources. From GEOMA we have preliminary results showing a rapid deforestation process in a new recent frontier in Para state associated with slavery and illegal activities. The understanding of all these aspects in each of these distinctive patterns may contribute to the development of strong public policies leading toward sustainable development of new and old frontiers in the Brazilian Amazonia.