TroFCCA
Tropical Forests and Climate Change Adaptation

Seminario Internacional
International Workshop

Adaptación al cambio climático:
el rol de los servicios ecosistémicos

Adaptation to climate change:
the role of ecosystem services

3 al 6 de noviembre de 2008
CATIE, Turrialba, Costa Rica

Resúmenes
Abstracts

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EL ROL DE LOS SERVICIOS ECOSISTÉMICOS

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THE ROLE OF ECOSYSTEM SERVICES

SIAASE 2008

3 al 5 de noviembre de 2008
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AGROAMBIENTE NETWORK: ECOSYSTEM SERVICES IN AGRICULTURAL LANDSCAPES IN THE BRAZILIAN AMAZON

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Family farms are by far the most numerous component of the agricultural sector in the Brazilian Amazon. However socially vital for the development of the region, these small landholdings' agricultural and cattle ranching activities frequently overdraw and degrade natural resources, threatening important ecosystem services. Predominant agricultural practices have been marked by shifting cultivation, with intense use of fire and low productivity, causing high rate of destruction of natural forests. Land use changes is the most important contributor of greenhouse gases emissions in Brazil. Ecosystem services are promising tools to promote development and mitigate global changes. Although environmental services programmes have been launched by some Amazon states, there is still insufficient scientific knowledge to fully support such initiatives. Agroambiente is a research network from Embrapa and collaborators committed to investigate alternative agricultural practices for the maintenance of ecosystems services in the Brazilian Amazon. The network was firstly created to offer scientific support to a Government Program for ecosystem services compensation to family farmers (Proambiente Program), but has been expanding its scope to integrate social and environmental sciences. Current research activities and their respective methodologies are: 1) Links between social perspectives and agricultural management decisions, carried out by interviews with land owners; 2) Search and validation of innovative production systems applied by farmers assessing inputs and productivity rates in different management conditions; 3) Construction of indices for assessment of ecosystem health in rural establishments through the development of an evaluation system (Ecocert-Proambiente); 4) Management alternatives for fire risk and accidental burnings abatement; 5) Evaluation of land use/land cover dynamics based on Landsat TM images and land use histories by interviews with the farmers; 6) Evaluation of carbon sequestration potential by estimating carbon stocks in different compartments of secondary forests; and 6) Appraisal of available market-based mechanisms for carbon schemes. Some rural communities have already been involved in sustainable agriculture practices such as agroforestry systems and fair trade (e.g. south western Brazilian Amazon). Production systems adopting no-till and no-fire may initially have lower productivity than traditional systems, but some viable management alternatives have been found. The Ecocert-Proambiente system was developed and validated with 62 indicators that covered social, economic, environmental and property management aspects. Simulations indicated that avoided deforestation and maintenance of secondary forests were more feasible alternatives in terms of cost-benefit than the CDM negotiations from the establishment of agroforestry systems. Considering this scenario, estimatives in secondary forests of Pará state indicated aboveground biomass varying from 22 to 247 Mg ha-1. Altogether, these results are important to guide public policies in Brazil towards environmental conservation and social benefits in the Amazon.