Biophysical and socioeconomic sustainability of agroforestry systems in the Amazon

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Preferred session ***E2. AF-based livelihood strategies for smallholders in the Amazon***

Abstract The main objective of this work was to evaluate the biophysical and socioeconomic sustainability of agroforestry systems (AFS) implanted in the state of Roraima. The study took place in experimental fields in the state of Roraima, with information generated between 1995 and 2007. Two agroforestry models were studied, being composites of annual cultures at the beginning of the implantation followed by banana tree *(Musa sp. cv. Missouri);* Inga *(Inga edulis); Gliricídia* (Gliricidia sepium); *Cupuassu (Theobroma grandiflorum);* Palm Heart *(Bactris gasipaes);* Brazil nut (Bertholletia excelsa); Cupiuba *(Goupia glabra)*. The low fertility of soil affected the growth and the productivity of the annual crops; cassava had the best results. The biomass from the pruning of Inga and Gliricídia contributed to the maintenance of soil fertility. Cupuassu was the most productive species and became the most important component of the AFS. The AFS studied were financially viable and generated revenue in each year of the study. The benefits generated by annual crops were not sufficient to overcome the costs of the systems, except for cassava, which has a broad tradition in the Amazon, and has been able to pay off the costs of establishment. Considering the cultural and economic performance of cupuassu, this component should be considered as a priority to for AFS in the region. The optimized agroforestry model (OAM) increases productivity and rentability. The scenario studied, considered as a means of planning, deploying and managing AFS, was found to be an efficient practice for selecting models with agroforestry species with the greatest aggregation of value and profit. AFSs, when deployed and managed properly, are systems for production and use of land that use the planting of annual and perennial crops for a long period, are available to prevent fires and deforestation in the Amazon region.

Agroforestry practices, opportunities, threats and research needs in the highlands of Jeldu and midlands of Guder Weredas of Western Shewa zones of Oromia region, Ethiopia

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Preferred session ***A3. Role of agroforestry in landscape-scale conservation strategies***

Abstract Understanding of local practices and knowledge are very important for promotion and introduction of agroforestry intervention options, research and development endeavours. Informal and formal surveys were conducted at Jeldu and Guder district in two peasant associations (PA)) of Western Shewa zones of Oromia region, Ethiopia in 2006 2007; their objectives were to describe and understand indigenous agroforestry practices, identify and characterize tree species, and identify constraints for tree planting and expansion. For the informal survey, individual and focus group discussions, a transect walk, key informant interviews, and physical observation were employed. Similarly, for the formal survey, structured questionnaires were developed, pre-tested, enumerators were recruited and trained. One hundred households (50 per district) were randomly selected and information was collected and documented. The common agroforestry practices at both study sites were scattered trees on farmlands, trees on gullies and rivers, homegardens, live fences, grazing lands, farm boundaries and around fences. *Hagenea abyssinica, Dombeya torrida, Leonotis ocymifolia, Piliostigma thonningii, Maytenus ugalinesses, Eucalyptus globules* and *Buddleja polystacha* are abundant at Jeldu where as *Acacia abyssinica, Cordia africana, Croton macrostachys, Olea africana, Eucalyptus camaldulensis,Adhatodea schimperiana,Ensete ventricosum,Salix subserata,Acacia albida, Carissa edulis, Cupressus lusitanica, Podocarpus glaciliar, Entada abyssinica, Ficus vasta, Sesbania sesban, Albizia scimperiana, Ficus sur, Euphorbia tricuali, Vernonia amygdalina, Acacia decurrence, Celtis africana, Maytenus senegalensis, Premna*