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ABSTRACT TEMPLATE

UNDERSTANDING THE DRIVERS OF LAND USE CHANGES: THE CASE OF OIL PALM MANAGEMENTS IN SUMATRA (INDONESIA)

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Abstract

Agricultural landscapes are primarily designed by farming practices. Farmers choose their farming practices in a balance between strengths and constraints, from local and wider scale as well as from biophysical and human context, following different land use strategies. These different strategies shape the landscapes and drive land use changes with consequent impacts onto the environment (e.g., on biodiversity conservation, soil erosion, water quality). In the last decades, land cover and land use changes have occurred in tropical areas: many tropical landscapes have shifted from forest to agriculture. Large areas are now used for agriculture. This is the case for oil palm plantations that have been increasingly developed to answer the global fat demand. In Indonesia, oil palm plantations are conducted through different farming practices eventually resulting into a wide range of environmental impacts. Understanding and modeling the drivers of the diversity of oil palm farming practices and their associated spatial location within the landscape is then crucial to assess oil palm environmental future impacts and to find possible ways to foster its sustainable development (Verburg et al., 2004). The aim of this communication is then to present an analysis of the diversity oil palm agricultural practices and their potential drivers as a first step to propose oil palm possible futures. The case study is in Sumatera, Indonesia.

We carried out interviews in two study sites different in terms of agricultural development: one being mostly developed with industrial plantations and one being developed with traditional smallholdings. We then performed multivariate analysis to explore the diversity of oil palm agricultural practices among oil palm smallholder's growers.

This presentation will contribute to the wider understanding of land use managers' decision making processes as a way to better assess possible land use futures. This case study will also provide a methodological example that combine stakeholders' in-depth interviews and biophysical maps to model the processes involved in agricultural land uses allocation and their possible changes, which can then help fostering transitions towards more sustainable production.

References:

Verburg, P., Schot, P.P., Dijst, M., J., Veldkamp, A., 2004. Land use change modelling: current practice and research priorities. GeoJournal 61, 309–324.

Key words: agricultural practice, smallholder, clustering, fertilizer, pesticide