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Rush for cash crops and forest protection: Neither land sparing nor land sharing

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ABSTRACT

In many countries with large tracts of tropical forests, there is a dual focus on enhancing forest protection and increasing commercial agriculture for economic development. Laos is a case in point for this development as the Government of Laos (GoL) has a strong commitment to economic growth, which rural farmers in part help realize through a rush for cash crop production destined to be sold in neighboring countries. Maize cultivation, for example, is rapidly expanding and grown under a contract-farming system for Vietnamese markets. At the same time, GoL attempts to increase nationwide forest cover and prepares for REDD+ (reducing deforestation and forest degradation). This paper explores how the recent boom in cash crops is impacting land use and livelihoods of local communities, as well as affecting forest conservation in Hua Meuang District of Huaphan Province in northeastern Laos. We also examine how local authorities react to these changes and navigate the contradicting policies. Furthermore, the paper analyzes to what extent the land sparing intention of land- and forest-land allocation policies are fulfilled. We found that the production of maize has rapidly expanded in Hua Meuang District since the mid-2000s as a result of high demands for maize in Vietnam and because local authorities see the crop as a way to reduce rural poverty and reduce traditional subsistence shifting cultivation practices. Communities have increased the areas that they dedicate to maize cultivation and have achieved an increase in both income and household assets. Maize has replaced upland rice cultivation as well as primary and secondary forests. Although the government policies aim to spare land for forest conservation by intensifying agriculture, the result is rapid agricultural expansion and no spared forest. Moreover, the traditional land-sharing landscapes with forest, fallows, and fields are being transformed, creating landscapes that are increasingly dominated by agriculture. This may still be in line with economic development policies, but it is at odds with forest conservation policies, REDD+ policies, and the GoL target of increasing forest cover in the country.

1. Introduction

In many countries that still have large tracts of tropical forests, there is a dual focus on enhancing forest protection while at the same time developing the economy by increased production of cash crops. Both targets are, of course, highly relevant for countries with high levels of poverty. As natural forests are becoming increasingly commoditized, e.g., through the proposed REDD+ mechanism (Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries), there is potential scope for forest protection to contribute more directly to economic transfers to high-poverty rural areas. Linkages between conservation and land-use intensification have been studied both in theory and by using local case studies, and these are, for example, outlined in the debates on land sparing (divided landscapes with totally protected forests and intensified agriculture on surrounding lands) versus land sharing (multi-

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functional landscapes serving both conservation and agricultural purposes).

This approach to understanding landscape management was launched by Green et al. (2005) and has sparked a rather polarized debate. Some conservationists have been strongly favoring the sparing approach in which land use policies should ensure that primary forest areas are left untouched in order to conserve specialist species that only thrive in such habitats (Gibson et al., 2011; Phalan et al., 2011). Other scholars, however, have pointed out that biodiversity can be just as high or higher in the shared landscapes that are often the outcome of traditional agricultural systems such as shifting cultivation (Rerkasem et al., 2009; Xu et al., 2009; Berry et al., 2010). Moreover, it has been shown that intensification processes may lead to further agricultural expansion as opportunity costs of agricultural production increase, thus not leading to any spared land for conservation (Rudel et al., 2009; Lambin and Meyfroidt, 2011). In recent years, more balanced views emphasiz that there should be room for both types of landscapes to benefit from a broad range of ecosystem services (not just biodiversity conservation) (Grau et al., 2013; Fischer et al., 2014). In addition, the need to ensure optimization of conservation and food production objectives may need elements of both sharing and sparing and in any case the best choices are always highly context specific (Butsic and Kuemmerle, 2015; Law and Wilson, 2015). Thus, it appears that this debate is rather quickly changing from polarized to reconciling views.

Such scientific debates can be highly useful in guiding policy on land-use planning, but the question remains as to whether they are reaching the appropriate policy-makers. For this to be achieved, agricultural and environmental policies must be coordinated to make the right choices between forest protection and land-use intensification. In many countries, policy-makers responsible for agricultural development and poverty reduction are disconnected from those responsible for environmental conservation (DeFries and Rosenzweig, 2010). Moreover, the land sparing and land sharing debate has had a somewhat restricted application in the scientific debate as there are numerous case studies that, without relating their results to land sharing and land sparing, actually show that neither is occurring. This is especially the case in many developing countries where rapid conversion of forest lands to annual cash crop production and industrial plantations is taking place (Galford et al., 2010; Brown, 2012) and where attempts at increased agricultural production appear in the guise of a land-sparing approach, but in reality these often serve neither forest conservation nor poverty reduction (Barrett et al., 2011; Ferraro et al., 2011).

There are many examples of agricultural intensification efforts that are justified by their assumed effect on both poverty reduction and, by default, forest protection. These include a study from Madagascar indicating that the expansion of intensified cash crop production such as maize has been one of the major causes of deforestation (Scales, 2011), and it has been argued that concessions and expansion of biofuel feedstock plantations lead to dispossession of land and increased poverty in Ghana, Cambodia, and Laos (Schoneveld et al., 2011; Hought et al., 2012; Kenney-Lazar, 2012; Neef et al., 2013). In Sarawak, several waves of large-scale oil palm expansions have led to questionable outcomes for local people (Ngidang, 2002; Cramb et al., 2009; Fox et al., 2009). More recently, smallholders in some of these areas now reject the large land development schemes and grow their own oil palm, benefitting from the infrastructure of the large schemes (McCarthy and Cramb, 2009; Mertz et al., 2013). Many of these agricultural development schemes argue that they indirectly aim at protecting remaining forests, but in reality, besides their questionable effect on poverty reduction, they have little, if any, connection to forest-protection efforts, which increasingly are limited to small 'islands' of old-growth forest (Curran et al., 2004; Fitzherbert et al., 2008). Similarly, forest protection efforts rarely link to land-development policies (Brussaard et al., 2010) even though expansion of cash crops is often identified as a driver of deforestation (Lambin et al., 2001; Haberl et al., 2014) and therefore could be used as an argument for stronger enforcement of forest protection. Consequently, policies aiming at either 'forest conservation' or 'economic development' are working towards different goals that, from a spatial point of view, are mutually exclusive. From a land sparing-land sharing perspective, we hypothesize that this may actually result in not achieving the beneficial goals that would be expected from either land sparing or land sharing. What appears to happen is that unenforced land sparing policies and new economic opportunities make people abandon traditional land sharing approaches and the result may be wholesale conversion of the landscapes to more or less intensive agriculture with very little forest left. This perspective has – to the best of our knowledge – not been discussed in the literature.

Laos provides an interesting case for examining this situation, since the Government of Laos' (GoL) efforts regarding land use planning can best be characterized as land sparing. The national Land and Forest Allocation (LFA) program – implemented since the mid-1990s – epitomizes this with its focus on containing traditional agricultural activities by local communities in limited areas in order to spare forests for regrowth (Lestrelin and Giordano, 2007; Fujita and Phanvilay, 2008; Lestrelin et al., 2012; Castella et al., 2013). However, a range of different drivers of land use change (outlined in more detail in the next section – including the LFA itself) have led to continuing declining forest cover (Tong, 2009; DoF, 2012), agricultural expansion (Thongmanivong and Fujita, 2006) and pressure on protected areas (Rao et al., 2014), none of which testify to the intended outcomes of the LFA. In this paper, we therefore analyze various land-use planning processes aimed at forest conservation (such as the proposed REDD+ mechanism) and agricultural intensification (such as cultivation of hybrid maize – hereafter maize – for the Vietnamese market) and their interplay with the LFA to understand the effects on land use, livelihoods of local communities, and forest protection. Moreover, we discuss whether the approach and outcomes of policy implementation can be characterized as land sparing or land sharing, or whether none of the two characterize the land use change pathways in Laos. First, however, to set the scene for the analysis, we outline the main drivers of land use change in Laos.

2. Drivers of cash-crop expansion and forest protection in Laos

The multiple and complex drivers of forest and land-use change observed on a global level (Lambin et al., 2003) are also found in Laos. According to the GoL, these drivers include traditional shifting cultivation and population growth (GoL, 2005), whereas scholarly studies also identify government policies on land reform—such as the LFA itself—as drivers of land-use change (Thongmanivong and Fujita, 2006; Fujita and Phanvilay, 2008; Broegaard et al., in review). The LFA had been implemented in an estimated 7130 villages by 2005 (GoL, 2005), and besides sparing forests, it also has a stated goal to reduce poverty through agricultural intensification. The rate of the poor in the shifting-cultivation landscape is about 46.5%, while the national poverty rate is 34.7% (Messerli et al., 2008; Heinimann et al., 2013), but this is partly because shifting cultivation is practiced in upland areas in the northeast and the south, where there is little access to services and employment, and where it is difficult to practice intensive agriculture due to the rugged character of the terrain (Epprecht et al., 2008). Nevertheless, it has become a major discourse in the LFA that shifting cultivation needs