

Land tenure and agricultural expansion in Latin America: the role of Indigenous Peoples' and local communities' forest rights

Tropical deforestation is an important contributor to climate change, through the release of significant amounts of carbon in the atmosphere. At the global level, annual deforestation rates have declined from 0.20% over 1990-2000 to 0.13% over 2000-2010. Central and South America accounted for over 20% of global forest area in 2010. Annual deforestation rates in Central America have passed from 1.56% over 1990-2000 to 1.19% over 2000-2010 while have remained constant at 0.45% in South America. In both cases these rates remain substantially above the global average. The main proximate cause of deforestation in tropical regions is agricultural expansion. Underlying causes of deforestation refer to deeper phenomena related to demographic, institutional, social and economic processes.

As the world population is expected to reach 9 billion by 2050, the question of how to feed an increasing population without cutting down any more forests has become crucial. Some estimates suggest that food production should increase by 70-100% in order to provide for the larger population. Within this debate on food security, the role of technology in promoting agricultural intensification and achieving the required increases in food production without further conversion of forests to agriculture (i.e., land-sparing) has been discussed. On the other hand, it has also been reported how agricultural intensification, by increasing the economic returns on agricultural land, may lead to an expansion of agricultural area thus manifesting what is known as Jevons paradox. This ambiguity on the effects of agricultural intensification may be explained by considering explicitly its interaction with the broader institutional context.

A significant part of the classic debate over the institutional aspects of agricultural expansion and deforestation in the tropics has been focused on the role of State and Market institutions. More specifically, state intervention either through the definition of well defined property rights (and subsequent governance through the market institution) and/or direct management of land resources (for example through land use planning etc.) has been advocated as preferable to direct ownership and/or management by local communities. Yet it is increasingly evident how the State/Market mechanism has been unable to secure the integrity of environmental resources, especially global common property resources (GCPRs) as the problems of climate change, persisting biodiversity loss and deforestation clearly show. A powerful alternative to the State/Market “duopoly” in the management of GCPRs is represented by the active involvement of indigenous and rural communities in the management of commons.

Recent estimates indicate that around 8.5 billion hectares of land around the world may be presumed to be the property of rural communities under customary use and administration that are often not officially recognized by formal law. Regarding forests, at least 513 million hectares have officially been recognized as owned or controlled by indigenous people and local communities, with the according rights recognized in policy or law. A growing body of research shows that community managed forests may be particularly effective at reducing deforestation. The evidence, however, is still mainly based on the analysis of case studies and land cover changes at regional or national level. Macro-scale analyses spanning several countries across an entire continent are less common. The purpose of this article is to contribute to filling this gap and assess whether recognizing forests' rights of indigenous and local communities may be more

effective in halting agricultural expansion in Latin America in the face of agricultural intensification, compared to more standard land tenure arrangements involving either the direct ownership by the Government or by private companies/individuals.

Data from the FAO, the World Bank (WB), the World Database on Protected Areas (WDPA), the Yale Center for Environmental Law and Policy (YCELP) and the Rights and Resources Initiative (RRI) for eleven tropical Latin American countries (Argentina, Bolivia, Brazil, Colombia, Costa Rica, Guyana, Honduras, Mexico, Peru, Suriname and Venezuela) have been combined to construct a panel data to examine the major determinants of agricultural land expansion over the period 1990-2010. The role of various socio-economic factors (per-capita GDP, agricultural exports, agricultural value added, population and service on external debt), different aspects of environmental governance (including the extent of protected areas) and agricultural intensification are accounted for in the statistical model. All these factors have been shown to play a significant effect on agricultural expansion. Moreover, the effect of land tenure regimes (including land designated for or owned by Indigenous Peoples and local communities) is also explicitly analysed.

In order to explain the dynamics of agricultural area in the eleven Latin American countries, two classes of models are estimated. The first one includes unstandardized (time-invariant) measures of land tenures regimes: forests administered by the government (FAG), forests designated for Indigenous Peoples and local communities (FAI), forests owned by Indigenous Peoples and local communities (FOI) and forests owned by private individuals and corporations (FOP). The second class of models includes a standardized (time-invariant) measure for land tenure reflecting the proportion of forests managed or owned by Indigenous Peoples and local communities (PCF_i).

With respect to the first class of estimated models, the empirical results suggest that for large improvements in agricultural productivity, land-sparing may set in. Its occurrence however, is crucially dependent on the prevailing land tenure regimes. Specifically, increasing the area of forests designated for and/or owned by indigenous and local communities contributes to either mitigate Jevons paradox or promote land-sparing. On the contrary, increasing the forest area administered by the government and/or owned by private individuals and corporation either promotes Jevons paradox or mitigates the land-sparing effect of intensification. The second class of models confirms the results. Agricultural intensification is associated with land-sparing, the magnitude of which is significantly reinforced by the share of forests which are either managed or owned by indigenous and local communities (PCF_i).

Although generalization to other context is always difficult, since the effect of particular institutional arrangements and tenure regimes is always context specific, formally recognizing the rights of Indigenous Peoples and local communities has the potential to significantly slow down deforestation and forest degradation. In fact, it has been pointed out how “community governance” can successfully address some of the problems that cannot be handled by individuals, markets and governments. In general the results stimulate further reflection on the importance of different institutional arrangements, beside those based on private property and markets and including those devolving greater autonomy to local communities, capable of governing the possibilities offered by improved technical means in terms of agricultural intensification towards the desired ends of achieving food security without further degrading the remaining forests.