



Forest use and agriculture in Ucayali, Peru: Livelihood strategies, poverty and wealth in an Amazon frontier



Roberto Porro^{a,b,*}, Alejandro Lopez-Feldman^c, Jorge W. Vela-Alvarado^d

^a Embrapa Eastern Amazon, Trav. Dr. Enéas Pinheiro s/n, Belém, PA 66095-100, Brazil

^b World Agroforestry Centre, Latin-American Regional Office, c/o CIP, P.O. Box 1558, Lima 12, Peru

^c División de Economía, Centro de Investigación y Docencia Económicas, CIDE, Carretera México-Toluca 3655, Col. Lomas de Santa Fe, 01210 México, D.F., Mexico

^d Universidad Nacional de Ucayali, CFB Km 6, Pucallpa, Peru

ARTICLE INFO

Article history:

Received 5 April 2014

Received in revised form 31 October 2014

Accepted 2 December 2014

Available online 24 December 2014

Keywords:

Poverty and environment

Rural livelihoods

Peruvian Amazon

Deforestation

ABSTRACT

The relevance of forests to rural well-being and poverty reduction remains a controversial issue. This paper examines patterns of association between household wealth, poverty, and livelihood dependency either on forest extraction or agricultural activities in Ucayali, Peru. The analysis is based on survey data of 578 households with geographical, ethnic and environmental heterogeneity. A typology of economic strategies was defined through relative income shares derived from agriculture, forest, wages and other income sources. Our results show that households have multifaceted livelihood systems. While forest/environmental products provide nearly 40% of total income, agriculture is critical to both indigenous communities and to farmers of non-Amazonian origin. We test the hypothesis that households relying on agriculture are wealthier than forest-dependent households. In addition, we examine the role played by ethnicity and location as interacting variables. The analysis suggests a strong role of specific ethnic and locational configurations in shaping income and asset patterns, with some weak evidence of statistically lower poverty levels being credited to dependency on forest products. Context-specific assessments of livelihood–environment interactions provide critical insights to development and environmental policies and programs, which need to recognize different forms through which households integrate forest use and agriculture.

© 2014 Published by Elsevier B.V.

1. Introduction

The globally valued ecosystem services that forests provide are critical to ever-increasing environmental agendas seeking to mitigate climate change through policy. The implementation of interventions derived from such policies often affects social relations, cultural traits, and living conditions of those who live in or near forests. Households in forest frontier communities engage in multiple and site-specific activities that provide for their livelihoods. Therefore, livelihood strategies adopted by these social groups should be carefully considered in programs targeted to enhance forest-related ecosystem services. Accurate assessments of patterns, drivers, and consequences of local livelihood systems, and particularly of synergies and trade-offs between agriculture and forest use, are essential to increase the fairness and efficiency of initiatives affecting indigenous and smallholder communities (Kaimowitz, 2008). Moreover, comprehensive examinations of these

livelihoods reveal the dynamic interplay of economic activities that provide them greater resilience to vulnerable social groups. Such studies may offer relevant insights for strong safeguards and social co-benefits to enhance the “bundle of powers” to which these resource users in the forest margins are entitled (Chhatre et al., 2012; Larson and Ribot, 2007; Ribot and Peluso, 2003).

In this paper we discuss situations where forest products are the main source for local livelihoods and others where there is a higher dependency on agriculture or other activities. We draw on empirical evidences from a case study with diverse ethnic composition at distinct settings in the Ucayali region, Peruvian Amazon. Bridging socioeconomic and environmental research domains, we examine the patterns of association between economic indicators and livelihood dependency either on forest extraction or agricultural activities. We use income and wealth to assess outcomes of household decisions regarding productive strategies. We identify household economic activities and relate them to income. In addition, we draw on capital assets as wealth indicators to attenuate the bias of assessments based only on income, which often do not capture the realities of multidimensional rural livelihoods and provide incomplete explanations for local patterns of behavior (Bebbington, 1999; Brandolini et al., 2010; Reardon and Vosti, 1995). Through the dual focus on assets and income, we show patterns of

* Corresponding author at: Embrapa Amazônia Oriental, Pavilhão de Pesquisas, Trav. Dr. Enéas Pinheiro s/n, Belém, PA 66095-100, Brazil. Tel.: +55 91 3204 1129, +55 91 99615 6655; Fax: +55 91 3276 9845.

E-mail addresses: roberto.porro@embrapa.br, porro.roberto@gmail.com (R. Porro), alejandro.lopez@cide.edu (A. Lopez-Feldman), jvelaunu@gmail.com (J.W. Vela-Alvarado).

association between wealth, poverty (assessed through a line of US\$1.89/day established by the Peruvian government) and the use of forest products.

We test the hypothesis that greater dependency on forest products is negatively correlated with income and wealth. In order to do so, we structure a typology of livelihood strategies based on household dependency on forests, agriculture, or other activities; high dependency being considered when relative shares of agriculture or forest-derived income are greater than two-thirds (66.6%) of total annual income. We then clarify the observed contrasting effect of livelihood orientation on income and asset levels through incorporation of ethnicity and location as interacting variables. Our results suggest a strong role of specific ethnic and locational configurations in shaping income and asset patterns, with some weak evidence of statistically lower poverty levels being credited to dependency on forest products.

2. Background

Demand for studies on the relationship between forests and livelihoods increased in the past few years with the acknowledgement of avoided deforestation as a primary strategy for reducing carbon emissions (Anderson and Bows, 2008; Kindermann et al., 2008; Ramankutty et al., 2006). Baseline biophysical and socioeconomic assessments became required protocols for sites of potential implementation of schemes targeting reduced emissions from deforestation and forest degradation (REDD) in developing countries. While these increased demands require greater attention in scholarly debates on the topic, field assessments present additional research questions and stakeholder perspectives that ought to be included in new research.

Scholars have convincingly presented different perspectives on assessing poverty and well-being in forest environments (Guedes et al., 2012; Narain et al., 2008; Nielsen et al., 2012; Sheil and Wunder, 2002). Studies have increasingly examined the extent to which multiple dimensions of household heterogeneity in capital assets (Ellis, 2000; Scoones, 1998) influence engagement in forest use and dependency on forest or environmental products (e.g., Kamanga et al., 2009; Kar and Jacobson, 2012; and see Vedeld et al. (2007), for a meta-analysis of more than 50 cases). Yet, the links between forests and livelihoods (the so-called forest–poverty nexus) are more often expressed through dependency levels based on income estimations (Vedeld et al., 2004; Wollenberg and Nawir, 1998; Wunder, 2001).

The level of poverty in Africa (Ravallion et al., 2005) has led many of these studies to focus on sub-Saharan countries. The Amazon region is relatively understudied in this respect, despite presenting the largest tropical forest extension in the world, with increasing socioeconomic inequalities and complex issues of access and use rights (Corbera et al., 2011; Larson et al., 2008; Pacheco et al., 2012). Examinations of Amazonian livelihood–environment links (e.g., Anderson and Ioris, 1992; Coomes and Burt, 2001; Duchelle, 2009; Pattanayak and Sills, 2001; Pinedo-Vasquez et al., 1992; Shone and Caviglia-Harris, 2006; Stoian, 2005; Vosti et al., 2003) have more often been confined to a specific social group, either indigenous communities or long-term dwellers with open access to resources or recently arrived colonist farmers tied to private land use. Our approach captures differentials in economic strategies across specific user groups. It provides greater detail on the role of forest-derived income, adding this aspect to a prolific set of studies conducted since the 1990s on colonist farmers' economic strategies (e.g., Browder et al., 2004; Caviglia-Harris, 2004; Marquette, 2006; Moran et al., 2004; Murphy et al., 1997; Perz, 2005; Walker et al., 2002).

Forests and environmental resources are seen to perform three major roles in the livelihoods of vulnerable households (Angelsen and Wunder, 2003; Belcher, 2005; Cavendish, 2002; Fisher, 2004; Fisher and Shively, 2005; Godoy et al., 1998; McSweeney, 2005; Paumgarten, 2005; Shackleton and Shackleton, 2004; Vedeld et al., 2007). They support local consumption needs, provide insurance as safety nets either through consumption or commercialization, and can be a pathway

out of poverty. Both wealthier and poorer households rely on forests and while the wealthier tend to extract greater aggregated quantities, the poorer households are more dependent on forest products (Byron and Arnold, 1999; Mamo et al., 2007). Forest products may have an equalizing effect on income inequality (Cavendish, 2000; Kamanga et al., 2009; Mamo et al., 2007). However, forest dependency may turn into a poverty trap, where poverty and forests are linked in a downward spiral in which poverty causes forest loss and vice versa (Shively, 2004; Scherr, 2000; Sunderlin et al., 2005). Poverty and impoverishment can indeed be a major cause of environmental degradation (Angelsen and Wunder, 2003; Fisher and Shively, 2005; Tacconi et al., 2006; Wunder, 2001), although these conditions are magnified by broader economic inequalities and structural factors that reduce access to forest resources and increase social vulnerability (Colchester and Lohmann, 1993; Stonich and Dewalt, 1996).

Comparative syntheses of site-specific studies on the role of forest products to livelihoods often address aspects such as property rights, natural-resource governance, and modalities of market integration by resource users. The modalities have been categorized as either subsistence, diversified, or specialized strategies (Belcher, 2005; Belcher et al., 2005; Ruíz-Pérez et al., 2004), and their correct contextualization is critical for developing mechanisms to expand the local benefits of trade (Scherr et al., 2003). Yet, as argued by Schmink (2004), such contextualization must go beyond livelihood systems to include a thorough appreciation of the broader economic and political forces of the social structures that impact the viability of forest management. As stated by Belcher (2005), the neglect of such appreciation and the lack of careful safeguards to ensure the rights of vulnerable groups may assign an undesirable anti-poor bias to increased market integration of forest resources.

3. Study site

With an area of 102,410 km² (roughly 8% of the country's total) Ucayali is the second largest of Peru's 25 administrative regions. Its 2012 population is estimated at 490,000, of which 75% reside in urban areas and more than 60% in its capital, Pucallpa, the second most populous city in the Peruvian Amazon. Improvement in Ucayali's social conditions is shown by a considerable reduction in total poverty, from 70.5% in 2001 to 20.3% in 2010 (INEI, 2011a) and the increase in its Human Development Index (HDI), from 0.5251 in 1993 to 0.6022 in 2007 (PNUD, 2010). Substantial demographic discrepancies exist across Ucayali's four regional provinces, with northern Coronel Portillo and Padre Abad provinces presenting a combined demographic density more than 10 times greater than southern Atalaya and Purus provinces, which are predominantly rural (65%) and unconnected to paved roads (INEI, 2009a).

Origin and cultural groups differentiate the population in Ucayali. On the one hand, territories of nearly 300 native Amazonian communities cover about 20% of the region, half of this area being legally titled (IBC, 2012; MINEM-GOREU, 2007). Projected to 2012, the Pano (60%) and Arawak (40%) ethnolinguistic families have a population of about 70,000 (14% of Ucayali's total population) (IBC, 2012; INEI, 2009b; MINEM-GOREU, 2007). On the other hand, thousands of colonists have settled near the Federico Basadre Highway, built in 1945, or along the banks of the Ucayali River and its tributaries, where they joined long-term, nontribal *riberaño* (riverside) communities. Most of these settlers have a non-Amazonian indigenous background (Padoch and de Jong, 1989, p. 103). In this paper, they are designated as *mestizos*, encompassing settlers of non-Amazonian background, both indigenous and nonindigenous.

Nearly 20% of Ucayali region's GDP derives from agriculture, livestock, and forestry, while timber and agricultural processing companies contribute a substantial portion of industry's 13% share of the GDP (INEI, 2011b; MINEM-GOREU, 2007). Annual cropping is mostly based on traditional short-fallow swiddens, with progressive clearing and burning

Download English Version:

<https://daneshyari.com/en/article/91813>

Download Persian Version:

<https://daneshyari.com/article/91813>

[Daneshyari.com](https://daneshyari.com)