



# Tradeoffs in carbon commodification: A political ecology of common property forest governance



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## ABSTRACT

Carbon markets have gained traction worldwide as an ostensibly win–win solution to climate change, providing low-cost emission reductions in the Global North and sustainable development in the Global South. However, sustainable development and livelihood co-benefits have largely failed to materialize in a range of carbon offset projects, particularly those in forest communities. While some scholars explain this failure as an outcome of fundamental tradeoffs between market efficiency and sustainable development, others argue that institutions of common property land tenure can resolve tradeoffs and generate important co-benefits for local communities. Using a political ecology approach, integrating insights of Karl Polanyi and Noel Castree on the commodification of nature and evidence from a carbon forestry project in Chiapas, Mexico, this article grapples with the ways in which carbon market requirements shape forest governance within common property tenure arrangements. I argue that the centralization of forest governance and decision making into the hands of project implementers and brokers, the necessity for legible land rights and boundaries, and the technical requirements for measurement, calculation, and monitoring of carbon have reshaped forest governance in ways that have undermined the social and ecological benefits often associated with common property management schemes. This research therefore demonstrates that so-called tradeoffs between market efficiency and equitable sustainable development goals may not be inherent to carbon forestry and calls into question the reliance on disembedding market mechanisms for climate change mitigation in forest ecosystems. As such, this work has important implications for REDD+.

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## 1. Introduction

Carbon markets have gained traction in international policy arenas as an ostensibly win–win solution to climate change, supposedly providing low-cost emission reductions in the Global North and sustainable development in the Global South (Simon et al., 2012; Landell-Mills and Porras, 2002; Chichilnisky et al., 2000). However, sustainable development and livelihood co-benefits have largely failed to materialize in a range of carbon offset projects, particularly those in forest communities (Olsen, 2007; Boyd, 2009; Sutter and Parreño, 2007; Anderson and Zerriffi, 2012; Bailis, 2006). Scholars have identified these carbon contradictions in terms of equity–efficiency tradeoffs (Olsen, 2007; Chhatre and Agrawal, 2009; Smith and Scherr, 2003; Pan et al., 2014). Similar tradeoffs and results have been illustrated in other market-based systems of environmental governance including forest certification

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(Klooster, 2006), payments for environmental services (McAfee and Shapiro, 2010), and conservation initiatives (Pokorny et al., 2012). In this paper I interrogate the notion of tradeoffs in relation to market-based carbon offsets in the tropical forests of Chiapas, Mexico.

Chiapas is home to one of the first forest-based carbon offset projects, called Scolel Té, highly regarded for the participation of small farmers (Tipper, 2002; de Jong et al., 2000; Hendrickson and Corbera, 2015). Although Scolel Té was founded on the goals of providing livelihood and local sustainable development benefits, it has faced the well-documented challenges of articulating efficiency and equity goals (Nelson and de Jong, 2003; Brown and Corbera, 2003; Osborne, 2011; Hendrickson and Corbera, 2015). Issues range from competition between subsistence land use and carbon-sequestering trees for the market (Lansing, 2011; Osborne, 2011), to increased structural violence associated with forced eviction (Lyons and Westoby, 2014; Beymer-Farris and Bassett, 2012) and struggles over land tenure (Unruh, 2008; Osborne, 2013; Corbera et al., 2011). The unevenness in the delivery of co-benefits in Scolel Té and other carbon projects is largely framed

in the language of *tradeoffs* between cost efficiency goals and community development. Within carbon market mechanisms, efficiency often trumps equity goals (Olsen, 2007; Smith and Scherr, 2003). Institutional political economists argue that common property land tenure, found throughout Mexico's agrarian landscape, can resolve tradeoffs and produce benefits for local communities (Chhatre and Agrawal, 2009; Klooster and Masera, 2000; Smith and Scherr, 2003). However, empirical evidence from Scolel Té suggests a more complex reading. Using a political ecology approach, I grapple with the contradictions inherent in the carbon market and argue that equity–efficiency tradeoffs are not a given, nor are they automatically or easily resolved under common property regimes. Instead tradeoffs are produced when disembedding carbon markets intersect with systems of common property land tenure.

The effect of markets on systems of common property management is not well understood (Agrawal, 2001, 2007; Bray, 2013). Although many scholars of the commons have explored rules and norms that govern resource use in the commons and recognize that external pressures such as markets can influence common property institutions, there has been no systematic exploration of these relationships to date (Agrawal, 2001, 2007). Political ecologists, however, have long been interested in the dialectical interactions between markets, land managers, and environments under diverse property regimes (Robbins, 2012). Bringing the scholars of common property and political ecology into conversation with one another can be highly productive in this regard (Agrawal, 2007). This article, therefore, attempts to fill an important gap in the literature through an analysis of carbon commodification as it operates in systems of common property land tenure.

Given the breadth of its historical common property land tenure arrangements, Mexico is a key site in which to study the relationship between carbon markets and forest governance dynamics. Today, ejidos and agrarian communities harbor as much as 80% of the nation's forestland<sup>1</sup> (Klooster, 2003; Bray et al., 2003; Alix-Garcia et al., 2005). Mexico is also a site of extensive market-based carbon offset projects, particularly in the southernmost states (de Jong et al., 1995; Tipper, 2002).

Using empirical research in Chiapas, I argue that the commodification of forest carbon involves three shifts that disrupt common property institutions: (1) centralization of forest governance, (2) boundary definition around communal land, and (3) techniques of carbon forest legibility. Attempts to meet these requirements of commodification profoundly alter the ways common property institutions function by reshaping the often-longstanding customs, processes, and modalities by which communities use and manage their land. For instance, the carbon project created loopholes around communal forest conservation and management rules, allowing for the first time the harvesting of trees for commercial sale. These changes frequently reduce or altogether erase the social and ecological benefits associated with successful common property governance.

Although this article focuses on a single carbon offset initiative in Chiapas, it speaks to the ways in which markets can shape the management of common property resources more broadly, and thus contributes to ongoing debates around carbon tradeoffs. Drawing on Noel Castree's work on commodification of nature and Karl Polanyi's concept of nature as a fictitious commodity, this research highlights the importance of integrating questions of resource materiality into debates on equity–efficiency tradeoffs in particular, and analyses of market-based climate change

mitigation programs more generally (Lansing, 2011, 2012; Bumpus, 2011).

This research also has broader implications for the governance and finance of REDD+, a strategy for climate change mitigation and rural sustainable development in the Global South. REDD+ is the United Nations initiative for *Reducing Emissions from Deforestation and forest Degradation* (REDD) in developing countries that includes conservation, sustainable forest management, and the enhancement of carbon stocks (the plus). In Chiapas, administrators of Scolel Té, who have implemented carbon forestry and conservation projects since the mid-1990s, have more recently expanded their work to include pilot efforts developed under the auspices of REDD+.<sup>2</sup> The research presented here not only informs the finance and implementation of REDD+ in spaces of common property management but also makes more visible the political stakes involved.

In this paper I first outline the key debates on tradeoffs in carbon markets and the contribution this research makes to those debates. I then present my theoretical framework and substantiate my claims about the ways in which carbon markets shape forest commons governance with evidence from the Scolel Té Carbon Forestry Project. This study is based largely on fieldwork conducted between 2006 and 2007, with shorter research trips in 2009 and 2012. Interviews were conducted with small landholder carbon producers in Chiapas with some level of engagement in Scolel Té, as well as the project developer and managers, staff of government agencies and civil society groups, and scholars with knowledge of the project and/or the regional context.<sup>3</sup> In addition, working collaboratively with researchers from ECOSUR, I conducted a rapid carbon analysis in the Mayan community of Frontera Corozal. Findings from Frontera Corozal reveal the myriad and shifting ways in which the carbon project's market logic has reshaped systems of local forest governance. The paper concludes with a discussion of the theoretical contributions and broader implications of this research with respect to REDD+.

## 2. Tradeoffs: market efficiency vs. local sustainable development

The Kyoto Protocol, an instrument of neoliberal environmental governance, relies on market mechanisms that allow industrialized countries the geographic flexibility to reduce their emissions elsewhere, particularly where costs of mitigation are lower.<sup>4</sup> The Clean Development Mechanism (CDM) serves as a vehicle for low-cost greenhouse gas reductions by allowing industrialized countries to reduce emissions in the developing world by establishing projects and initiatives that deliver sustainable development benefits. Article

<sup>2</sup> In 2010 Governors of California, Acre Brazil and Chiapas Mexico signed a Memorandum of Understanding to collaborate on climate change mitigation through REDD+.

<sup>3</sup> This research is based on 17 months of field research in Chiapas, Mexico conducted between 2006 and 2007, as well as shorter research trips in 2009 and 2012. While in the field, I utilized a diverse set of social science methods, including structured and unstructured interviews, data collection from government and NGO documents, and participant observation. I carried out more than 100 interviews in Chiapas with *campesinos* both within and outside of the carbon project, interviews with the project developer and original carbon broker in Edinburgh, Scotland (Edinburgh Centre for Carbon Management or ECCM), staff from the project managing NGO (AMBIO), academics including those from institutions that conducted the initial feasibility research [El Colegio de la Frontera Sur (ECOSUR) – The College of the Southern Border, and Universidad Autónoma de Chapingo – Autonomous University of Chapingo], and staff members in government land, forest and conservation agencies (CONAFOR – national forestry commission, CONANP – conservation agency, SEMARNAT – national agency in charge of environment and natural resources, INEGI – national agency governing statistics and geography).

<sup>4</sup> The flexibility mechanism concept is based on economic theory that suggests emission reduction should take place at the site of least cost, and in some cases where profitable (Oberthur et al., 1999).

<sup>1</sup> Ejidos and agrarian communities are both systems of communal land tenure established in the Mexican Constitution, where members have use rights to both individual plots and communal land. Agrarian communities were granted to indigenous groups based on historical land claims.

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