Global Environmental Change 50 (2018) 255–267

Contents lists available at ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

The transboundary displacement of deforestation under REDD+: *Problematic intersections between the trade of forest-risk commodities and land grabbing in the Mekong region*

Micah L. Ingalls[a,*], Patrick Meyfroidt[b,c], Phuc Xuan To[d,e], Miles Kenney-Lazar[f], Michael Epprecht[a]

[a] Centre for Development and Environment, University of Bern, Switzerland
[b] Earth and Life Institute, Université catholique de Louvain, 1348, Louvain-la-Neuve, Belgium
[c] F.R.S. - FNRS, 1000, Brussels, Belgium
[d] Crawford School of Public Policy, Australia National University, Australia
[e] Forest Trends, Washington D.C., United States
[f] Hakubi Center for Advanced Research and Center for Southeast Asian Studies, Kyoto University, Japan

ARTICLE INFO

Keywords:
REDD+
Transboundary displacement
Forest governance
Land grabbing
Lao PDR and Cambodia

ABSTRACT

A key lever to mitigate global climate change is the reversal of forest carbon emissions trends throughout the Global South. Reduced Emissions from Deforestation and Forest Degradation (REDD+) initiatives seek to conserve forest carbon stocks primarily through national and sub-national policies and interventions. Dominant drivers of forest change are, however, increasingly international in scope, tied to global commodity markets and investment flows, and are not easily captured or effectively addressed through nation-based carbon accounting. The fragmentary adoption of REDD+ across forest nations leaves room for the displacement of deforestation from early-adopters and countries with more rigorous carbon-related regulatory regimes to late-adopters of REDD+. While this displacement is expected to be substantial, our empirical understanding of the causal pathways of transboundary displacement remains weak. Our research addresses this lacuna, focusing on Vietnam, an early adopter of REDD+ that has experienced significant reforestation despite exponential growth in exports of key forest-risk commodities, sourced in large part from Lao PDR and Cambodia. We show that over the last decade, the trade of forest-risk commodities was large and accelerating in the Mekong region, concurrent with the rapid expansion of large-scale land acquisitions (LSLAs), constituting important, inter-related causal pathways for the displacement of deforestation and forest degradation. LSLAs are, however, core of national economic development strategies in the Mekong region, indicating a problematic relationship between REDD+, trade flows and land and forest governance. We explore the problematic intersection between these dynamic processes, their impacts on forests in Lao PDR and Cambodia, and implications for global efforts to manage forest resources and reduce emissions. The inability of REDD+ to address transboundary impacts suggests the need for complementary interventions that address supply- and demand-side dynamics.

1. Introduction

Due to the critical role of forest as potential sinks and sources of carbon, the finalization of the Reduced Emissions from Deforestation and Forest Degradation (REDD+) Framework was a key achievement of the Paris Agreement in December 2015. Results-based Payments (RBPs) are expected to increasingly constitute the core financing mechanism of REDD+, incentivizing the achievement of Nationally-Determined Contributions (NDCs) to reducing forest carbon emissions and enhancing removals of atmospheric carbon (Wong et al., 2016). Whatever its aspirations, the significance of REDD+ rests on its effectiveness in practice—in particular, its ability to address forest carbon emissions not only at the local level, but also aggregate global emissions (Dwyer, 2015). While some countries have moved quickly toward the achievement of various REDD+ readiness benchmarks in the development of National REDD+ Programs, others have been slow, uncommitted or non-participating. This fragmentary rolling out has important implications across forest nations and intersects problematically with drivers of deforestation and forest degradation, which are increasingly globalized in nature and dominated by forest-risk commodity sectors (those that commonly impact forest through, for example, forest conversion for agriculture or forest degradation through

* Corresponding author.
E-mail address: micah.ingalls@cde.unibe.ch (M.L. Ingalls).

https://doi.org/10.1016/j.gloenvcha.2018.04.003
Received 8 November 2017; Received in revised form 17 February 2018; Accepted 2 April 2018

timber extraction) that easily shift from one place of production to another (Meyfroidt and Lambin, 2009; Henders and Ostwald, 2014). The role of global supply chains in driving forest change is not only substantial, but accelerating (Liao et al., 2016) and increasingly tied to Foreign-Direct Investment (FDI) through large-scale land acquisitions, or LSLAs (McMichael, 2013). Particularly since the food and energy crisis of 2007–2008, investor countries have turned to LSLAs as mechanisms through which to bypass market intermediaries to secure resources for import (Zoomers, 2010), while also finding more stable investment options in land, avoiding restrictive domestic regulatory environments and resource scarcity (Keene et al., 2015). LSLAs are often characterized as land grabs—acquisitions of land characterized by intransparency, ignoring fundamental rights of local communities and entailing substantial social and environmental impacts (Nally, 2015). But this is not always the case. LSLAs vary in character and are often seen as licit, particularly where they contribute to (or are perceived to contribute to) national development goals in recipient countries by providing investment capital, labor options, and royalties to finance state treasuries (White et al., 2012) and thus do not always fit the mold implied by the 'land grab' pejorative (Wolford et al., 2013). The production of agricultural commodities for export through LSLAs and other market and trade dynamics has played an increasingly dominant role in driving deforestation (Hosonuma et al., 2012) as companies often seek new lands for investment and commodity sources in countries where environmental regulations are comparatively lax (Le Polain de Waroux et al., 2016). International commodity flows for four products (wood, beef, soybean and palm oil) from seven countries alone accounted for up to 40% of global deforestation (Henders et al., 2015) with, in several cases in South America and Asia, for example, forests supplying as much as 89% of land for commodity crop expansion (Meyfroidt et al., 2014).

The pace and magnitude of these resource flows is thus directly implicated in the transboundary displacement of forest pressures and associated emissions. The fragmentary and uncoordinated adoption of REDD+ across countries raises important questions regarding the risks of transboundary displacement of deforestation and forest degradation from early adopters and countries with strong regulatory control and advanced participation in REDD+ to carbon-unregulated countries. International leakage (or 'spillage,' the transboundary displacement of carbon emissions caused by policies aimed at reducing carbon emissions, IPCC, 2007) from industry has received some attention (Kuik, 2014). Policy makers have, however, paid comparatively little attention to transboundary leakage in other sectors (Henders et al., 2015; González-Eguino et al., 2016). Fairly rigorous methods and standards of accounting for sub-national leakage have been developed and rolled out over the past decade through REDD+ pilot initiatives, but these have, in the main, not been applied across international borders. This is intentional and explicit in the structure of the United Nations Framework Convention on Climate Change (UNFCCC). Nested within this, the assumption of the REDD+ Framework is that all emissions will eventually be accounted for and dealt with once REDD+ achieves global saturation across countries. In short, responsibility for reducing forest carbon emissions and enhancing removals—the basis of RBP-based incentives—begin and ends within national borders (Branger and Quirion, 2014). The potential incompatibility between increasingly globalized resource flows and nationalized, disconnected application of REDD+ interventions presents a substantial, structural limitation in the way REDD+ is framed with direct implications for the question of whether REDD+ can achieve climate change mitigation at the global-level. Terrestrial leakage—related largely to land use conversion for commodity supply chains—may constitute the dominant type of leakage up to 2050 due to deforestation in weak, slow or non-participating REDD+ countries (González-Eguino et al., 2016)

To date, displacement studies have highlighted the complex relations and feedbacks between forest cover changes, international trade flows and policies (Jadin et al., 2016a,b). These studies highlight that the geographic displacement of pressure on forests can occur either through the movements of agents responsible for land use change and deforestation, or through increased trade of agricultural and forestry products, and result from a broad range of causal factors. These studies also highlight the challenges to attribute this displacement (i.e. to quantify which share of the displacement can be considered as leakage in the strict sense) specifically to policies aimed at conserving forests or mitigating carbon emissions (Meyfroidt and Lambin, 2009; Meyfroidt et al., 2013a,b). Indeed, leakage studies have struggled to demonstrate the (typically complex and multivariate) causal links between international commodity flows and forest-change impacts within specific national contexts or to adequately interrogate the ways in which these articulate with local structural dynamics (Meyfroidt and Lambin, 2009; Kastner et al., 2011; Henders and Ostwald, 2014; Meyfroidt, 2016). There is an urgent need for further analysis of the causal mechanisms through which displacement leads to deforestation in order to provide a substantive, evidentiary basis for reforming land and forest governance and policy initiatives such as REDD+, and situating these initiatives within broader concerns related to LSLAs and the role these play in national development trajectories.

The Mekong region—especially the closely-interconnected economies of Cambodia, Lao PDR (or Laos) and Vietnam—presents a striking case for the displacement of deforestation and forest degradation (Meyfroidt et al., 2010). Amid a regional pattern of deforestation and rapid land use change, Vietnam has stood out as exemplary of a limited set of countries that have been able to negotiate the transition from deforestation to reforestation while also achieving substantial economic growth and the rapid expansion of forest- and land-intensive commodity sectors (see also Jadin et al., 2016a on similar dynamics in Costa Rica). Following the adoption of *Doi Moi* economic reforms in 1986, Vietnam experienced robust economic growth averaging around 7% per year (CEBR, 2015). Central to this impressive economic growth has been Vietnam's rapid expansion of commodity exports and burgeoning trade relationships including the ASEAN Free Trade Area in 1995, the Asian-Pacific Economic Cooperation in 1998, the ASEAN-China FTA in 2002, the World Trade Organization in 2007 and, most recently, participation in the formation of the ASEAN Economic Community. These have opened large markets for Vietnamese exports, which have grown rapidly with 13.8% year-on-year growth (in 2010 US-Dollar constant) between 2000 and 2016 (World Bank, 2017).

Vietnam has steered an uncertain path between this rapid, export-oriented growth and a demonstrated commitment to forest resource conservation. Since the country's independence in 1954, the state has played a dominant role in the administration of land and forest resources, navigating between the often contested interests of the state and state-owned enterprises (SOEs), the private sector and a local communities (To et al., 2015; McElwee, 2016). During the early years, the national forest estate was largely regulated through State Forest Enterprises (now State Forest Companies, or SFCs) that leveraged timber resources to secure development aims and hard currency from timber export. Logging peaked at the end of the 1980s, when annual harvest reached about 1 million m^3, rapidly depleting national forest reserves. Timber extraction, together with agricultural conversion, reduced Vietnam's forest area to less than 9 million hectares (ha) or 28% of total land area (Nguyen, 2001).

An important shift occurred during the early 1990s as the government of Vietnam, with substantial technical and financial backing from international organizations, began to prioritize forest conservation through a suite of policy reforms, investment programs and improved regulatory oversight aimed at enhancing the forest estate, reallocating a portion of state land to households, and restricting land use conversion. In 1993, the government issued a logging ban in special-use forests (conservation areas and reserves) and, in 1998, extended this ban to cover more than half of Vietnam's forest estate, with substantial reductions in national logging quotas in remaining forest areas (Pham et al., 2012). Reforestation efforts through commercial plantations were