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## Do eco-labels prevent deforestation? Lessons from non-state market driven governance in the soy, palm oil, and cocoa sectors



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## ABSTRACT

In countries marked by the growing uptake of non-state market driven (NSMD) governance for agricultural commodities (i.e., eco-labels and certification systems), forested areas are steadily decreasing while crop lands are growing. This deforestation continues despite NSMD rules aimed at prohibiting the conversion of forested land to agriculture. In this paper, we ask why the growing presence of NSMD governance has coincided with ongoing deforestation. While the seeming inability of NSMD governance to halt broader patterns of land use change can be partially explained by a lack of market uptake, there are also a range of other variables that may contribute to this relationship. We probe the plausibility of five hypotheses through comparative case studies of sustainable soy certification in Brazil, palm oil in Indonesia, and cocoa in Côte d'Ivoire. Our findings indicate that NSMD governance has neither abetted, nor hindered, the conversion of forested land to agricultural production. We find strong evidence that a lack of broad market uptake limits the effectiveness of NSMD governance. However, we also find evidence that regulatory loopholes in NSMD systems may explain the inability of eco-labels and certification systems to halt broader patterns of land use change in countries with comparatively strong market uptake. Our results highlight critical problems related to expanding the reach and stringency of NSMD governance alongside the ongoing fragmentation of global environmental governance. The study contributes to scholarship on the impacts and effectiveness of transnational environmental governance.

### 1. Introduction

Growing demand for agricultural commodities like soya beans, palm oil, and cocoa exacerbates patterns of land use change worldwide and contributes to deforestation (Alexander et al., 2015; Henders et al., 2015). Deforestation for agriculture is a serious global challenge tied to numerous other environmental issues. When forested land is cleared for farming, it often increases greenhouse gas emissions (GHGs), deteriorates soil quality, diminishes biodiversity, and places stress on scarce water resources (Newton et al., 2013; Smith et al., 2013). For these reasons, a range of activists, businesses, and international organizations have championed non-state market driven (NSMD) governance systems to ameliorate the negative environmental impacts of commodity crop farming. Commonly known as eco-labeling or sustainability certification, NSMD governance turns to end-use buyers within global value chains to demand and support products verified by third parties as conforming to sustainability standards. However, as the area of agricultural production covered by NSMD systems has increased in major

commodity producing countries, so too has the total amount of land being converted to agricultural production (Edwards and Laurance, 2012; Koh and Wilcove, 2008). This relationship continues despite explicit prohibitions on land conversion in the principal NSMD systems active in these markets.

In this paper we ask: why has the growing presence of NSMD governance in commodity crop producing countries coincided with ongoing deforestation in these same countries? We explore this puzzle through comparative case studies of three certification systems in three countries: the Roundtable on Responsible Soy (RTRS) in Brazil, the Roundtable on Sustainable Palm Oil (RSPO) in Indonesia, and UTZ Certified cocoa in Côte d'Ivoire. We have two objectives. First, we aim to describe the relationship, or lack of a relationship, in each country between the growing uptake of NSMD governance and ongoing deforestation. Second, we seek to offer some initial insights into what drives these relationships by probing several hypotheses deductively derived from the literature on effectiveness in transnational environmental governance. As an exploratory comparative approach, our case

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selection reflects a desire to choose countries and crops where NSMD systems are most likely to have an impact on land use change while also covering a diverse cross-section of certification systems. For these reasons, we focus on Brazil, Indonesia, and Côte d'Ivoire since they are all major producers of soya beans, palm oil and cocoa (respectively) and each of these crops has been linked to deforestation. At the same time, they are also markets that have observed some of the most dramatic uptake of NSMD governance in recent years. As such, if NSMD systems have impacts on land use change – either positive or negative – we would expect to observe them in these markets.

Our findings, based on existing evidence and data, conclude that it is highly plausible that NSMD governance has neither abetted, nor hindered, the conversion of forested land to agricultural production. We find little existing evidence that NSMD systems actually accelerate land use change by shifting production to less-regulated crops or providing perverse market incentives to expand overall agricultural production. However, we also find little evidence to suggest that NSMD systems are applied widely or prescriptively enough to actually halt environmentally destructive patterns of land use change. Importantly, we argue that a lack of market uptake alone cannot explain the dearth of land use impacts from NSMD systems. As one of the first attempts to explain the different ways that NSMD governance affects land use change, this study contributes to the burgeoning literature on effectiveness in transnational environmental governance. It also yields practical insights into how NSMD systems can be better designed to prevent land conversion.

We begin by defining NSMD governance for agricultural commodities, explaining its growing importance, and identifying key gaps in the extant literature. Second, we describe the empirical phenomena we seek to explain: ongoing deforestation alongside a growing presence of NSMD systems. Third, we review our research methods and justify why a cross-national “plausibility probe” is a useful research design. Fourth, we identify five hypotheses that might explain our empirical puzzle. Fifth, we review the existing evidence for and against these hypotheses. Lastly, we conclude by offering theoretical and practical implications and outlining avenues for future research.

## 2. NSMD Governance: what is it, why is it important, and what don't we know?

NSMD governance refers to the diverse constellation of transnational private governance activities that do not derive their political authority from states, but from companies within a global value chain (Bernstein and Cashore, 2007; Cashore, 2002). Many organizations are involved in NSMD governance, including: environmental NGOs, industry associations, and multistakeholder initiatives. These NSMD systems create sets of voluntary rules and standards that are intended to steer the behavior of businesses towards desirable environmental outcomes. Businesses participate in NSMD systems for a variety of reasons, some pertaining to economic self-interest and others pertaining to organizational or managerial values (Potoski and Prakash, 2005; van der Ven, 2014).

By most accounts, the growth of NSMD governance has been both broad and quick (Bernstein et al., 2009; Cashore et al., 2004; Green, 2013). Since the pioneering efforts of the Forest Stewardship Council (FSC, 2017) in the early 1990s, NSMD systems have expanded into virtually every globally viable commercial sector and cover a growing share of production, albeit still a fraction of total production, within these sectors (Cohn and O'Rourke, 2011; van der Ven, 2015). Nowhere are these trends more evident than in agricultural commodities. Today, roughly 21% of global palm oil production (by volume) is certified to RSPO standards and 15% of global tea production is certified to Sustainable Agriculture Network/Rainforest Alliance standards (Rainforest Alliance, 2015; RSPO, 2017). Moreover, a growing number of lead firms in buyer-driven global value chains (e.g., Walmart and Unilever) are mandating minimum sustainability standards for their agricultural

suppliers, thereby further deepening the market presence of NSMD governance (Agrawal et al., 2011; Gereffi et al., 2005). This private sector support occurs at the same time that states and international organizations are placing renewed emphasis on non-state environmental governance to achieve global environmental targets (Chan et al., 2015; van der Ven et al., 2017).

Despite the expanding presence of NSMD systems, little has been written about their ability to achieve desirable land use outcomes. In a comprehensive literature review, Blackman and Rivera (2011) found 46 peer-reviewed studies on producer-level impacts of NSMD systems, however only two of these used “credible” research methods. Furthermore, existing research is largely concentrated on the forestry and coffee sectors, with a few notable exceptions (Auld et al., 2008; Blackman and Naranjo, 2012; Dauvergne and Lister, 2010; van Kuijk et al., 2009; Rueda and Lambin, 2013). Outside these studies, there are several reasons for the inattention to impacts in the NSMD literature (van der Ven and Cashore, 2018). First, analyzing land use change requires sophisticated spatial evaluation techniques (Lambin et al., 2014). These skills are often, though not always, outside the training and expertise of the social scientists who study NSMD governance. Second, land use outcomes are often over-determined; too many other variables can be plausibly linked to changing land use patterns. Third, the criteria and intended impacts of NSMD systems are constantly changing, making it difficult to generalize across time and space in a highly evolutionary and dynamic field. All of these obstacles make it difficult to draw a straight causal arrow between avoided land use change and a particular NSMD system. Furthermore, given that the reasons for land use change vary according to crop and country, there has been little comparative analysis, and therefore, little effort to construct general theories of NSMD impacts on land use change (Newton et al., 2013). Our objective is to make an initial foray into this space to demonstrate why this line of research merits greater attention. We start by illustrating an empirical puzzle: if eco-labels are supposed to help curb deforestation, why have they thus far failed to do so?

## 3. The puzzle: more area covered by eco-labels, but fewer forests

A review of land use data from the Food and Agriculture Organization of the United Nations' (FAO) FAOSTAT website suggests that NSMD governance has, to date, had little impact on patterns of land use change in our three national cases (FAO, 2017). As Figs. 1 and 2 show, the amount of land devoted to the production of soya beans, palm oil, and cocoa has continued to rise notwithstanding the growing coverage of NSMD systems in these markets. Between 2011 and 2015, the number of hectares devoted to the production of RTRS Brazilian soy, RSPO Indonesian palm oil, and UTZ Certified Ivorian cocoa increased by 440% ( $\Delta$  300,000 ha), 163% ( $\Delta$  761,259 ha) and 399% ( $\Delta$  661,596 ha) respectively (RTRS, 2017; Riksanto, 2016, UTZ, 2016). During the same period, the total amount of land devoted to soy, palm oil, and cocoa production in each country increased by 26%, 20%, and 2% respectively (FAO, 2017). This increase in cropland coincides with rising levels of deforestation in Indonesia and with sustained levels of deforestation in Brazil and Côte d'Ivoire as illustrated in Fig. 3 (FAO, 2015).

The lack of any discernible progress on land use change occurs notwithstanding comparatively strong NSMD uptake in these markets and explicit provisions guarding against land conversion and promoting afforestation in the relevant RTRS, RSPO and UTZ standards: RTRS Criteria 4.4 (RTRS, 2013), RSPO Criteria 7.3 (RSPO, 2013a), and UTZ I.D. 113 (UTZ, 2015d). Simply put, a producer cannot obtain RTRS, RSPO, or UTZ certification if there is any evidence that plantations have replaced primary or High Conservation Value (HCV) forest since 2009 (soy), 2005 (palm oil), or 2008 (cocoa). The UTZ and RTRS standards go even further by requiring most producers to implement ecological diversity programs both on-site and in neighboring habitats through afforestation, establishing biological corridors, or other conservation

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