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Article *in* Journal of Rural Studies · January 2021

DOI: 10.1016/j.jrurstud.2020.10.047

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PREPRINT

The impact of oil palm on rural livelihoods and tropical forest landscapes in Latin America[1]

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Abstract

Does oil palm boost agricultural growth and reduce rural poverty, or is it a threat to rural livelihoods and tropical forest landscapes? This paper introduces a Special Issue on this question, focusing on Latin America. It reviews available literature and data for countries where oil palm either covers large areas (Brazil, Colombia, Ecuador, Honduras) or has recently expanded (Costa Rica, Guatemala, Mexico, Peru), and presents evidence from nine case studies (including Nicaragua). Combining political economy with a livelihood approach, this article discusses how dissimilar policies supporting oil palm combined with contrasting agrarian change dynamics, market structures, and institutional arrangements driving rural inclusion (and exclusion) in oil palm production have resulted in a variety of expansion trajectories (ranging from smallholder to plantation-based, plus mixed forms in between) and outcomes across the region. Main findings show that rural livelihoods and landscapes are most threatened where industrial plantations predominate, particularly in weakly governed forest frontiers, while oil palm is beneficial where policies guarantee land access and support smallholders. However, policies that are beneficial to smallholders do not preclude conflicts between oil palm smallholders (often migrant settlers) and forest-dependent (indigenous and Afro-descendant) communities opposing this industry.

Introduction

Palm oil is a key ingredient in profitable global value chains. Unlike any other vegetable oil, it is sourced from a crop (oil palm, *Eleais guineensis*) that grows best in humid tropical regions, where low-income populations often live in biodiversity-rich forests (Sunderlin et al., 2005). The question is if palm oil profitability benefits local populations and at what costs for rainforests. Numerous studies have debated this

[1] Published as: Castellanos-Navarrete, A., de Castro, F., and P. Pacheco, 2021. The impact of oil palm on rural livelihoods and tropical forest landscapes in Latin America. *Journal of Rural Studies* 81(2021):

question regarding Southeast Asia, where most production takes place (Pacheco et al., 2017), but fewer regarding Latin America. This region is now second to Asia in global palm oil provision (i.e., 7%) and, as it has nearly doubled its oil palm area in the last decade (FAOSTAT, 2020; Furumo and Aide, 2017), it is the fastest growing producing region in the world.

The recent oil palm expansion has triggered heated debates over opportunities and threats for the national economy, rural livelihoods, and tropical forest landscapes (Meijaard and Sheil, 2019; Qaim et al., 2020). Several studies have found this crop provides higher income streams for smallholders, and creates jobs for landless rural families, while making them more competitive in global agricultural supply chains (Dib et al., 2018; Feintrenie et al., 2010; Gatto et al., 2017), although with differentiated results across rural populations (Cahyadi and Waibel, 2016; Jelsma et al., 2017). It is also argued that oil palm is an alternative to extensive cattle production in forest frontiers in Latin America, offering opportunities for intensifying land use (de Carvalho et al., 2015; Garcia-Ulloa et al., 2012). Given higher economic returns and recent market demands for environmental certification, research analyses suggest that sustainable production of palm oil may contribute to reduce rural poverty without adding further pressure on forests (Purnomo et al., 2020; Sayer et al., 2012; Wilcove and Koh, 2010).

Others studies point, however, to cases where this crop has fueled the corporate grabbing of community land (Alonso-Fradejas, 2012b; Yengoh and Armah, 2016) and served elites and criminal groups (drug cartels and paramilitary organizations) in their unlawful and violent quest for profits (Ballvé, 2012; Varkkey, 2013). Forest-dependent communities in Southeast Asia have benefited less from oil palm, particularly when lacking infrastructure (Santika et al., 2019), or when compared to better-off migrant smallholders (Obidzinski et al., 2014). Some communities have even lost their land and forests to oil palm plantations with this leading conflict (Abram et al., 2017). Critical studies have also pointed to how this crop might lead to precarious livelihoods for rural workers (Li, 2018; Pye et al., 2012), intra-household gender inequalities (de Vos and Delabre, 2018; Toumbourou and Dressler, 2020), and cases of food insecurity (Balde et al., 2019; Oosterveer et al., 2014). While certification, particularly by the Roundtable on Sustainable Palm Oil (RSPO), has become a key strategy for palm oil governance, recent evidence points to limited environmental gains and significant obstacles for smallholders (Brandi et al., 2015; Ruysschaert and Salles, 2014).

This article introduces a Special Issue joining the debate with the focus set on Latin America. It comprises nine in-depth studies analyzing oil palm expansion dynamics and the livelihood implications for disparate social groups (oil palm smallholders, forest-dependent communities, and rural workers). The collection spans a range of theoretical frameworks used to address the diversity and multidimensionality of oil palm expansion trajectories in Latin America. From smallholder-based production to corporate plantations integrated into their own mills, including mixed forms of production in between, we observe different forms of inclusion (and exclusion) in oil palm production, leading to divergent outcomes for both livelihoods and landscapes.

Five cases are analyzed through a critical agrarian studies lens, of which three studies rely on concepts of land and control grabbing (see León Araya, 2019;

Mingorría et al., 2020; Potter, 2020), and two combine it with political ecology (see Castellanos-Navarrete et al., 2019; Tittor, 2020). Two studies focus on the value chain arrangements linking companies, development actors, and smallholders driving oil palm production (see Brandão et al., 2019; Muzo and Pacheco, 2020). Johnson (2019) frames her analysis of oil palm certification in Ecuador through a Foucault-inspired theoretical lens, while Watkins (2018) relies on the concept of assemblage in Science and Technology Studies to approach the complex socioecological dynamics involved in traditional oil palm production in coastal Brazil. In most cases, politics is central to the analysis of oil palm expansion dynamics. The large influence of national governments and international donors across the region in favoring oil palm production, the role of power in shaping inclusion and exclusion, as well as the complex political responses triggered amongst the rural population has turned oil palm expansion into a highly contentious process.

In this introductory article to the Special Issue, we review oil palm expansion in Latin America for both countries where oil palm covers large areas (Brazil, Colombia, Ecuador, and Honduras) and those where it has recently expanded (Costa Rica, Guatemala, Mexico, and Peru), as well as the articles in this collection (which also include Nicaragua). Drawing on academic literature and secondary data (i.e., government and sectoral statistics, as well as data offered by corporations, smallholder cooperatives, and non-governmental organizations (NGOs)),[2] we focus on three aspects: expansion trajectories (i.e., patterns of land distribution within oil palm production based on producer types), smallholder inclusion arrangements in palm oil value chains, and livelihood and forest implications of contemporary oil palm expansion. We categorize producers into three types: smallholders (<50 ha), middle- scale growers (50–200 ha), and large-scale growers (>200 ha).

To analyze rural livelihoods, we take a 'political economy informed livelihood perspective' that centers on the implications oil palm has for rural households but set in the larger context of land and labor dynamics, as shaped by states and capital (Vicol, 2019). This perspective overcomes the "win-win" and "win-lose" narratives often driving the discussion on commercial agriculture impacts (German et al., 2020; Oya, 2012), and allows for a nuanced temporal and spatial analysis of value chains with attention to agrarian dynamics. In this case, this approach helps to illuminate the contextual-dependent outcomes of oil palm expansion, as shaped by a host of complex factors ranging from new sustainability demands shaping value distribution to land politics and changing rural development paradigms.

It is important to note that oil palm is not new to this region. West African slaves brought oil palm to Latin America in the seventeenth century (Watkins, 2018, this issue). In the 1940s, the United Fruit Company established the first oil palm plantations across Central America as an alternative to Panama disease ridden banana plantations, as well as prompted by World War II supply needs (Clare Rhoades, 2011,

[2] We encountered some limitations when carrying out this review. Regarding published studies, few studies compare smallholder inclusion arrangements or link case studies of social impacts to larger national and regional dynamics in a robust manner. As for statistical data, we found data was limited for Colombia, Guatemala, Mexico, and especially Honduras. Statistical information aggregates different producer types in Guatemala and Mexico, it was outdated for Colombia and incomplete for Honduras. We used different sources to build estimates, which in the case of Mexico included the use of satellite images.

44–45). The company distributed oil palm seedlings to both governments and commercial producers across Latin America as early as 1936 (Richardson, 1995). As described in this article, state agencies and international organizations promoted oil palm as part of land resettlement programs in forest frontiers in the 1970s and 1980s, and as an alternative to coca cultivation starting in the 1990s in Colombia and particularly Peru (Bennett et al., 2019). More recently, oil palm expanded as part of governments' push for biofuel production (German et al., 2011; Selfa et al., 2015). Except in Colombia, plans to use palm oil as biofuel feedstock have largely failed.

This article and Special Issue explore how such oil palm expansion cycles – intersecting with colonial trade, twentieth century capitalism, land resettlement programs, drug eradication policies, or emerging green economy alternatives – which have receded in some regions due to sudden wilt and bud rot disease outbreaks, have shaped contemporary outcomes across Latin America's geographies. Dissimilar policies supporting oil palm combined with contrasting agrarian change dynamics, market structures, and institutional arrangements driving rural inclusion (and exclusion) in oil palm production have resulted in a variety of expansion trajectories and outcomes across the region. In what follows, we first review oil palm expansion trajectories in Latin America, the different ways smallholders are incorporated into palm oil value chains, and the livelihood and landscapes consequences of oil palm production. We then introduce the articles of this Special Issue and their major findings.

Oil palm expansion trajectories

In Latin America, oil palm follows three distinct trajectories: (1) smallholder-based expansion in which smallholders own the largest proportion of the total area under oil palm; (2) mixed expansion trajectories in which smallholders and large-scale producers own a similar proportion of the total area under oil palm; and (3) large-scale agribusiness-based expansion in which most oil palm is grown on large plantations. In this section we provide an overview of such expansion trajectories across study countries, and discuss driving factors. As Brandão et al. (2019, this issue) warn the "dichotomy between agribusiness and family farming conceals important distinctions between different types of private companies and smallholder families, and masks actors, such as rural workers and middle-scale farmers, who play important and differential roles in the [oil palm production] process." Thus, for a better understanding of expansion trajectories, we also delve into internal differences within producer categories.

Honduras and Mexico follow a smallholder-based expansion trajectory, as this type of producers owns a large proportion of the total area under oil palm (61 and 53%, respectively) (Table 1). In Honduras, smallholders coexist with the very few firms that own large oil palm areas (León Araya, 2019, this issue), while in Mexico, the corporate landscape is more fragmented: there are more private sector producers and their plantations tend to be relatively small (1,000 hectares on average, with many below 500 hectares) when compared to those in Honduras. In Mexico, middle-scale growers occupy about 7% of the oil palm area and they comprise both capitalized smallholders who have accumulated land within their communities and

cattle ranchers who shifted to oil palm production (Castellanos-Navarrete and Jansen, 2018).

Ecuador, Peru, and Costa Rica are characterized by a mixed oil palm expansion trajectory. Smallholders own about one third of the oil palm area, with Peru holding the largest share (39%). Despite their mixed oil palm expansion trajectories, these countries show important differences among them. Costa Rica stands out, as smallholders have, on average, the largest oil palm area per capita: 22 hectares (ha), in contrast with Ecuador (14 ha) and Peru (7 ha). Regarding large-scale production, Ecuador has 152 industrial plantations averaging 746 ha (ANCUPA, 2017), while Costa Rica and Peru have just a handful of companies that own very large plantations.

Guatemala, Colombia, and Brazil follow large-scale agribusiness- based expansion trajectories. In Guatemala, 95% of the oil palm area is located in large-scale plantations and smallholders play a negligible role (i.e., 3% of the oil palm area). In Brazil and Colombia, 73% and 72% of the national oil palm area is found as large-scale plantations, respectively. Middle-scale producers – e.g., Japanese migrant settlers in the Brazilian Amazon or cattle ranchers in Colombia's savannas – own a percentage of the national oil palm area similar to that of small-scale producers.

Oil palm expansion across the region shares two characteristics. First, large corporate plantations play a significant role in oil palm production across all countries. And second, labor for oil palm production is provided by (near) landless rural inhabitants, which includes migrants from neighboring regions, as is in the case of Petén in Guatemala, Tabasco in Mexico, and Pará in Brazil (Abrams et al., 2019; Brandão et al., 2019, this issue; Hurtado Paz and Sánchez Monge, 2012), or from neighboring countries, as in the case of Guatemalan laborers in southern Mexico or Colombian workers in northern Ecuador (Castellanos-Navarrete et al., 2019, this issue; Mideros Zamora, 2010, 70).

Contrasting oil palm trajectories across Latin America are related to wider political economies shaping agrarian change dynamics and development policies. The pre-eminence of large-scale agribusiness-based trajectories in Guatemala, Colombia, and Brazil is the result, to a large extent, of pre-existing unequal agrarian structures, land tenure regimes posing few obstacles to land concentration, and, in some cases, oil palm policies biased towards large-scale producers. Both in Guatemala and in the eastern Brazilian Amazon, for instance, liberalized land tenure regimes combined with unequal land distribution offered large corporations (mostly domestic) the opportunity to access significant amounts of land (Córdoba et al., 2018). Contrary to popular notions of oil palm expansions, these companies mostly purchased or leased land from large- and particularly medium-sized landholders (cattle ranchers). But there was one notorious exception. In Petén (northern Guatemala), companies purchased land from indebted smallholders right after it was titled with funding from the World Bank (Grünberg et al., 2012). Positive market prospects for palm oil, as well as a favorable policy environment linked to biofuel production, led oil companies to invest in land acquisition. The outcome has been significant land concentration within the oil palm sector. In Brazil, five companies came to own 64% of the national oil palm area. A similar trend occurred in Guatemala, where three companies control 41% of the total area under oil palm.

Table 1. Oil palm area in hectares per producer type and country.[1]

Country	Total area (latest figure)	Census						Oil palm area owned by largest producer
		Year	Smallholders (< 50 has)	Medium producers (50-200 has)	Large producers (> 200 has)	Average oil palm area owned by smallholders	Average area for large-scale plantations	
	(has)	(yr)	(% total has)	(% total has)	(% total has)	(has)	(has)	(has)
Honduras	190,000*	2018	80	4	16	<10	Unknown	13,300
Mexico	101,753*	2015	65	15	20	6	452	7,224
Peru	95,286*	2014	39	17	44	7	8,375	25,704
Ecuador	257,121	2017	31	25	44	14	746	25,314
Costa Rica	76,910	2014	27	7**	67	22	237	24,857
Brazil	236,252*	2016	16	11	73	Unknown	14,416	56,487
Colombia	559,582	2011	13	15**	72	12	822	13,792
Guatemala	171,452*	2019	3	2	95	10	Unknown	30,619

* Estimation based on several official and sectoral sources, sometimes complemented with scientific literature.

** Given official data limitations, we consider medium producers to be those having between 50 and 100 hectares.

[1] Sources: ANCUPA et al. (2017), Brandão et al (2018, this issue), FAOSTAT (2020), FEDEPALMA (2011, 2019), GREPALMA (2019), INEC (2014), JUNPALMA (2014), MAPA (2018), RSPO (2019), SHARP (n.d.), SIAP-SAGARPA (2018), and SISPA (2019).

In Colombia, oil palm has mostly expanded in Orinoquia's floodplain savannas (known as *Llanos Orientales*) and in the Caribbean lowlands. As in Brazil and Guatemala, land tenure in Colombia has set few limits for the establishment of large-scale plantations. This, combined with unequal land distribution, particularly at the Llanos Orientales (Castiblanco et al., 2015), which contribute 40% of the total oil palm area (FEDEPALMA, 2019), has resulted in oil palm production skewed towards large-scale landholders. In the Llanos Orientales, smallholders account for less than 1% of the oil palm area, while large landholders are particularly dominant (93%) (FEDEPALMA, 2011). The Caribbean lowlands follow a more balanced expansion trajectory in which both smallholders and medium-scale producers account for 21% of the total oil palm area, while industrial plantations cover the rest (57%).

Oil palm development policies implemented in Colombia have, however, led to the emergence of a more diversified corporate landscape when compared to Brazil or Guatemala. Government policies in Colombia have been particularly supportive of domestic companies. Early efforts (1960s–1970s) included financial stimulus for the establishment of mid-sized large plantations (500 ha), policies supporting national consumption of palm oil (including trade barriers to imports), and early public-private partnerships favoring the emergence of domestic companies (Rueda-Zárate and Pacheco, 2015, 7–8). The imprint of such policies is evident to this day, with this country characterized by a high number of mid- and large-sized domestic companies engaged in oil palm production and owning oil palm plantations of 822 ha on average (cf. Table 1). Support for these companies continues, the latest of which has been linked to biofuel production, possibly as the result of Colombia's powerful growers' association lobby in favor of national large-scale growers (Potter, 2020, this issue).

In contrast with countries characterized by large-scale agribusiness- based oil palm expansion trajectories, smallholders in Honduras, Costa Rica, Mexico, and Peru own significant proportions of the national oil palm area. Governments and donors granted smallholders both large areas of land and very significant support to cultivate oil palm, although in different periods. In Honduras and Costa Rica, oil palm was promoted amongst smallholders in the 1970s and 1980s after they received state lands formerly leased to the United Fruit Company (Clare Rhoades, 2011, 97–148; León Araya, 2019, this issue). Once this company left the region, land was sold by the state to both former United Fruit Company workers and landless families, sometimes after land invasions. In Honduras, land redistribution involved a large national resettlement program for landless families. Support from the national state and international donors required smallholders to engage in cash crop production (including oil palm) as well as to work under the form of smallholder cooperatives (see next section).

In Mexico, state projects incentivizing oil palm production targeted agrarian reform beneficiaries (*ejidatarios*) starting in the late 1980s in coastal Chiapas (Castellanos-Navarrete and Jansen, 2018). In the mid-1990s and up to very recently, the Peruvian government, along with international organizations, particularly the United Nations Office on Drugs and Crime and the United States Agency for International Development, have promoted oil palm as an alternative to coca cultivation amongst migrant settlers in forest frontiers (Muzo and Pacheco, 2020, this issue).

Smallholders in the above-mentioned countries became important key palm oil value chain players as they were owners of land, were well organized and financially and technically supported, and there were none or few private sector companies engaged in oil palm production. The neoliberal turn in development policies started in the 1990s has, however, left smallholders with fewer opportunities for inclusion. Land reform and land distribution in forest frontiers were terminated across the region, which means smallholders have no opportunity to access land beyond inheritance or purchase. In addition to this, in countries such as Honduras, land tenure was fully liberalized and limits to land ownership removed (Edelman and León Araya, 2015). This proved particularly disastrous for smallholder cooperatives in Bajo Aguán where indebted smallholder cooperatives sold about 21 thousand hectares of land, including oil palm plots, to agribusinesses, leading to emergence of large-scale oil palm production (León Araya, 2019, this issue).

Policy changes also resulted in state subsidies flowing to the private sector. In Mexico, state support has targeted smallholders since the 1980s. However, in the context of biofuel promotion in 2006, the state also provided free seedlings and offered subsidies to large-scale producers. A federal program supporting oil palm production between 2013 and 2017 handed 70% of its resources to companies, some owned by large corporate groups. Such policies have contributed to the emergence of large-scale oil palm production from Palenque (northern Chiapas) to southern Campeche, where the predominance of large, titled private farms favored land use consolidation. Similarly, in Peru, the government granted large tracts of state land in favor of several companies (EIA, 2015, 5–17), which established five plantations totaling more than 40 thousand hectares.

Market-based development starting in 1980s and 1990s strengthened large-scale oil palm production in countries where smallholders were important players in the value chain. This led to the emergence of countries characterized by mixed oil palm expansion trajectories and, in some cases, to land concentration. In northern Ecuador, oil palm came relatively late (1998). In Esmeraldas, 88% of the oil palm expansion took the form of large-scale production, while only 6% of the planted area belongs to smallholders (ANCUPA, 2017). In Peru, large-scale plantations are in the hands of only two corporate groups (one Peruvian and other Malaysian) who together own about 44% of the national area under oil palm. In Costa Rica, one single company has ownership of about 32% of the national area under this crop (cf. Table 1).[3]

This shift in oil palm related policies has not gone uncontested. In Honduras, former smallholder cooperative members and their families took over 20,000 ha of private sector oil palm plantations in 2009 (León Araya, 2019, this issue). This led to violent agrarian clashes in which 129 peasants were killed. Contrary to media explanations, this was not a clash between subsistence smallholders and oil palm companies, but between former oil palm smallholders and large companies favored

[3] Oil palm expansion trajectories in Peru and Costa Rica are both mixed, but come from opposite ends. In Peru, the growth of large companies is a recent phenomenon, mostly starting in the early 2000s. By contrast, in Costa Rica, the oil palm company Palma Tica came first and smallholders later. Palma Tica, an offshoot of the United Fruit Company, is the first company to have planted oil palm in Latin America.

by liberalization policies. In Mexico, where the ejido land tenure is still dominant in some oil palm regions, such as in parts of Chiapas, smallholders are relatively protected from land dispossession as it excludes debt-related expropriation and provides communities assemblies with legal say in land transactions. As a consequence, oil palm companies have had to negotiate with smallholders, with several communities opposing land sales or leases to companies (Castellanos-Navarrete and Jansen, 2015). Next we turn to the different ways smallholders are incorporated into oil palm production.

Smallholders in palm oil value chains

There are three main types of oil palm smallholders in Latin America: (1) "contract smallholders" who engage in oil palm production through contract farming arrangements with corporate mills; similar to Indonesian nucleus estate-smallholder schemes (Cramb and Curry, 2012), this arrangement implies a company provides access to a mill as well as inputs and technical assistance on credit while smallholders manage their oil palm production and commit to sell their produce through mid- (10–15 years) or long-term (20–25 years) individual contracts; (2) "organized smallholders" who enter oil palm production as cooperatives members; they reach collective commercial agreements with mills and have often received sizeable state or donor support, including free oil palm seedlings and low-interest loans (some cooperatives own a mill, and small-scale producers earn revenue from selling oil palm fruit and from shares on palm oil processed sales); and, (3) "independent smallholders" who sell fruits to their preferred mill, from which they might receive some technical and economic support without contractual arrangements; they are self-funded, some are well endowed, and their entry in oil palm production has often being eased by some state or donor support.

Contract smallholders are prevalent in countries dominated by large-scale agribusiness-based production (Guatemala, Colombia, and Brazil). They are particularly numerous in Colombia, where about 6,000 contract smallholders are linked to 27 mills (Rueda-Zárate and Pacheco, 2015, 36–37), and less so in Brazil and particularly Guatemala (311 smallholders incorporated in only one region; Guereña and Zepeda, 2013, 39–40; Hervas, 2019). Independent and organized smallholders are mostly found in countries characterized by mixed (Peru, Ecuador, and Costa Rica) and smallholder-based (Mexico and Honduras) oil palm expansion trajectories. Independent smallholders are found in many countries in Latin America, and seem to be particularly significant in Ecuador (e.g., Rafflegeau et al., 2015). Organized smallholders are prevalent in Honduras and Mexico, and are also present in Peru and Costa Rica. Organized smallholders holding their own mill play a significant role in Honduras and Peru (25% of the national oil palm area) and, to a lesser extent, in Mexico and Costa Rica. Shifting development policy paradigms and pre-existing market structures have been particularly relevant in configuring how smallholders are incorporated in palm oil value chains. In Costa Rica and Honduras, this process started in the 1980s through state land redistribution. Land grantees along the central and southern Pacific coast in Costa Rica and the northern Atlantic region in Honduras were encouraged to form cooperatives, to which land was credited and titled. Development planners considered cooperatives as the best way to achieve

economies of scale, but also to modernize a rural population seen as too individualistic and backward (León Araya, 2019, this issue). Supported by the national state and international donors, smallholders were incentivized to engage in cash crop production (oil palm, banana, and cacao). They received inputs, technical assistance and, in the case of Honduras, also mills (Table 2). The goal was to move smallholders away from subsistence farming, particularly shifting maize cultivation, which was considered the cause of several economic, social, and environmental ills (Jansen, 1998), and turn them into suppliers for the national food oil market. Development programs encouraged smallholders to pool their land and labor for oil palm production, distributing tasks as in a company, and become in this way efficient and self-sustaining commercial agriculture operations.

In Mexico, support for oil palm production was also handed to organized smallholders in coastal Chiapas starting in the late 1980s (Castellanos-Navarrete and Jansen, 2018). Government officials conceived market integration through "collective production" as the best way to achieve economies of scale within the smallholding sector. While support for smallholders extended to other regions and continued until very recently (the latest expansion was linked to biofuel production), the development rationale shifted to neoliberal policies. As a result, government spending on rural development was replaced by free trade policies, and support for community-based cooperatives shifted to smallholder organizations modeled after ideas of rural entrepreneurship.

In Peru, smallholder inclusion in oil palm production has been mostly driven by coca replacement programs implemented by national and regional state agencies along with international donors and NGOs along the Huallaga Valley in the Peruvian Amazon starting in the mid 1990s. Such programs sought to discourage smallholders (mostly migrant settlers) from cultivating coca by easing their access to lucrative agribusiness supply chains, including palm oil. These programs followed the "alternative development" paradigm, which emphasized the need for development support for coca growers along with drug eradication policies (Manrique, 2017). The "war on drugs" justified the investment of large amounts of money into rural development in a period when some state budgets in Latin America were declining following the implementation of Structural Adjustment policies. These programs provided smallholders with infrastructure, eased land titling and free oil palm seedlings, low-interest credit, and mills (Bennett et al., 2018a, b; Bennett et al., 2019; Dammert-Bello, 2019). Similar to Mexico and Central America, support for organized smallholders (Borasino, 2016, 57) was a way to scale up development impacts.

As development policies supporting smallholders have retreated, independent smallholders have gained in importance. This heterogeneous group encompasses self-capitalized, partially funded or previously organized smallholders who left their organization out of disappointment (Clare Rhoades, 2011, 156; Zegarra and Vargas, 2016, 125–132). It also includes traditional oil palm producers located in Bahia (Brazil) (Watkins, 2018, this issue). Although independent smallholders have become one of the few entries, if not the only one, into oil palm for smallholders in some regions, research on their inclusion pathways is limited. In Honduras, for instance, smallholder mills have trained and partly funded independent smallholders to

become their suppliers. As in the contract farming arrangements explained next, these mills have required smallholders to form associations.

In countries where large-scale production is dominant (Guatemala, Brazil, and Colombia) state agencies and donors have partnered with the private sector to incentivize smallholder inclusion. State or donors have in this case provided smallholders with (low- or zero interest rate) loans to cover labor costs, and the purchase of inputs and technical assistance from private sector mills, to which they commit to sell all their produce through contractual arrangements (cf. Table 2). Such programs have often encouraged smallholders to form associations, which are conceived as the best strategy to step up production as well as reach economies of scale. But, unlike organized smallholders who reach collective commercial agreements with mills, contract smallholders mostly link to mills through individual contracts.

In this case, smallholder inclusion has been driven by ideas linked to the "inclusive business" development paradigm. This paradigm conceives big public spending on rural development as unsustainable (or unattainable), and sees public-private partnerships fostering smallholder integration into agribusiness supply chains as a win-win solution, with gains to local livelihoods, the private sector, and rural economies (German et al., 2020). The ProRural Program in Guatemala, the Sustainable Palm Oil Production Program in Brazil and the Alianzas Productivas (Productive Alliances) framework in Colombia all fit the "inclusive business" blueprint. Contract farming has in most cases made smallholders highly dependent on single companies, as they had to commit to a single mill, sometimes through restrictive contract arrangements (Brandão and Schoneveld, 2015, 19–21; Guereña and Zepeda, 2013, 37–40; Rueda-Zárate and Pacheco, 2015, 38).

In sum, differences regarding smallholder inclusion arrangements need to be understood in relation to the larger policy and market contexts. In countries where large-scale production is dominant, smallholders came late and with limited funding. Smallholders entered a market already structured in favor of large companies. In countries where smallholders play a greater role, many small-scale landholders entered oil palm production when none, or few, private mills were available and in times of large public investment into rural development. This sector was strengthened before private companies played a significant role in oil palm production, which provided smallholders a favorable market position. Recent policy changes, however, have limited smallholder inclusion in oil palm production to contract farming, which, as we see next, might not fare as well as other models when it comes to livelihood improvement.

Table 2. Inclusion arrangements for different smallholder types found in Latin America[1]

Smallholder type	Country	Production				Linkage to mill		
		Oil palm seedlings (Free /Credited)	**Other inputs** (Free /Credited)	**Technical assistance** (Free /Credited)	**Organized** (Y/N)	**Type**	**Land as collateral** (Y/N)	**Price** (% CPO)
Contract smallholders	Costa Rica (CR)	Free	Credited	Credited	N	Mid-term individual contract	Y	22%
	Brazil (BR) Colombia (COL) Guatemala (GT)	Credited	Credited	Credited	Y	Long-term individual contract	Y Y N	10-16% (BR) 14-20% (COL) 14% (GT)
Organized smallholders (with mill)	Costa Rica (CR) Honduras (HN) Mexico (MX) Peru (PR)	Credited Credited Free Free	Credited	Free	Y	Collective commercial arrangement (CR, MX)	N	22% (CR) 12.5% (MX) 14.5% (HN)
Independent smallholders	Ecuador (EC) Honduras (HN) Peru (PR)	Self-funded Credited Credited	Self-funded Credited Credited	None Credited Credited	Y	Collective commercial arrangement (HN)	N	15-17% (HN)

[1] Sources: Bennett et al. (2018, 2019); Borasino (2016); Brandão and Schoneveld (2015), Castellanos-Navarrete and Jansen (2015); Clare Rhoades (2011); Guereña and Zepeda (2013); Muzo and Pacheco (2020, this issue); Rafflegeau et al. (2015); Rueda-Zárate and Pacheco (2015). Information was also derived from corporate and cooperatives' official websites.

[2] Crude Palm Oil (CPO).

Livelihood and landscape outcomes

The analysis of oil palm expansion trajectories across Latin America reveals some common patterns of inclusion and exclusion, which shape livelihood and landscape outcomes. In this section, we first discuss the implications oil palm has for the livelihood of smallholders engaged in this sector, and then for other rural inhabitants who are either adversely incorporated or negatively affected, as well as for forest landscapes.

Oil palm smallholders

Oil palm smallholders hold some common characteristics across Latin America. They are mostly migrant settlers in rainforest frontiers. These producers mostly reached oil palm producing regions through land colonization state programs and, in some cases, on their own (Bennett et al., 2019). These are producers who often manage land individually (Bennett et al., 2018a, b; Minda Batallas, 2002, 61–63), and have frequently been willing to convert forests into cash production (Finer and Olexy, 2016; Muzo and Pacheco, 2020, this issue). With the exception of some indigenous smallholders in southern Mexico and northern Guatemala (Castellanos-Navarrete et al., 2019, this issue), or Afro-descendant oil palm producers in Bahia in Brazil and Tumaco in Colombia (Restrepo, 2004; Watkins, 2011), they are mostly mestizo men.

As León Araya argues in this Special Issue, these subjects have been long in the making. Many of these migrants focused on subsistence crop production on their arrival to forest frontiers, but as they were targeted by development programs focused on cash crop production, and oil palm production in particular, they gradually turned into willing *palmeros* (oil palm producers). Others were former plantation workers or first enrolled in coca cultivation, becoming market-minded producers who easily turned to other types of cash crop production (Castellanos-Navarrete and Jansen, 2018; Marin-Burgos, 2014, 87). Nowadays, oil palm can sometimes be a key element of their identities, and even a source of pride (see, in this issue, Brandão et al., 2019; León Araya, 2019).

Several studies refer to the positive outlook smallholders have on oil palm across Latin America, based on surveyed producers' interest in expanding their oil palm areas (Beggs and Moore, 2013, 14–17; Bennett et al., 2019). This trend has to do with higher prices of oil palm when compared to other land use options such as staple or other cash crops (e. g., banana or cacao) or extensive cattle ranching (Clare Rhoades, 2011, 141–145). Smallholders often mention year-round harvests as particularly advantageous when compared to crops with once or twice a year bulky harvests that lead to declining prices through oversupply peaks (da Mota et al., 2019, p. 81). Smallholder perceptions are, however, of limited value to analyze livelihood outcomes, as they are rapidly transformed by temporal changes in palm oil prices (Brandão et al., 2019, this issue) or derived from experiences within a single inclusion arrangement. Next, we offer some findings that are tentative given that very few studies compare livelihood outcomes by oil palm across inclusive schemes.

Based on a mid-sized survey (i.e., 304 producers), Zegarra and Vargas (2016, 136–141) found contract smallholders in Peru achieved better yields and greater income

when compared to organized and particularly independent smallholders. For Colombia, Rueda-Zárate and Pacheco (2015, 47) have reported an average yield for contract smallholders of 18.9 metric tonnes per hectare and year (MT/ha/yr), well above values reported for non-contract smallholders in Mexico (15.6), Peru (11.6), and Ecuador (11.3) (Castellanos-Navarrete and Jansen, 2018; Muzo and Pacheco, 2020, this issue; Rafflegeau et al., 2015). Plantation-smallholder contract arrangements often benefit smallholders through access to high quality oil palm varieties and specialized technical assistance, which might translate to better economic performance. Contract farming has, however, also been associated with higher debt levels when compared to other inclusion arrangements.

In the Peruvian Amazon, Bennett et al. (2019) found contract farming led smallholders' debt to triple when compared to state sponsored projects. While contract farming arrangements charged producers for oil palm seedlings and technical assistance through their credit schemes, these benefits were freely provided to organized smallholders supported by the state and other donors. The greater financial commitment in contract farming creates new vulnerabilities for smallholders. In Pará (Brazil), falling palm oil prices in 2015 resulted in smallholders defaulting on credit payments, with some even dropping out of oil palm production (Brandão et al., 2019, this issue; see, also, da Mota et al., 2019, 82). Debt might be particularly risky for contract smallholders when land is collateral for credit and may lead, in some cases, to land loss (Ojeda et al., 2015). Studies that explore the link between debt and the loss of land and other assets by oil palm contract smallholders in Latin America are, however, virtually non-existent.

Organized smallholders, particularly those owning a mill, might be the ones who most benefit from oil palm. Despite possible low yields, they not only obtain income from selling fruit but also often receive low-interest loans, inputs, and technical assistance from their mill-funded cooperatives (benefits which might also extend to independent smallholders) as well as income from crude palm oil (CPO) sales and their own mill shares. Higher incomes for organized smallholders have often translated to land purchases, as observed in southern Mexico and the Peruvian Amazon's forest frontiers (Castellanos-Navarrete and Jansen, 2015; Muzo and Pacheco, 2020, this issue).

This model has, however, not always worked well. Corruption and poor management have been major issues in smallholder cooperatives, with some members moving to other cooperatives or out completely (Bennett et al., 2019; Clare Rhoades, 2011, 156; Dammert-Bello, 2019, 49–50). Northern Honduras is a case in point, where the government built three palm oil mills through aid loans in the 1970s. The loans were transferred to smallholder cooperatives, and were to be paid off through CPO sales. In Bajo Aguán, the profit from CPO sales was pocketed by leaders and the debt was paid for only some cooperatives. Once given the opportunity, many smallholders sold their land (partially covered in oil palm) below market prices in a desperate attempt to pocket some earnings, only to later realize how profitable this crop was (de Fontenay, 1999).

Forest-dependent communities and other rural inhabitants

In contrast to oil palm smallholders, who are mainly migrant settlers, most indigenous and Afro-descendant communities, who have long inhabited forest frontiers, are excluded from oil palm production. These are usually forest-dependent communities, where land titles and sometimes decisions regarding land use are collective. Customary land tenure has often been illegible to state or private sector programs supporting smallholder inclusion, in which individual land titles are often a pre-requisite for credit provision and contract farming arrangements (Johnson, 2014; Ojeda et al., 2015). With the exception of Mexico, where a collective land tenure regime (*ejido*) has received state support for oil palm cultivation, very few cases of inclusion of smallholders within communal land tenure regimes have been reported (Clare Rhoades, 2011, 102–103; Rueda-Z´arate and Pacheco, 2015, 44–45).

In some cases, these communities have been subjected to land grabbing strategies. They received offers for land purchases along with wage labor opportunities, such as in San Lorenzo (Ecuador) and in the northern lowlands of Guatemala. In both cases, companies or middlemen, including community leaders, pressured local people to sell their land. In Petén, these sales involved both q'echi and mestizo settlers (Alonso-Fradejas, 2012b). In San Lorenzo, oil palm companies illegally purchased communal land belonging to Afro-Ecuadorian communities (Antón Sánchez and García Serrano, 2015). According to a report cited by these authors, these communities have lost 29,910 ha (23% of their total land) in favor of mining operations, shrimp production, and oil palm. Neither land purchases, sometimes below market prices, nor wage labor has resulted in livelihood improvements (Mingorría et al., 2014). Work arrangements in private sector plantations are often based on piece-rate payments, short-term contracts, and employment outsourcing to third parties, which are attractive mostly to young men, often migrants, who are eager to work intensively for a few weeks to get some money (Castellanos-Navarrete et al., 2019, this issue).

As oil palm expansions have provided limited benefits to indigenous and Afro-descendant communities, many have opposed land purchases and oil palm cultivation, particularly by corporations. Conflicts have, for instance, emerged in northern Guatemala, in Sucumbíos in Ecuador, and in the Ucayali region in Peru (Alonso-Fradejas, 2012a; Dammert-Bello, 2017, 172–173; Potter, 2011). Less recognized in the literature is the emergence of internal conflicts in communities and rural areas as several local actors have found company offers for land or work attractive (Mingorría et al., 2020, this issue). In San Lorenzo, for example, conflicts have erupted as some have sold their land despite the communal land tenure status (Minda Batallas, 2002, 138–141). Tensions have also often emerged as market-minded mestizo settlers support oil palm production while neighboring indigenous and Afro-descendant communities oppose its expansion (Brandão et al., 2019, this issue). Smallholder migrant settlers have supported the establishment of large-scale plantations, even when this has displaced other local inhabitants, as they prioritize infrastructure development and potential opportunities to enter this value chain (Bennett et al., 2018a, b).

Conflicts are complicated by the violence dynamics present in many forest frontiers across Latin America. In Colombia drug barons have, in several regions, forcibly displaced peasants and sold their land to large oil palm companies (Gómez et al., 2015; Laverde and Guzmán, 2016). In northern Honduras, oil palm has been

associated with money laundering by drug traffickers (McSweeney et al., 2017). But drug trafficking interests and violence do not always work to the advantage of oil palm production. In Benemérito de las Américas (Mexico), both large and small oil producers risk extortion by criminal groups and at least two oil palm smallholders interviewed by the first author have been killed. While the presence of drug cartels along many forest frontiers where oil palm is cultivated is common, be it because these are drug-producing regions (e.g., Tumaco in Colombia) or because they are located in trafficking corridors (e.g., northern Honduras or southern Mexico), other armed groups have also shaped oil palm expansion.

In Colombia, 5.7 million people have fled from their rural communities or have been violently displaced (IDMC, 2019, 127). Unsurprisingly, several cases link dispossession to oil palm cultivation (see map by Marin-Burgos, 2014, 82), particularly by paramilitary militias. In the Chocó region, paramilitary groups have dispossessed large numbers of Afro-Colombians from their communal land and engaged in oil palm production themselves or sold the land to agribusinesses (Oslender, 2007). For instance, García Reyes (2014) reports the loss of 14,801 ha of communal land to oil palm companies in the Bajo Atrato region. Similarly, oil palm expansion in parts of the Llanos Orientales was preceded by the violent dispossession of local populations, including indigenous communities (Rodríguez González, 2014). In this region, reports indicate paramilitaries planted at least 12 thousand hectares with oil palm on former peasant lands (Osorio Pérez, 2015). Recent studies suggest the existence of a link between land control by paramilitaries and oil palm expansion in particular regions, often played with the consent of government actors (Ballvé, 2012; Maher, 2015; Potter, 2020, this issue).

Gender issues deserve special attention. As men were the beneficiaries par excellence of land distribution in Latin America (Deere and León, 2003), women's inclusion in oil palm production has mostly been limited to partners and spouses of oil palm smallholders. Many of these women have scant access or control over oil palm earnings, as men are the ones receiving payment when fruit is delivered (León Araya, 2017). The only women found in oil palm production are often the so-called *semilleras* or *pepenadoras*; that is, women paid to collect loose oil palm fruits from the ground. This is the lowest rank in the oil palm labor hierarchy, and often the worst paid job (Restrepo, 2004). Both employers and fellow workers consider women to be physically unfit to carry out other tasks (Castellanos-Navarrete et al., 2019, this issue).

In other words, women are routinely excluded from oil palm production, they often have little control over oil palm earnings within the household, and when included they are incorporated in the lowest ranked positions within the palm oil value chain. However, as noted in some studies (Soley Ramos, 2016, p. 95), income improvements brought by oil palm might lead to increased autonomy for women when household earnings allow them to set up their own businesses. But in general, even when oil palm expansions improve rural livelihoods, benefits are unevenly distributed across rural populations.

Forest landscapes

In contrast with the pattern of extensive deforestation observed in Southeast Asia, in Latin America oil palm has mostly expanded over cattle pastures (56%) and cropland

(23%) (Furumo and Aide, 2017). This crop has expanded over banana plantations in coastal Central America and, more recently, over consolidated forest frontiers across the continent, where significant deforestation, often driven by cattle, has already taken place. In Latin America, oil palm has become an attractive alternative to cattle ranching, as this crop is more profitable per hectare than extensive cattle production, even with compacted and low-fertility soils (Corley and Tinker, 2003, 74–75). Furumo and Aide (2017) indicate, however, that 21% of the oil palm area they surveyed in Latin America involved deforestation. This is the case for both the Peruvian Amazon and Petén in Guatemala, where about 30 thousand and 10 thousand hectares of forests have been lost to oil palm, respectively (Finer et al., 2018; Vijay et al., 2018).

In both cases, large-scale plantations played a prominent role in forest loss. In the municipality of Sayaxché (Petén, northern Guatemala), a handful of oil palm companies purchased 17% of the municipality area from cattle ranchers and smallholders. Two companies alone own more than 25 thousand hectares of land where large portions of old-growth forests were replaced by oil palm plantations. In the Peruvian Amazon, the state granted large tracts of forested land to large corporate groups (Grupo Palmas and Melka), which have established five large-scale plantations amounting to more than 40 thousand hectares. Approximately half of this area was forested and converted to oil palm (EIA, 2015, 5–17; Finer et al., 2018).

Oil palm companies in these regions not only cleared large tracts of biodiverse-rich forests but also displaced smallholders. In Petén, smallholders had few options but to sell their land to companies because of its low productivity or to pay their debts (Alonso-Fradejas, 2012b). In the Peruvian Amazon, a number of smallholders sold their land to oil palm companies, or lost it, along with forest access, as the state granted land to large-scale oil palm growers. When compared with industrial plantations, smallholders played a lesser role in deforestation rates related to oil palm production (Lee et al., 2014), as capital constraints and differentiated smallholder populations resulted in multiple land use trajectories. In Ucayali (in the Peruvian Amazon), for instance, smallholders converted old-growth forests into oil palm at lower rates than industrial plantations (26% vs. 70% of the oil palm area) (Glinskis and Gutiérrez-Vélez, 2019).4

Industrial plantations have also expanded over forested regions in Esmeraldas in northern Ecuador, in parts of the Pacific coast of Colombia, as well as in the eastern Amazon in Brazil. In the first two regions, collective land titling seems to have limited oil palm expansion over forested landscapes, particularly in well-organized communities (Ortega-Pacheco et al., 2019; Vélez et al., 2020). In the eastern Amazon in Brazil, where oil palm expansion has been dominated by large-scale producers, deforestation rate remained low (~2%) until recently (Benami et al., 2018; de Almeida et al., 2020). Unlike Petén or the Peruvian Amazon, where legislation for forest protection is poorly designed and weakly enforced, the Brazilian government set up several environmental safeguards for forest conservation in the oil palm expansion program. These included land use zoning for oil palm production, support

[4] Smallholders, however, cleared large tracts of secondary forests, key to landscape connectivity and biodiversity conservation.

restrictions for incompliant oil palm producers, and protection for both primary and secondary forests in late successional stages. This case highlights the importance of strengthened forest governance mechanisms to prevent deforestation in regions of oil palm expansion. It is, however, important to note how the focus on oil palm governance has been more on forests and less on other landscapes, such as the floodplain savannas at the Llanos in Colombia (Vargas et al., 2015), where oil palm production might be leading to significant biodiversity losses.

This special issue

Based on rich empirical data, this issue provides a nuanced analysis of oil palm expansion dynamics across Latin America. The studies include countries where this crop covers large national areas (Brazil, Colombia, Ecuador, and Honduras) and countries where it has rapidly expanded over the last decade (Guatemala, Mexico, and Peru). It also includes Nicaragua, where a socialist government first promoted this crop. Half the studies focus on those engaged in oil palm production, including different types of oil palm smallholders and rural workers. The rest analyze the implications this crop has for communities surrounding expanding areas of oil palm plantations (i.e., q'echi indigenous communities in Guatemala and Afro-descendant communities in Ecuador), as well as the linkage between oil palm expansion and the violent dispossession of rural inhabitants in Colombia. Next, we provide an overview of the articles included in this Special Issue.

León Araya (2019) and Muzo and Pacheco (2020) analyze the case of frontier settlers turned oil palm producers through state and donor support in the Bajo Aguán region (northern Honduras), and in San Martín and Ucayali (Peruvian Amazon), respectively. They describe how smallholders became organized oil palm producers with their own mills, although the authors' focus differs. Araya's concern lies with the politics of oil palm expansion in the Bajo Aguán. His study shows how state and donor agencies first pushed smallholders to produce oil palm as cooperatives to pay for the land granted, and then, following neoliberal policies, left them to market forces while still indebted, leading several cooperatives to sell their land. He considers debt as the catalyst for land ownership change in the region and advances the suggestive hypothesis that debt should be understood not merely as an economic matter, but also as a political tool by which creditors lead the conduct of the indebted.

Following a value chain approach, Muzo and Pacheco (2020) assess how organized smallholders perform vis-à-vis independent producers and identify which bottlenecks and opportunities exist for sustainable smallholder inclusion in palm oil value chains. Their study finds that organized smallholders tend to obtain greater profits than independent producers, and that smallholder mills benefit independent producers through low-interest credit and other services. In their article, they also refer to a state owned plantation established in 1973, to be later privatized in the wake of structural adjustment policies (see, also, Borasino, 2016, 37–39). Unlike in Southeast Asia, and despite isolated attempts in Brazil, Ecuador, and Peru, the state-run plantation model never took hold on the continent.

Brandão et al. (2019) and Watkins (2018) analyze landscape transformations brought by oil palm in Brazil, but offer a contrasting take on oil palm expansion

dynamics given the differences between study regions. The first study offers us a rich diachronic analysis of how policies promoting oil palm inclusion as biofuel feedstock in Brazil unfolded in the Eastern Amazon. It describes the rise and fall of the Sustainable Palm Oil Production Program in the Tomé-Açu microregion (where most oil palm is found) in Pará from an environmental governance perspective, including the consequences such policies had for contract smallholders and migrant workers. The second study offers an original analysis of oil palm production as a traditional Afro-Brazilian crop in southern Bahia. It studies oil palm as part of a complex assemblage in which shifting cultivators, mangrove forests, vultures, and Afro-descendant spirituality have all contributed to the making of a resilient oil palm landscape. While oil palm is a relatively new crop in the Eastern Amazon, first pioneered by Japanese migrants, in Bahia it is at least three centuries old.

Both studies refer to resistance by rural inhabitants to development plans based on oil palm production. But given the very distinct historical trajectories between the Amazon and coastal Brazil, the resistance deployed by local communities to oil palm have very little in common. In the Amazon, indigenous and maroon (quilombola) riverine communities concerned about land encroachment by companies and rainforest settlers opposed oil palm cultivation. These communities sought to have their land legally recognized as traditional lands under collective management, posing in this way obstacles to land purchases. In Bahia, Watkins (2018) argues, resistance had to do with recurrent modernization efforts pushed by international development organizations and the Brazilian state, who ultimately failed to convert such traditional complex oil palm landscape into simplified high-input monocultures. This latter study complicates development narratives that conceive oil palm as synonymous with rural modernization.

Only one article in this Special Issue focuses on rural workers. This reflects a wider gap in the literature, in which few studies have analyzed livelihood dynamics for oil palm laborers in Latin America (but see, for instance, Mingorría et al., 2014). Castellanos-Navarrete et al. (2019) analyze labor dynamics in two regions of Mexico and one in Guatemala. In line with Brandão et al. (2019), these authors find that oil palm provides less labor than often claimed (one job, or less, for every 10 ha of oil palm), but constitutes an important income source in cattle-dominated frontier regions. This article does, however, question optimistic narratives, often voiced by government officials and agribusinesses, which portray labor in oil palm as "permanent employment." It shows how labor in oil palm is often paid on a per-piece rate, with some considerable bodily risks given herbicide usage, and in which mid- and long-term contracts are rare. Findings also indicate smallholders provide less labor than plantations but tend to pay better wages, driven by a sense of class solidarity. Companies offer more jobs than smallholders but advance a neoliberal moral economy (based on individuality and self-discipline), which rewards laborers who work longer and harder with few health and employment guarantees.

Both Johnson (2019) and Mingorría et al. (2020) offer fresh perspectives on the intersection between oil palm expansion and forest-dependent communities. The first study presents the process by which the global RSPO standards for sustainable palm oil production are translated to the Ecuadorian context. Johnson's work provides a detailed study on the national interpretation procedures investigated from an ethnographic perspective and approached through Foucault's concept of

governmentality. This study reveals how the process of fitting global standards to the case of Ecuador reinforces existing patterns of exclusion by failing to take into account indigenous and Afro-Ecuadorian communities negatively affected by oil palm production. Her study contributes to a larger stream of literature focused on how global standards become legitimate and for whom in particular geographies.

Sara Mingorría and colleagues study how q'eqchi' indigenous communities react to the expansion of oil palm plantations in eastern Guatemala. They focus on two different types of indigenous communities: communities that accessed land through a form of peonage (known in Guatemala as "colonato") in the Polochic Valley and lost it as hacienda owners sold their land to oil palm outgrowers; and communities located along the Sierra de las Minas that had their land titled collectively. This study delves into how these communities govern their resource commons in the context of oil palm expansion, and how they succeed or fail to adapt to such circumstances. The authors go beyond the analysis of institutional management of common-pool resources and offer a broader perspective on collective action, addressing how governing the commons can also be understood as a form of everyday resistance in a context of expanding industrial plantations.

The last two articles in this collection offer wider analyses of the politics of oil palm production. Tittor (2020) shows how oil palm was promoted as a vehicle for rural development despite major political changes in Nicaragua (from socialist to liberal governments, to socialist again), and how such political shifts modified the narratives supporting this crop as well as the expansion trajectories set in place. She particularly focuses on how the Sandinista government, back in power in 2007, promoted oil palm as a biodiesel feedstock in alliance with international donors. She shows how, as in Mexico or Brazil, such attempts to convert palm oil into a biodiesel source ultimately failed but nevertheless served the oil palm expansion. She adds to the body of literature addressing how this crop's expansion has been pushed in Latin America by both left- and right-wing governments, as well as by all major international organizations and national cooperation agencies.

Finally, Potter (2020) advances a bold argument regarding the case of Colombia. She argues oil palm has become a vehicle for land control by elites, which in some regions are related to violent grabbing of land by paramilitary forces. To prove her point, she provides us with a detailed review of cases where oil palm is associated with dispossession of local people and human right abuses. Along with several Colombian scholars (Marin-Burgos, 2014; Ojeda et al., 2015), she is highly critical of arguments that conceive oil palm as leading to rural modernization and poverty alleviation, and contributes to an on-going debate on the complex relations between oil palm, development, and violent dispossession in contexts of armed conflict (Ballvé, 2012; Gómez et al., 2015; Rey Sabogal, 2013).

Conclusions

In Latin America, oil palm expansion is the result of a range of development policies implemented by state agencies and international donors. This crop has been promoted in forest frontiers as way to modernize rural producers and provide national markets with vegetable oil, to provide smallholders with lucrative alternatives to coca cultivation, or, more recently, to supply feedstock to biodiesel

value chains. These policies have been coupled with particular institutional arrangements driving rural inclusion in oil palm production, which range from fostering the inclusion of organized smallholders in palm oil value chains to inclusive business approaches based on private-public partnerships pushing for contract farming. The intersection of such policies and institutional arrangements with contextual factors (i.e., market structures and agrarian dynamics) have led to diverse oil palm expansion trajectories with differentiated outcomes.

Smallholders play a significant role in palm oil value chains in countries such as Costa Rica, Honduras, Mexico, and Peru, where development policies have provided them with significant support (in the form of seedlings, low-interest credit, and even mills), fostered their organization and ensured their access to land. Smallholder integration was particularly advantageous where there were few or no competitors, and in regions where agrarian reform or land resettlement programs led to more equitable agrarian structures. Smallholder-based oil palm expansion trajectories shifted, however, as market-based development policies took hold, reducing public investment for rural development, transforming land tenure regimes, and favoring the entry of capital across several regions. Large-scale production became dominant in this way in northern Ecuador and parts of the Peruvian Amazon, resulting in mixed oil palm expansion trajectories for these countries.

In some countries (Guatemala, Colombia) and regions (the eastern Amazon in Brazil), smallholder opportunities for inclusion have been reduced from the start. Early policies favoring industrial plantations combined with unequal agrarian structures led to markets dominated by large-scale producers, sometimes tightly controlled by very few companies. In such cases, rural inclusion has been mostly limited to wage labor, as in, for instance, the Llanos Orientales in Colombia. Support for smallholders arrived late and, in some cases, in a period of limited public spending on rural development. These smallholders have had few opportunities for inclusion and, unlike organized smallholders, have become highly dependent on a single company through individual contract farming arrangements. In this case, livelihood improvement through oil palm depends to a high degree on becoming technically proficient and achieving high yields.

Across Latin America, state and corporate institutional arrangements driving rural inclusion in oil palm have required land to be titled, often individually. This has limited the opportunity for inclusion in regions with high levels of tenure insecurity, for forest-dependent communities under customary land arrangements, and for rural women, as land distribution in the region has been strongly biased in favor of men (Bennett et al., 2018a, b; Cárdenas, 2012; Deere and León, 2003). For such people, oil palm inclusion has been limited to offers for land purchases and/or wage labor, and has often meant the loss of access to forest re- sources, leading to conflicts, particularly with companies setting up industrial plantations within or surrounding rural communities (Antón Sánchez and García Serrano, 2015; Mingorría, 2017).

Contextual factors have, in some regions, contributed to oil palm expansion's negative social and environmental outcomes. Rural violence in Colombia has, for instance, fostered land concentration and unequal agrarian structures, limiting the opportunities for smallholder inclusion in oil palm production and even leading to very serious negative impacts on rural livelihoods. Weak governance across particular forest frontiers (i.e., Petén in Guatemala and parts of the Peruvian Amazon) led not

only to the displacement of rural families by industrial plantations but also to significant deforestation. Public and private standards have emerged as key governance mechanisms in palm oil value chains. Their implementation is in its early stages in Latin America and their role in counteracting negative and livelihood and landscape outcomes still uncertain. In sum, this brief review and Special Issue shed some light on the configuration of oil palm expansion in Latin America. We argue that such analysis must go beyond a polarized, normative perspective, and move towards a more nuanced understanding of this multi-faceted process based on refined information on contextual factors, the multiple actors involved, and cross-scale dynamics.

References

Abram, N.K., Meijaard, E., Wilson, K.A., Davis, J.T., Wells, J.A., Ancrenaz, M., Budiharta, S., Durrant, A., Fakhruzzi, A., Runting, R.K., 2017. Oil palm–community conflict mapping in Indonesia: A case for better community liaison in planning for development initiatives. *Applied Geography* 78, 33–44.

Abrams, J., Pischke, E.C., Mesa-Jurado, M.A., Eastmond, A., Silva, A.C., Moseley, C., 2019. Between environmental change and neoliberalism: The effects of oil palm production on livelihood resilience. *Society & Natural Resources* 32 (5), 548–565.

Alonso-Fradejas, A., 2012a. Anything but a story foretold: Multiple politics of resistance to the agrarian extractivist project in Guatemala. *The Journal of Peasant Studies* 43 (3–4), 489–515.

Alonso-Fradejas, A., 2012b. Land control-grabbing in Guatemala: The political economy of contemporary agrarian change. *Canadian Journal of Development Studies/Revue canadienne d'études du dévelopemment* 33 (4), 509–528.

ANCUPA, APROGRACEC, FEDEPAL, MAG, 2017. Censo Palmero 2017. Quito: Asociación Nacional de Cultivadores de Palma Aceitera (ANCUPA), Asociación de Productores de Grasas y Aceites del Ecuador (APROGRACEC), Fundación de Exportaciones de Aceite de Palma y sus Derivados de Origen Nacional (FEDEPALM) y Ministerio de Agricultura y Ganadería (MAG).

Antón Sánchez, J.H., García Serrano, F., 2015. La presión sobre el derecho al territorio ancestral del pueblo afroecuatoriano. El caso de la Federación de Comunidades Negras del Alto San Lorenzo. *Revista Colombiana de Sociología* 31 (1), 107–144.

Balde, B.S., Diawara, M., Rossignoli, C.M., Gasparatos, A., 2019. Smallholder-based oil palm and rubber production in the forest region of Guinea: An exploratory analysis of household food security outcomes. *Agriculture* 9 (2), 41.

Ballvé, T., 2012. Everyday state formation: Territory, decentralization and narco landgrab in Colombia. *Environment and Planning D: Society and Space* 30, 603–622.

Beggs, E., Moore, E., 2013. The Social Landscape of African Oil Palm Production in the Osa and Golfito Region. The Osa and Golfito Initiative (INOGO). San José, Stanford University.

Benami, E., Curran, L.M., Venturieri, A., Franco, R., Kneipp, J., Swartos, A., 2018. Oil palm land conversion in Pará, Brazil, from 2006–2014: Evaluating the 2010 Brazilian sustainable palm oil production program. *Environmental Research Letters* 13:034037.

Bennett, A., Ravikumar, A., Cronkleton, P., 2018a. The effects of rural development policy on land rights distribution and land use scenarios: The case of oil palm in the Peruvian Amazon. *Land Use Policy* 70, 84–93.

Bennett, A., Ravikumar, A., McDermott, C.L., Malhi, Y., 2019. Smallholder oil palm production in the Peruvian Amazon: Rethinking the promise of associations and partnerships for economically sustainable livelihoods. *Frontiers in Forests and Global Change* 2, 14.

Bennett, A., Ravikumar, A., Palta´n, H., 2018b. The political ecology of oil palm company-community partnerships in the Peruvian Amazon: Deforestation consequences of the privatization of rural development. *World Development* 109, 29–41.

Borasino, E., 2016. La cadena de la palma aceitera en contexto. In: Fort, R., Borasino, E. (Eds.), *¿Agroindustria en la Amazonía? Posibilidades para el desarrollo inclusivo y sostenible de la palma aceitera en el Perú*. Grupo de Análisis para el Desarollo (GRADE) y Fundación Ford, Lima, pp. 23–67.

Brandão, F., de Castro, F., Futemma, C., 2019. Between structural change and local agency in the palm oil sector: Interactions, heterogeneities and landscape transformations in the Brazilian Amazon. *Journal of Rural Studies* 71, 156–168.

Brandão, F., Schoneveld, G., 2015. The State of Oil Palm Development in the Brazilian Amazon: Trends, Value Chains, and Business Models. Working Paper 198. Bogor: Center for International Forestry Research (CIFOR).

Brandi, C., Cabani, T., Hosang, C., Schirmbeck, S., Westermann, L., Wiese, H., 2015. Sustainability standards for palm oil: Challenges for smallholder certification under the RSPO. *The Journal of the Environment and Development* 24 (3), 292–314.

Cahyadi, E.R., Waibel, H., 2016. Contract farming and vulnerability to poverty among oil palm smallholders in Indonesia. *The Journal of Development Studies* 52 (5), 681–695.

Cárdenas, R., 2012. Green multiculturalism: articulations of ethnic and environmental politics in a Colombian 'black community'. *The Journal of Peasant Studies* 39 (2), 309–333.

Castellanos-Navarrete, A., Jansen, K., 2015. Oil palm expansion without enclosure: Smallholders and environmental narratives. *The Journal of Peasant Studies* 42 (3–4), 791–816.

Castellanos-Navarrete, A., Tobar Tomás, W.V., López Monzón, C.E., 2019. Development without change: Oil palm labour regimes, development narratives, and disputed moral economies in Mesoamerica. *Journal of Rural Studies* 71, 169–180.

Castellanos-Navarrete, A., Jansen, K., 2018. Is oil palm expansion a challenge to agroecology? Smallholders practising industrial farming in Mexico. *Journal of Agrarian Change* 18 (1), 132–155.

Castiblanco, C., Etter, A., Ramírez, A., 2015. Impacts of oil palm expansion in Colombia: What do socioeconomic indicators show? *Land Use Policy* 44, 31–43.

Clare Rhoades, P., 2011. Los cambios en la cadena de producción de la palma aceitera en el Pacífico costarricense: una historia económica, socioambiental y tecnocientífica, 1950-2007. Sociedad Editora Alquimia 2000, San José.

Córdoba, D., Chiappe, M., Abrams, J., Selfa, T., 2018. Fuelling social inclusion? Neo-extractivism, state–society relations and biofuel policies in Latin America's southern cone. *Development and Change* 49 (1), 63–88.

Corley, R.H.V., Tinker, P.B., 2003. The Oil Palm. Blackwell, Oxford. Cramb, R., Curry, G.N., 2012. Oil palm and rural livelihoods in the Asia-Pacific region: An overview. *Asia Pacific Viewpoint* 53 (3), 223–239.

Cramb, R., Curry, G.N., 2012. Oil palm and rural livelihoods in the Asia-Pacific region: An overview. *Asia Pacific Viewpoint* 53 (3), 223–239.

da Mota, D.M., Schmitz, H., Lima Gomes, D., Oeiras da Silva, G., 2019. Does oil palm contract farming improve the quality of life for family farmers in the Brazilian Amazon? In: Jezeer, R., Pasiecknik, N. (Eds.), *Exploring Inclusive Palm Oil Production*. Tropenbos International, Wageningen, pp. 78–84.

Dammert-Bello, J.L., 2017. Contested Booms: The Politics of oil palm expansion in the Peruvian Amazon. PhD Thesis. Clark University, Worcester.

Dammert-Bello, J.L., 2019. Exploring inclusivity with the United Nations model in the Peruvian Amazon. In: Jezeer, R., Pasiecknik, N. (Eds.), *Exploring Inclusive Palm Oil Production*. Tropenbos International, Wageningen, pp. 47–54.

de Almeida, A.S., Vieira, I.C.G., Ferraz, S.F., 2020. Long-term assessment of oil palm expansion and landscape change in the eastern Brazilian Amazon. *Land Use Policy* 90, 104321.

de Carvalho, C.M., Silveira, S., La Rovere, E.L., Iwama, A.Y., 2015. Deforested and degraded land available for the expansion of palm oil for biodiesel in the state of Pará in the Brazilian Amazon. *Renewable and Sustainable Energy Reviews* 44, 867–876.

de Fontenay, C., 1999. Institutions, Market Power and the Big Push: the Case of Agro-Exports in Northern Honduras. Working Paper 99-11, School of Economics. University of New South Wales, Sidney.

de Vos, R., Delabre, I., 2018. Spaces for participation and resistance: Dendered experiences of oil palm plantation development. *Geoforum* 96, 217–226.

Deere, C.D., León, M., 2003. The gender asset gap: Land in Latin America. *World Development* 31 (6), 925–947.

Dib, J.B., Krishna, V.V., Alamsyah, Z., Qaim, M., 2018. Land-use change and livelihoods of non-farm households: The role of income from employment in oil palm and rubber in rural Indonesia. *Land Use Policy* 76, 828–838.

Edelman, M., León Araya, A., 2015. Cycles of land grabbing in Central America: An argument for history and a case study in the Bajo Aguán, Honduras. *Third World Quarterly* 34 (9), 1697–1722.

EIA, 2015. Deforestation by Definition: the Peruvian Government Fails to Define Forests as Forests, while Palm Oil Expansion and the Malaysian Influence Threaten the Amazon. Environmental Investigation Agency (EIA), London.

FAOSTAT, 2020. Online Database 2018. Food and Agriculture Organization (FAO) of the United Nations, Rome. http://www.fao.org/faostat.

FEDEPALMA, 2011. Censo Nacional de Palma de Aceite. Colombia 2011. Bogotá: Federación Nacional de Cultivadores de Palma de Aceite (FEDEPALMA).

FEDEPALMA, 2019. Statistical yearbook 2019: The oil palm industry in Colombia and the world, 2014-2018. Bogotá: Federación Nacional de Cultivadores de Palma de Aceite (FEDEPALMA).

Feintrenie, L., Chong, W.K., Levang, P., 2010. Why do farmers prefer oil palm? Lessons learnt from Bungo district, Indonesia. *Small-scale Forestry* 9 (3), 379–396.

Finer, M., Olexy, T., 2016. Oil Palm Deforestation in the Central Peruvian Amazon. In Monitoring of the Andean Amazon Project (MAAP) #48 (Washington, D.C.: Amazon Conservation).

Finer, M., Vijay, V., Mamani, N., 2018. Oil Palm Baseline for the Peruvian Amazon. In Monitoring of the Andean Amazon Project (MAAP) #95 (Washington, D.C.: Amazon Conservation).

Furumo, P.R., Aide, T.M., 2017. Characterizing commercial oil palm expansion in Latin America: Land use change and trade. *Environment Research Letters* 12, 1–12.

García Reyes, P., 2014. Tierra, palma africana y conflicto armado en el Bajo Atrato chocoano, Colombia. Una lectura desde el cambio en los órdenes de extracción. *Estudios Socio-Jurídicos* 16 (1), 207–242.

Garcia-Ulloa, J., Sloan, S., Pacheco, P., Ghazoul, J., Koh, L.P., 2012. Lowering environmental costs of oil-palm expansion in Colombia. *Conservation Letters* 5 (5), 366–375.

Gatto, M., Wollni, M., Asnawi, R., Qaim, M., 2017. Oil palm boom, contract farming, and rural economic development: Village-level evidence from Indonesia. *World Development* 95, 127–140.

German, L., Schoneveld, G.C., Pacheco, P., 2011. The social and environmental impacts of biofuel feedstock cultivation: Evidence from multi-site research in the forest frontier. *Ecology and Society* 16 (3).

German, L.A., Bonanno, A.M., Foster, L.C., Cotula, L., 2020. "Inclusive business" in agriculture: Evidence from the evolution of agricultural value chains. *World Development* 134, 105018.

Glinskis, E.A., Gutiérrez-Vélez, V.H., 2019. Quantifying and understanding land cover changes by large and small oil palm expansion regimes in the Peruvian Amazon. *Land Use Policy* 80, 95–106.

Gómez, C.J., Sánchez-Ayala, L., Vargas, G.A., 2015. Armed conflict, land grabs and primitive accumulation in Colombia: Micro processes, macro trends and the puzzles in between. *The Journal of Peasant Studies* 42 (2), 255–274.

GREPALMA, 2018. I Anuario Estadístico 2017-2016. Gremial de Palmicultores de Guatemala (GREPALMA), Ciudad de Guatemala.

GREPALMA, 2019. II Anuario Estadístico 2018-2019. Gremial de Palmicultores de Guatemala (GREPALMA), Ciudad de Guatemala.

Grünberg, J., Grandia, L., Milian, B., Hurtado Paz y Paz, L., Alonso Fradejas, A., Cotom Guzmán, E., Penados Betancourt, J., Pacay, E., 2012. Tierra e igualdad. Desafíos para la administración de tierras en Petén, Guatemala. Ciudad de Guatemala: Fondo Fiduciario para el Desarrollo Ambiental y Socialmente Sostenible (TFESSD) de los Gobiernos de Noruega y Finlandia y Departamento de Agricultura y Desarrollo Rural para America Latina (LSCAR) del Banco Mundial.

Guereña, A., Zepeda, R., 2013. The power of oil palm. Land grabbing and impacts associated with the expansion of oil palm crops in Guatemala: The case of the Palmas del Ixcán company. Oxfam America, Boston.

Hervas, A., 2019. Land, development and contract farming on the Guatemalan oil palm frontier. *The Journal of Peasant Studies* 46 (1), 1–27.

Hurtado Paz, L., Sánchez Monge, G., 2012. Precarización del trabajo agrícola en plantaciones de palma africana en Sayaxché, Petén, Guatemala. In: Celis Ospina, J.C. (Ed.), *La subcontratación laboral en América Latina: miradas multidimensionales*. Medellín: Escuela Nacional Sindical, pp. 169–190.

IDMC, 2019. Global Report on Internal Displacement. Internal Displacement Monitoring Centre (IDMC), Geneva.

INEC, 2014. Censo Agropecuario 2014. San José. Instituto Nacional de Estadísticas y Censos de Costa Rica (INEC).

Jansen, K., 1998. Political Ecology, Mountain Agriculture, and Knowledge in Honduras. Thela Publishers, Amsterdam.

Jelsma, I., Schoneveld, G.C., Zoomers, A., Van Westen, A., 2017. Unpacking Indonesia's independent oil palm smallholders: An actor-disaggregated approach to identifying environmental and social performance challenges. *Land Use Policy* 69, 281–297.

Johnson, A., 2014. Ecuador's national interpretation of the Roundtable on Sustainable Palm Oil (RSPO): Green-grabbing through green certification? *Journal of Latin American Geography* 13 (3), 183–204.

Johnson, A., 2019. The Roundtable on Sustainable Palm Oil's national interpretation process in Ecuador: 'Fitting' global standards into local contexts. *Journal of Rural Studies* 71, 125–133.

JUNPALMA, 2016. Estadística de la palma aceitera al 2014. Junta Nacional de Palma Aceitera del Perú (JUNPALMA), Lima.

Laverde, D.A.U., Guzmán, M.R., 2016. La lucha por la tierra en la hacienda Bellacruz. Semilleros de investigación 2012 27, 17–86 (Bogotá: Universidad Nacional de Colombia).

Lee, J.S.H., Abood, S., Ghazoul, J., Barus, B., Obidzinski, K., Koh, L.P., 2014. Environmental impacts of large-scale oil palm enterprises exceed that of smallholdings in Indonesia. *Conservation Letters* 7 (1), 25–33.

León Araya, A., 2017. Domesticando el despojo: palma africana, acaparamiento de tierras y género en el Bajo Aguán, Honduras. *Revista Colombiana de Antropología* 53 (1), 151–185.

León Araya, A., 2019. The politics of dispossession in the Honduran palm oil industry: A case study of the Bajo Aguán. *Journal of Rural Studies* 71, 134–143.

Li, T.M., 2018. After the land grab: Infrastructural violence and the "Mafia System" in Indonesia's oil palm plantation zones. *Geoforum* 96, 328–337.

Maher, D., 2015. Rooted in violence: Civil war, international trade and the expansion of palm oil in Colombia. *New Political Economy* 20 (2), 299–330.

Manrique, H., 2017. El largo camino hacia la economía lícita: estado y estrategias de desarrollo alternativo en el «milagro de San Martín». *Revista de Ciencia Política y Gobierno* 4 (7), 161–189.

MAPA, 2018. Diagnóstico da produção sustentável de palma da óleo. Brasília: Ministerio da Agricultura, Pecuária e Abastecimento (MAPA).

Marin-Burgos, V., 2014. Access, Power and Justice in Commodity Frontiers. The Political Ecology of Access to Land and Palm Oil Expansion in Colombia. PhD Dissertation. Enschede. University of Twente.

McSweeney, K., Richani, N., Pearson, Z., Devine, J., Wrathall, D.J., 2017. Why do narcos invest in rural land? *Journal of Latin American Geography* 16 (2), 3–29.

Meijaard, E., Sheil, D., 2019. The moral minefield of ethical oil palm and sustainable development. *Frontiers in Forests and Global Change* 2, 22.

Mideros Zamora, M.A., 2010. Las empresas palmicultoras y la generación de desarrollo económico local en el cantón San Lorenzo, Provincia de Esmeraldas (1998-2008). Tesis de maestría. Quito: Facultad Latinoamericana de Ciencias Sociales (FLACSO).

Minda Batallas, P.A., 2002. Identidad y conflicto. La lucha por la tierra en la zona norte de la provincia de Esmeraldas. Ediciones Abya-Yala, Quito.

Mingorría, S., 2017. Violence and visibility in oil palm and sugarcane conflicts: The case of Polochic Valley, Guatemala. *The Journal of Peasant Studies* 45, 1314–1340.

Mingorría, S., Gamboa, G., Martín-Lo´pez, B., Corbera, E., 2014. The oil palm boom: Socio-economic implications for Q'eqchi' households in the Polochic valley, Guatemala. *Environment, Development and Sustainability* 16 (4), 841–871.

Mingorría, S., Iniesta-Arandia, I., Ravera, F., Martín-Lo´pez, B., 2020. The everyday politics of commons: Different reactions of Maya Q'eqchi' communities to flex-crops expansion in Guatemala. *Journal of Rural Studies,* Under Review.

Muzo, A., Pacheco, P., 2020. Oil palm development in the Peruvian Amazon: Cooperatives, and the performance of associated and independent smallholders in San Martin and Ucayali. *Journal of Rural Studies,* Under Review.

Obidzinski, K., Dermawan, A., Hadianto, A., 2014. Oil palm plantation investments in Indonesia's forest frontiers: Limited economic multipliers and uncertain benefits for local communities. *Environment, Development and Sustainability* 16 (6), 1177–1196.

Ojeda, D., Petzl, J., Quiroga, C., Ana Catalina, R., Juan Guillermo, R., 2015. Paisajes del despojo cotidiano: acaparamiento de tierra y agua en Montes de María, Colombia. *Revista de Estudios Sociales* 54, 107–119.

Oosterveer, P., Adjei, B.E., Vellema, S., Slingerland, M., 2014. Global sustainability standards and food security: Exploring unintended effects of voluntary certification in palm oil. *Global Food Security* 3 (3–4), 220–226.

Ortega-Pacheco, D.V., Keeler, A.G., Jiang, S., 2019. Climate change mitigation policy in Ecuador: Effects of land-use competition and transaction costs. *Land Use Policy* 81, 302–310.

Oslender, U., 2007. Violence in development: the logic of forced displacement on Colombia's Pacific coast. *Development in Practice* 17 (6), 752–764.

Osorio Pérez, F.E., 2015. Tramas entre paramilitarismo y palmicultura en Colombia. *Memoria y Sociedad* 19 (39), 11–28.

Oya, C., 2012. Contract farming in sub-Saharan Africa: A survey of approaches, debates and issues. *Journal of Agrarian Change* 12 (1), 1–33.

Pacheco, P., Gnych, S., Dermawan, A., Komarudin, H., Okarda, B., 2017. The Palm Oil Global Value Chain: Implications for Economic Growth and Social and

Environmental Sustainability. CIFOR Working Paper, No. 220. Center for International Forestry Research (CIFOR), Bogor.

Potter, L., 2011. La industria del aceite de palma en Ecuador: ¿un buen negocio para los pequeños agricultores? *Eutopía: Revista de Desarrollo Económico Territorial* 2, 39–54.

Potter, L., 2020. Colombia's oil palm development in times of war and 'peace': Myths, enablers and the disparate realities of land control. *Journal of Rural Studies* 78, 491–502.

Purnomo, H., Okarda, B., Dermawan, A., Ilham, Q.P., Pacheco, P., Nurfatriani, F., Suhendang, E., 2020. Reconciling oil palm economic development and environmental conservation in Indonesia: A value chain dynamic approach. *Forest Policy and Economics* 111, 102089.

Pye, O., Daud, R., Harmono, Y., 2012. Precarious lives: transnational biographies of migrant oil palm workers. *Asia Pacific Viewpoint* 53 (3), 330–342.

Qaim, M., Sibhatu, K.T., Siregar, H., Grass, I., 2020. Environmental, economic, and social consequences of the oil palm boom. *Annual Review of Resource Economics* 12.

Rafflegeau, S., Rioualec, A.-L., Winterhalter, J., Burgos, R., Dubos, B., Noboa, I., Pech, M., 2015. Los desafíos del desarrollo para los palmicultores de la región de Quinindé y La Concordia. *Revista Institucional Palma* 26, 30–34.

Restrepo, E., 2004. Hacia una etnografía del cultivo de la palma africana en Tumaco. *Universitas Humanística* 31 (58), 73–87.

Rey Sabogal, C., 2013. Análisis espacial de la correlación entre cultivo de palma de aceite y desplazamiento forzado en Colombia. *Cuadernos de Economía* 32 (61), 683–718.

Richardson, D., 1995. La historia del mejoramiento genético de la palma aceitera en la compañía United Fruit en América. *ASD Oil Palm Papers* 11, 1–22.

Rodríguez González, I., 2014. Despojo, baldíos y conflicto armado en Puerto Gaitán y Mapiripán (Meta, Colombia) entre 1980 y 2010. *Estudios Socio-Jurídicos* 16 (1), 289–314.

RSPO, 2019. Annual Report Submissions by Oil Palm Growers. Roundtable of Sustainable Palm Oil (RSPO), Kuala Lumpur.

Rueda-Zárate, A., Pacheco, P., 2015. Políticas, mercados y modelos de producción. Un análisis de la situación y desafíos del sector palmero colombiano. Documentos Ocasionales No. 128. Bogor: Centro para la Investigación Forestal Internacional (CIFOR).

Ruysschaert, D., Salles, D., 2014. Towards global voluntary standards: Questioning the effectiveness in attaining conservation goals: the case of the Roundtable on Sustainable Palm Oil (RSPO). *Ecological Economics* 107, 438–446.

Santika, T., Wilson, K.A., Budiharta, S., Law, E.A., Poh, T.M., Ancrenaz, M., Struebig, M. J., Meijaard, E., 2019. Does oil palm agriculture help alleviate poverty? A multidimensional counterfactual assessment of oil palm development in Indonesia. *World Development* 120, 105–117.

Sayer, J., Ghazoul, J., Nelson, P., Boedhihartono, A.K., 2012. Oil palm expansion transforms tropical landscapes and livelihoods. *Global Food Security* 1 (2), 114–119.

Selfa, T., Bain, C., Moreno, R., Eastmond, A., Sweitz, S., Bailey, C., Simas Pereira, G., Souza, T., Medeiros, R., 2015. Interrogating social sustainability in the biofuels sector in Latin America: Tensions between global standards and local experiences in Mexico, Brazil, and Colombia. *Environmental Management* 56 (6), 1315–1329.

SHARP, n.d. Profiles of Company-Smallholder Working Arrangements in the Honduran Palm Oil Sector Smallholder Acceleration and REDD+ Programme (SHARP).

SIAP-SAGARPA, 2020. Superficies sembrada en palma de aceite (2019). Servicio de Información Agroalimentaria y Pesquera (SIAP), Ciudad de México.

SISPA, 2019. Areas de siembra (2018). Sistema de Información Estadística del Sector Palmero (SISPA) de la Federación Nacional de Cultivadores de Palma de Aceite (FEDEPALMA), Bogotá.

Soley Ramos, R.S., 2016. Género y territorio: Anlisis de las desigualdades en los sistemas de g´enero por la produccio´n de Palma Africana en Quinind´e, Esmeraldas, Ecuador. Tesis de Maestría. Facultad Latinoamericana de Ciencias Sociales (FLACSO), sede Ecuador, Quito.

Sunderlin, W.D., Angelsen, A., Belcher, B., Burgers, P., Nasi, R., Santoso, L., Wunder, S., 2005. Livelihoods, forests, and conservation in developing countries: an overview. World Dev. 33 (9), 1383–1402.

Tittor, A., 2020. The changing drivers of oil palm cultivation and the persistent narrative of'already degraded land'. Insights from Nicaragua. J. Rural Stud. 74, 271–279.

Toumbourou, T.D., Dressler, W.H., 2020. Sustaining livelihoods in a palm oil enclave: differentiated gendered responses in East Kalimantan, Indonesia. Asia Pac. Viewp. (in press).

Vargas Bolan˜os, Christian, Miller Granados, Cornelia, Hern´andez Zún˜iga, Katherine, Madrigal Chaves, Gabriela, 2020. Informe: monitoreo del estado de la palma aceitera en las principales regiones productoras de Costa Rica para el an˜o 2018. Laboratorio PRIAS, Centro Nacional de Alta Tecnología (CENAT), San Jos´e.

Vargas, L.E.P., Laurance, W.F., Clements, G.R., Edwards, W., 2015. The impacts of oil palm agriculture on Colombia's biodiversity: what we know and still need to know. Trop. Conserv. Sci. 8 (3), 828–845.

Varkkey, H., 2013. Patronage politics, plantation fires and transboundary haze. Environ. Hazards 12 (3–4), 200–217.

Vélez, M.A., Robalino, J., Cardenas, J.C., Paz, A., Pacay, E., 2020. Is collective titling enough to protect forests? Evidence from Afro-descendant communities in the Colombian Pacific region. World Dev. 128, 104837.

Vicol, M., 2019. Potatoes, petty commodity producers and livelihoods: contract farming and agrarian change in Maharashtra, India. J. Agrar. Change 19 (1), 135–161. Vijay, V., Reid, C.D., Finer, M., Jenkins, C.N., Pimm, S.L., 2018. Deforestation risks posed by oil palm expansion in the Peruvian Amazon. Environ. Res. Lett. 13, 114010.

Watkins, C., 2011. Dendezeiro: african oil palm agroecologies in Bahia, Brazil, and implications for development. *Journal of Latin American Geography* 10 (1), 9–33.

Watkins, C., 2018. Landscapes and resistance in the African diaspora: five centuries of palm oil on Bahia's Dende Coast. *Journal of Rural Studies* 61, 137–154.
Wilcove, D.S., Koh, L.P., 2010. Addressing the threats to biodiversity from oil-palm agriculture. Biodivers. Conserv. 19 (4), 999–1007. Yengoh, G.T., Armah, F.A., 2016. Land access constraints for communities affected by large-scale land acquisition in Southern Sierra Leone. *Geojournal* 81 (1), 103–122.
Zegarra, E., Vargas, R., 2016. Análisis socioeconómico de los arreglos institucionales existentes en la cadena de palma aceitera en el Perú. In: *¿Agroindustria en la Amazonía? Posibilidades para el desarrollo inclusivo y sostenible de la palma aceitera en el Perú*. Grupo de Análisis para el Desarrollo (GRADE), Lima, pp. 105–152.