



Palm oil supply chain complexity impedes implementation of corporate no-deforestation commitments

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ABSTRACT

In recent years, many palm oil companies have committed to eliminating deforestation activities from their operations. NGO reports and companies' self-identified challenges indicate that barriers exist that impede the implementation of these commitments. Here we show that complexity across the extent of the palm oil supply chain poses a major barrier that hinders companies from being able to secure guaranteed no-deforestation commitments. Other barriers include the lack of consensus on definitions of deforestation, inadequate government support and persisting markets for unsustainably-produced palm oil in China and India, which undermine companies' efforts to achieve supplier engagement and compliance. Current certification standards, meanwhile, require amendment to help overcome barriers posed by supply chain complexity. In conclusion, the existing model used to address palm oil-driven deforestation, based on NGO shaming campaigns and unilateral adoption of commitments by individual companies, is unlikely to achieve no deforestation in the current context of palm oil production and trade. Instead, a broader set of complementary mechanisms is required to overcome supply chain complexity and ensure that no-deforestation commitments can be implemented successfully.

1. Introduction

Palm oil is a high-yielding and highly-profitable vegetable oil used in food, soap and oleochemicals manufacturing (Mba et al., 2015). Growing demand has seen a large increase in global production over the past 30 years (UN FAO, 2017). Much of this increase has taken place in Malaysia and Indonesia, which accounted for more than 90% of production in 2014. Palm oil is economically important for producing countries (Koh and Wilcove, 2007) but expansion of cultivation has been associated with deforestation, causing loss of biodiversity (Fitzherbert et al., 2008) and ecosystem services (Koh et al., 2011), and contributing to greenhouse gas emissions (Carlson et al., 2013). The expansion of oil palm plantations replaced over 1.0 million hectares of forest in Malaysia and 1.7–3.0 million hectares of forest in Indonesia between 1990 and 2005 (Fitzherbert et al., 2008). Recent research suggests palm oil-driven deforestation in Indonesia is ongoing, with the rate of deforestation for new oil-palm plantations remaining stable between 2005–2010 and 2010–2015 (Austin et al., 2017).

The rapid expansion of oil palm and its association with deforestation have led to non-government organisation (NGO) campaigns for more sustainable production (Khor, 2011). The Roundtable on

Sustainable Palm Oil (RSPO) was established in 2004 as a non-profit, industry-led trade organisation to “promote the production and use of sustainable palm oil” (RSPO, 2015). The RSPO provides certification for sustainably-produced palm oil (Certified Sustainable Palm Oil; CSPO) based on its Principles and Criteria (P&C), which include conservation of biodiversity and natural resources, and reductions in greenhouse gas emissions (RSPO, 2013). Recent research suggests that RSPO certification reduces the loss of primary forests in certified plantations (Carlson et al., 2018) and as of March 2018, 19% of global palm oil production was RSPO-certified (RSPO, 2018).

Despite its apparent success, however, the RSPO has been criticised for shortcomings including domination by commercial interests, tardiness in promoting bans on destructive activities and non-compliance by members (Laurance et al., 2010). The RSPO standard has also been criticised for being insufficiently strict (Schouten and Glasbergen, 2011). For example, although the RSPO P&C protect primary forests and other areas identified as being of High Conservation Value (HCV; RSPO, 2013), the majority of remaining forest in Indonesia and Malaysia is classed as secondary, selectively-logged or degraded (Padfield et al., 2016). While primary forest is invaluable for sustaining tropical biodiversity, these other forest types may also retain biodiversity value,

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depending on their age and land-use history (Deere et al., 2017; Gibson et al., 2011). This has led some groups to claim that forests which are not identified as HCV still merit protection (Rosoman et al., 2017). Under the RSPO standard, however, non-primary forest types which are not identified as HCV may be cleared to make way for new plantings. The absence of a blanket ‘no-deforestation’ requirement in the existing RSPO standard resulted from the need to find a compromise between corporate and civil-society interests during the 2013 P&C negotiation (Carlson et al., 2018). However, the 2013 P&C are currently under review, with a revised version due to be published in November 2018, and the inclusion of a no-deforestation requirement is under consideration (RSPO, 2017a).

In light of the perceived inadequacy of the RSPO and the pressure exerted by NGOs, many palm oil companies have made independent ‘no-deforestation’ commitments (Khor, 2011). No-deforestation commitments are non-governmental, privately-adopted corporate policies that aim to eliminate deforestation from companies’ operations and supply chains. They may also include other environmental and/or ethical objectives, such as the avoidance of peatland destruction and worker exploitation, as encapsulated by the phrase ‘No Deforestation, no Peat, no Exploitation’ (NDPE). Commitments of this sort provide reassurance for investors, NGOs and other stakeholders concerned about deforestation (Padfield et al., 2016). No-deforestation commitments have been adopted by companies throughout the palm oil supply chain, from growers to retailers (Donoforio et al., 2017). An estimated 96% of global palm oil production is covered by some form of no-deforestation commitment (Hurowitz, 2014).

In the absence of a widely-accepted certification standard for no deforestation (Greenpeace Indonesia, 2016), NGOs have been monitoring companies’ implementation of no-deforestation commitments through initiatives such as the Sustainable Palm Oil Transparency Toolkit (SPOTT; Zoological Society of London [ZSL]; www.spott.org) and Global Forest Watch (GFW; World Resources Institute [WRI]; www.globalforestwatch.org). Both SPOTT and GFW use satellite monitoring to detect tree cover loss and fires (WRI, 2017; ZSL, 2017). Unfortunately, it can be problematic for NGOs to use these tools to track implementation effectively, as deforestation events observed using satellite monitoring are difficult to definitively attribute to corporate concession holders because land occupancy is often disputed between tenants (Gaveau et al., 2016). The lack of standardisation between company commitments also makes cross-company comparisons problematic (Pirard et al., 2015).

The challenge of verifying implementation is further complicated by a historical lack of consensus over definitions of ‘forest’ and ‘deforestation’. Definitions of forest are contentious due to differences in forest types, users, applications and cultural understandings, among other factors (Putz and Redford, 2010). Meanwhile, companies have variously committed to eliminating ‘net deforestation’ or ‘gross deforestation’, each of which has different implications (Brown and Zarin, 2013). In an effort to resolve these differences, two competing methods have been developed for classifying forest: the High Carbon Stock (HCS) Approach and the HCS Study (HCS+) (HCS Approach Steering Group, 2017; HCS Study, 2015). Convergence of the two methods has now been agreed under the HCS Approach (HCS Convergence Working Group, 2016) but the new, unified approach is yet to be universally adopted and does not yet feature in the RSPO standard. Furthermore, questions remain over how it can be applied in highly-forested regions where some degree of deforestation may be unavoidable if socio-economic development is to be improved (Senior et al., 2015).

Although it is difficult to verify implementation by individual companies, some NGOs have claimed that no-deforestation commitments are failing across the industry. For example, Greenpeace cited the high proportion of deforestation alerts originating in oil palm plantations in Indonesia in 2014 and 2015 as an indication that no-deforestation commitments are failing to be implemented (Greenpeace International, 2015). In its palm oil scorecard for 2016, Greenpeace also

claimed that a number of consumer goods manufacturers (CGMs) are failing to implement their commitments (Greenpeace International, 2016). Periodic media reports of commitment breaches support the claim that implementation failures occur at least occasionally (Jacobson, 2015, 2016a).

In light of accusations that companies are failing to deliver on their no-deforestation commitments and considering statements from companies about the challenges of implementation (John, 2016), we investigated the barriers experienced by palm oil companies when implementing no-deforestation commitments. Given the importance of multi supply chain-tier relationships for sustainability (Mena et al., 2013) and the adoption of no-deforestation commitments across the palm oil supply chain, we examined companies and their internal and external relationships across all supply chain tiers. Our aims were to: 1) identify the types and scale of barriers experienced by companies to the effective implementation of no-deforestation commitments; 2) understand how companies perceive their relationships with other stakeholders to influence implementation; and 3) investigate how the structure of supply chains influences the effective implementation of no-deforestation commitments.

2. Methods and materials

2.1. Supply chain structure

This study investigated companies representing the major tiers of ‘the palm oil supply chain’ considered as a generic system covering palm oil trade from production to consumption. The supply chain was understood as flowing from production (upstream) to consumption (downstream). Individual supply chains characterised by explicit customer-supplier relationships could not be identified due to the lack of information in the public domain. In addition, physically-isolated supply chains are only used for low volumes of palm oil due to high costs (van Duijn, 2013).

2.2. Developing the interview guide

A focus group was held to identify key themes to guide subsequent interviews. Five participants were selected from two NGOs and two sustainability consultancies based on their no-deforestation activities. Two participants from a third NGO were unable to join the focus group but participated in follow-up interviews. Both the focus group and follow-up interviews were audio recorded and the recordings transcribed. Key themes were identified from the transcripts and used to develop the interview guide (Brinkmann and Kvale, 2015).

2.3. Participant sampling

Participants were selected using a purposive sampling approach (Russell, 2006) designed to ensure coverage of six tiers of the palm oil supply chains serving European markets. Supply chain tiers were identified from the sustainable palm oil literature as Grower, Large Integrated Supply Chain Company (LISCC), Processor/Refiner (Processor), Manufacturer, CGM and Retailer (van Duijn, 2013; von Geibler, 2013). The distinction between tiers was to some extent subjective, as some palm oil companies – particularly LISCCs – often straddle multiple tiers (Wilmar, 2016). However, allocating tiers ensured inclusion of participants from across the extent of the supply chain. Participants were also selected from NGOs due to the important role of civil society stakeholders in operating beyond, but influencing, sustainable commodity supply chains (Newton et al., 2013). Participants were invited either in person at the RSPO European Roundtable (EURT) in Milan in June 2016, through contacts at two partner NGOs or by personalised emails.

A minimum of two organisations from each supply chain tier were targeted for inclusion to ensure response reliability. The final sample

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