Seeing like a company

Navigating strategies of palm oil companies with zero-deforestation commitment in Indonesia

Ahmad Dermawan

Propositions

1. Palm oil companies in Indonesia that want to achieve zero-deforestation have to break the law
   (*this thesis*).
2. The Indonesian government is keen to protect the interest of palm oil companies but reacts when their action is perceived as threatening government mandates
   (*this thesis*).
3. Blockchain undermines the quest to achieve sustainable and inclusive global value chains.
4. Narrowing the crop yield gap between theoretical and actual levels increases the gap between actual yields of large-scale companies and those of smallholders.
5. Learning to cope with mental health problems should be an integral part of the Training and Supervision Plan (TSP).
6. The sandwich PhD construction is a guarantee for working 20 hours per day.

Propositions belonging to the thesis, entitled

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Ahmad Dermawan
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Seeing like a company

Navigating strategies of palm oil companies with zero-deforestation commitment in Indonesia

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Navigating strategies of palm oil companies with zero-deforestation commitment in Indonesia

Ahmad Dermawan

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Contents

1. Introduction

1.1. Background

1.1.1 Palm oil as a debated crop

Oil palm (Elaeis guineensis) is the most debated crop due to its significant developmental outcomes and associated impacts. The production of palm oil, processed from oil palm, has massively increased from 3.1 million tons in 1975 to 74.6 million tons in 2019, 24 times its previous rate (FAOSTAT 2022). According to Shahbandeh (2022), the global production of vegetable oils in the 2021/2022 crop year is estimated to reach over 200 million tons, of which palm oil had the highest volume at 75.5 million tons. One of the primary reasons for this significant increase is because it requires the lowest production cost per hectare (Corley and Tinker, 2015). Moreover, palm oil usage is versatile, with a spectacular increase in production mainly from the supported expansion of key producing countries (Gaskell 2015, Varkkey et al. 2018).

The palm oil sector contributes to gross domestic products (GDP), exports, and employment for key producer countries such as Indonesia. In addition, it has strong backward and forward linkages, which implies its growth changes those sectors that provide the required inputs and those that utilize this commodity (Rifin 2011, Obidzinksi et al. 2014). Palm oil also has high output, income, labor, and value-added multiplier effects, and contributes more to the increase in the production, revenue, employment, and value-added than the average of the other sectors in Indonesia (PASPI, 2014). This commodity provides adequate economic impacts on smallholders participating in oil palm planting (Feintrenie et al. 2010, Rist et al. 2010). Smallholders under contract improved rural economic development and reduced inequalities across villages (Gatto et al. 2017). Oil palm provides higher land and labor returns than food crops and rubber (Feintrenie et al. 2010, Rist et al. 2010).

The rapidly increasing oil palm development and expansion, however, have brought undesirable ecological footprints. Its contribution to deforestation is highly debated in the global and national policy dialogs (Margono et al. 2014, Vijay et al. 2016, Busch et al. 2019). Between 2001 and 2016, Indonesia lost 2.1 million hectares of forest,

with 23% due to oil palm expansion (Austin et al. 2019). The expansion of this commodity also leads to significant greenhouse gas emissions, mainly due to the clearance of peatlands (Miettinen et al. 2012, Miettinen et al. 2017, Uning et al. 2020), biodiversity loss (Koh and Wilcove 2009, Meijaard et al. 2018) the dispossession of land and poor working conditions for the plantation laborers (Diaulhaq et al. 2015, Berenschot et al. 2022).

The expansion of oil palm, the development of the processing industries, and the globalization of trade and investment have positively and negatively impacted the economy, environment, and society. The significance of these impacts is why this crop has become one of the most debated. These controversies help shape various governance arrangements to minimize negative and positive impacts (Rival and Levang 2014).

1.1.2. Palm oil regulatory frameworks

National governments, private multi-stakeholder processes, and corporate self-regulation develop standards, certification, and commitments to achieve sustainable oil palm development (Pirard et al., 2015, Ivancic and Koh, 2016). The early 2000s marked the implementation of a private regulatory process for this industry to set and enforce rules and standards (Sammeck 2012, Grabs et al. 2021a). The Roundtable on Sustainable Palm Oil (RSPO) and its standard were launched in 2007 through a multi-stakeholder process to set sustainable palm oil production. Since its establishment, RSPO has developed principles and criteria for sustainable palm oil and has gone through several revisions to strengthen the standard. In the early years of its establishment, it faced several critics, with private sector actors from Indonesia disappointed with their inadequate efforts to promote commitment in the international markets. Several years after its establishment, palm oil producers are concerned about the current low premium for this certified product. Observers have warned that the misconduct of corporate members might put significant risks to the credibility of the RSPO (Paoli et al. 2010).

Meanwhile, despite actively participating during the early years of the RSPO, the Government of Indonesia (GoI) launched the Indonesian standard for Sustainable Palm Oil (ISPO) in 2011. Its background was the perception of the GoI that RSPO served the western agenda in

controlling the palm oil sector (Pramudya et al., 2018). Over the years, ISPO has gone through revisions to its standard and legal status (Tropenbos Indonesia, 2020). It is currently the only public mandatory sustainability certification for producers.

Despite the increasing adoption of RSPO and ISPO certification, the amount of certified sustainable palm oil is still less than 20% of the total palm oil production (RSPO 2020). Gaveau et al. (2018) and Austin et al. (2019) stated that irrespective of the increasing adoption, deforestation induced by oil palm expansion remains a major global problem. It is also alleged that companies with RSPO certificates continued their involvement in deforestation (Greenpeace 2015). Additionally, some consumer countries do not require sustainability-certified palm oil, incentivizing producers to shift to these countries (Schleifer 2016). Therefore, NGOs demanded palm oil manufacturers and retailers implement more stringent actions to ensure the production and trade of sustainable palm oil. The pressure led to the pledge of several major consumer goods manufacturers to completely delink their supply chains from deforestation (Pacheco and Komarudin, 2017).

In 2010, the Consumer Goods Forum and its members committed to zero net deforestation by 2020. This led to the self-regulation of several major palm oil companies by late 2013, where each set out rules for itself in the form of individual commitments to become deforestation-free palm oil producers. In 2014, four palm oil companies established a collective responsibility toward zero deforestation. The emergence of various regulatory systems to govern sustainable palm oil in Indonesia has marked the rise of a plural system that regulates its sustainability (Hospes and Kentin 2014, Pacheco et al. 2017).

These regulatory frameworks create opportunities for different actors to conduct better management practices and recognize environmental and social issues in and around the plantations. Simultaneously, various regulatory frameworks create tensions among governments, industry associations and individual companies regarding the acceptance of regulations or standards by different actors (Hospes and Kentin 2014, Efeca 2016, Choiruzzad et al. 2021).

1.1.3. Focus of the study

The central object of this research is the emergence of self-regulation amidst the various other regulatory frameworks by the palm oil

business in Indonesia. Christmann and Taylor (2006) and Giannoumis (2014) defined self-regulation as companies' commitment to voluntarily control their conduct to meet or exceed the law. Four companies have successfully established self-regulation by collectively committing to zero deforestation production of palm oil during the Climate Summit in New York in September 2014. The companies are Golden Agri Resource, Wilmar International, Cargill, and Asian Agri. They are collectively known as the Indonesian Palm Oil Pledge (IPOP), and by early 2016, Musim Mas and Astra Agro Lestari joined them, culminating in six companies with zero deforestation.

In the context of sustainable palm oil, the rise of corporate self-regulation is inseparable from both private and public regulations. Before the announcement of zero-deformation by these companies, they obtained RSPO or ISPO certificates. Corporate self-regulation emerges from the pressures of NGOs, large-scale manufacturers, and buyers. This process enables palm oil producers to align their agenda with the global agenda of the NGOs and buyers to end deforestation. At the same time, the Indonesian Plantation Law requires palm oil companies to clear any plantable areas within six years after receiving the permit (Meyer and Miller 2015). This stipulation indicates that setting aside areas for fulfilling a global agenda of zero-deforestation commitment conflicts with the national law and regulation. Furthermore, zero deforestation is likely to affect the certification status of the companies since the ISPO and RSPO require that palm oil companies comply with the national law.

While the research focuses on the self-regulation of the palm oil business, this study explicitly adopts a contextual and interactive approach in two ways. First, while palm oil companies conduct self-regulation, business actors do not operate in a regulatory vacuum but under several policy and regulatory frameworks that govern their operations. Therefore, they must comply with the home country's public regulations and cope with the policies and rules of palm oil-importing countries. These oil companies also have to deal with global private standards and international guidelines in other domains, such as finance, trade, biofuels, climate, and renewable energy.

Second, while palm oil companies are critical players in global value chains, particularly in the upstream part, they cannot be studied and

understood without addressing the engagement and interactions of the state and civil society actors. For example, states can use their regulatory authority, such as licensing, tax, and anti-monopoly, to control and direct companies. Similarly, civil society actors such as NGOs can influence the business sector in confrontational or collaborative ways to ensure the legitimacy of the business and the global value chains.

1.2. Research questions and objectives

The research aims to address two knowledge gaps in studies of governance in the palm oil sector. First, there is a knowledge gap in analyzing palm oil companies as the central subject in sustainable palm oil. Studies on the palm oil companies cover the involvement of private regulation (RSPO) in the creation of the standards (Schouten and Glasbergen 2011, Hidayat et al. 2018) and impact and effectiveness (Cattau et al. 2016, Larsen et al. 2018, Tey et al. 2020, Ayompe et al. 2021). Studies on the interactions between business and NGOs focused on the contextual factors that determine the outcomes of the interactions (van Huijstee and Glasbergen 2010). Meanwhile, a study by McCarthy et al. (2012) on palm oil companies that use the central government networks to pressure the district government offices to propose conditions that benefit them in exchange for investment in the district focuses on the perceptions of district-level actors on the companies' behavior.

Second, the knowledge gap lies in the strategies these companies use to navigate around different actors and regulatory frameworks. For example, the lack of studies on zero deforestation by corporate self-regulation was because it is relatively new (Pirket et al., 2017, Larsen et al., 2018, Lyons-White and Knight, 2018, Grabs et al., 2021b). Preliminary studies, however, do not focus on the companies navigating the self-regulation but on its rise as an alternative governance arrangement (Schleifer, 2016, Larsen et al., 2018). These include inconsistencies in the palm oil sector's complex supply chain structure (Lyons-White and Knight, 2018).

The dissertation aims to improve the understanding of palm oil companies' strategies for implementing self-regulation of zero-deforestation commitment, given other regulatory frameworks for sustainability. The main research question is: How do the palm oil

companies committed to zero deforestation navigate in the dynamics of the Indonesian palm oil regime? Answers to this question require understanding the institutional environment and sectoral dynamics. Simultaneously, there is also a need to understand interactions among actors between the companies, public authorities, and NGOs. This question will be answered through the following sub-questions.

1. What are the specific dynamics and complexities of the Indonesian palm oil regime?
2. What strategies have palm oil companies developed to respond to governmental regulations and pressures?
3. What strategies have palm oil companies developed to respond to pressures and complaints from NGOs?

This dissertation aims to increase the understanding of how palm oil companies committed to zero deforestation navigate between or across various regulatory frameworks and actors. It presents and analyzes the strategies of palm oil companies to navigate and respond to public regulations, pressures as well as complaints from NGOs.

1.3. Key concepts and theoretical framework

The theoretical multiplicity approach was used to analyze the palm oil companies' strategizing to navigate different regulatory frameworks and actors. Theoretical multiplicity can be defined as "a meta-paradigmatic approach which recognizes the value of exploring areas where theories overlap or can inform each other without undermining the distinctiveness of individual theories" (Karpouzoglou et al. 2016:2). It has proved to help unravel a broader and more nuanced understanding of governance transitioning toward sustainability (Termeer and Dewulf 2012, Karpouzoglou et al. 2016).

The use of theoretical multiplicity rests in the characteristics of the topic of this dissertation. The concept of navigation is helpful to understanding the companies' strategizing, given zero deforestation and regulatory frameworks as the target and surroundings. However, understanding the surroundings requires knowledge of the institutional contexts under which the companies operate. The theoretical frameworks consist of two levels. The first is the concept of regime complex to understand the institutional contexts of the palm oil sector. The second is by understanding the actual corporate navigation using the concept of corporate political activity (CPA) to

capture the strategizing of the companies against the state and the NGOs.

1.3.1. Key concepts

1.3.1.1. Navigation

Understanding the strategies used by several palm oil companies in Indonesia is needed to navigate their zero-deforestation commitment requires understanding on the institutional contexts. The word "navigate" has several meanings, such as "to plan and direct the course of a vessel," "to travel over a planned course or route," or "to make sequential progress through something" (American Heritage Dictionary of the English Language n.d.). Montello (2005:257) provides a more comprehensive definition of navigation by stating that it is a "…coordinated and goal-directed movement through the environment by organisms or intelligent machines. This process involves both planning and execution of movements…." According to Montello and Sas (2006), navigation has two components: first, the planning and decision-making on where to go and how to get there (called the 'wayfinding'), and second, the actual movement coordinated to the near surroundings. Under the context of the study, corporate self-regulation aims to reach a situation where the companies produce palm oil free from deforestation. The companies plan, coordinate, and execute the movements toward achieving a goal. The surroundings include the dynamics of regulatory frameworks and the action of their authorities with the NGOs as watchdogs. The companies take into account the surroundings while they move.

1.3.1.2. Regime complex

The concept of regime complexity, which means partially overlapped regulatory frameworks, was used to properly understand the institutional contexts (Raustiala and Victor 2004, Keohane and Victor 2011). The regime complex has two elements, namely units known as 'elemental regimes', and connections among units that partially overlap (Gomez-Mera et al. 2020:138-9).

Raustiala and Victor (2004) coined the term "regime complex," which refers to "an array of partially overlapping and non-hierarchical institutions governing a particular issue-area." They developed the concept by building on earlier works created by other scholars that introduced the terms 'clusters of regimes,' 'conglomerate regimes,'

'correlated regimes', and 'networks of regimes' (Gomez-Mera et al. 2020:137). These terms imply the embeddedness of an institution within a broader institutional framework.

The regime complex consists of units and connections (Gomez-Mera et al. 2020:138-9). According to Raustiala and Victor (2004), the units, also known as "elemental regimes," are legal agreements. However, other studies defined it as a broader set of elemental regimes, such as private regulation, due to their ability to shape the regime complex (Green and Auld 2016, Gomez-Mera et al. 2020:139). The connections refer to the partial overlaps without hierarchical relationships among the elemental regimes (Raustiala and Victor 2004). Overdevest and Zeitlin (2012) added another characterization to this component by stating that the elemental regimes are competitive and partially overlap. The regime complex's ambiguous and contested characters mean it is dynamic. The architecture of a regime complex may change over time due to the present strategies used to address inconsistencies within the overlaps (Gomez-Mera et al. 2020:140).

The manifestation of regime complex comes in the form of regulatory frameworks developed and implemented by state and non-state actors and a combination of both. Regime complex also comprises various scales, ranging from global to the lowest jurisdictional level (Margulis 2013). A transnational framework often arises when the scope of an issue area goes beyond a state and when the state does not have the capacity or willingness to tackle the issue within its territorial borders. When examining transnational regulatory frameworks, the analysis focuses on the processes coordinated by private authorities (Schmitz-Hoffmann et al. 2014) and some intergovernmental bodies built to handle the issue (Keohane and Victor, 2011). However, such literature did not consider the response made by public authorities (Hospes 2014). It emerged because of perceived little respect for national regulatory sovereignty and weak alignment with national priorities (Schouten and Bitzer 2015, Schouten and Hospes 2018).

Elements of a regime complex can interact in various forms (Overdevest and Zeitlin 2012, Hospes 2014). Scholars have attempted to develop the typology interactions. One typology focuses on exchanges among elemental regimes that complement each another

(complementarity), one undermines the other (antagonism), or one substitutes the other (substitution). These interactions can also disconnect, such as when regulatory frameworks fail to establish complementarity without resulting in antagonism (Lambin et al., 2014).

The interactions among the elements of the regime complex across time can produce both positive and negative effects. The positive impact of the interactions is fostering competition among private and public regulatory authorities, which encourages experimentation, learning, and improved accountability (Alter and Meunier 2009) or complementarity among the elements (Lambin et al. 2014). Additionally, the positive impact of interactions can produce pathways towards better outcomes, such as sustainability. Conversely, some adverse effects create confusion over authority, duplication of efforts, and inefficiencies. It is also possible that regime complexity leads to the congestion of the elemental regimes due to the conflicting objectives, obligations, and procedures. Moreover, since actors have different power, the more powerful ones are likely to benefit from the regime complex at the expense of less powerful ones (Gomez-Mera et al. 2020:144-145).

1.3.1.3. Corporate political activity

Another concept is needed to help understand how palm oil companies navigate their zero-deforestation commitments. I used the Corporate Political Activity (CPA) as a lens to analyze the strategies used by companies to navigate their commitment and interact with the state and NGOs.

A company operates within global value chains under the coordination of the lead firms while adhering to the policies of the host country. The notion that global value chains actors interact with public regulatory authorities brings in the concept of corporate political activity (Hillman and Hitt 1999, Hillman et al. 2004, Lawton and Rajwani 2015). This concept is a valuable lens to understand how the companies navigate against the state while operating within a global value chain.

Corporate political activities mean attempts of the companies to shape favorable government policies (Hillman et al. 2004). Analysis of the corporate political activity focuses on the structure, values, and choices of the firm-level political action (John et al., 2015). Structural analysis of the corporate political activity depicts a decision tree that connects the antecedents comprising opportunities, threats, and capabilities of the firm. This is in addition to the approach to the political activity (relational vs. transactional), level of participation (individual vs. collective), and political strategies, such as political, financial, and constituency-building strategies. Value analysis discusses the firm's motivations to engage in political activity. Meanwhile, choices refer to how the firm generates value from the corporate political activity, such as how it organizes the political efforts to respond to the opportunities and threats by adopting different approaches and political strategies.

The analysis of the corporate political activity suffers from three issues. First, the policy process is not only the domain of the public authority. Other actors, such as civil society and think tanks, involve in the policy process through three activities. These include participation in the policy formulation, the critical evaluation of its implementation, and a proposal of alternative policies (Rajwani 2015). Therefore, the corporate political activity analysis cannot neglect the role of other actors, particularly civil society.

Second, several studies have presented corporate political activity often as a one-off process focusing on the companies' political strategies. In these cases, the endpoint of the analyses lies in the policy or firm outcomes, such as whether a policy desired by the companies is achieved through CPA or the desired policies lead to the achievements of the corporate financial or nonfinancial targets. However, companies may not achieve policy outcomes, irrespective of their ability to conduct CPA because the state blocks their political activities, or an opposing agenda is conducted. Therefore, corporate political activity is inherently interactive and dynamic (Lawton et al. 2013). Companies may navigate corporate political activity by leveraging their political capabilities. Oliver and Holzinger (2008:497) stated that "…dynamic processes by which a firm influence or

complies with its political environment to generate future value or protect the firm's current value from future loss or erosion…" Therefore, by using their political resources, the companies strategically take opportunities to change their level of participation and the type of political strategies to achieve the associated firm outcomes.

Finally, corporate political activity studies focus on the intended policy outcomes as the sole factor in achieving firm results. Therefore, the endpoint of the analysis lies in whether these outcomes are achievable. It has been well known that policy outcomes may not be achieved due to political competition where other firms are likely to advocate the opposite agenda (Rajwani 2015). Since corporate political activity is a dynamic process, policy outcomes are not necessarily the end of the story. This implies that failure to achieve policy outcomes is not necessarily bad for the companies.

1.3.2. Theoretical framework

Figure 1 conceptualizes the palm oil companies that navigate in a regime complex. It consists of partially overlapped regimes involving regulatory frameworks, their authorities, and connections. Several regulatory frameworks and associated actors are in place within each domain and are partially overlapped. The study focuses on different public and private authorities and their regulations on land use and production. These include the Indonesian government and the ISPO, the RSPO as a regulatory body and private standard, as well as the palm oil companies and their self-regulation aimed at zero-deforestation.

The regime complex by Raustiala and Victor (2004) was applied to understand the institutional settings of the palm oil sector. In land use and production, palm oil companies establish self-regulation to move towards deforestation-free palm oil production. Public and private authorities exist in the same domain with their regulations. The regulatory frameworks overlap in a non-hierarchical manner. The scope of self-regulation partly overlaps with public and private regulations.

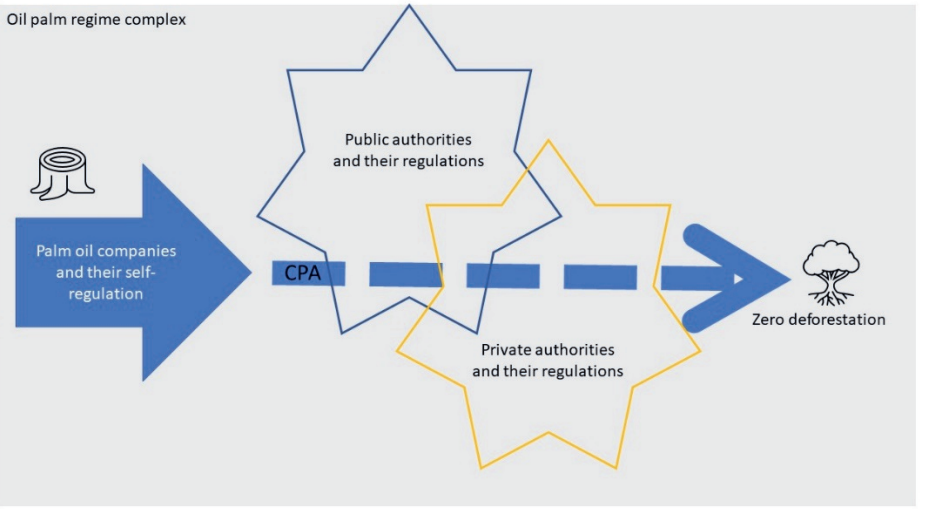

Figure 1. Conceptualizing the navigation of palm oil companies in the palm oil regime complex

The first level of analysis consists of the interactions among different regulatory frameworks. The regime complex is full of dynamics due to the interactions among the associated elements (Gomez-Mera et al. 2020:140). In Figure 1, the interaction is presented as an overlap among public, private, and self-regulation. This process was carried out using the characterization of the interactions by Lambin et al. (2014), who distinguish complementarity, antagonism, and disconnects among public, private, and self-regulation.

The second level of analysis focused on the navigation of the companies with self-regulation at the actor level, where the palm oil companies interact with public and private regulatory authorities. The interactions can also occur with other actors, such as NGOs with similar goals and varying views. A part of the navigation, the companies influence the public authority to facilitate self-regulation.

The connection between the first and second analytical levels lies in the interaction of palm oil companies with other regulatory authorities over some components of public and private frameworks. Once the palm oil companies establish self-regulation, they face opportunities and challenges in its implementation. For example, the state may

respond that self-regulation is unacceptable due to a possible breach of public regulation. At the same time, corporate self-regulation will likely trigger improvements in private regulation. The concept of the CPA is helpful as an analytical lens to describe how palm oil companies navigate their self-regulation.

1.4. Methodological approach

1.4.1. General methodology

The qualitative approach was used to understand the interplay between the various actors and the dynamics of the regulatory frameworks. This study aims to disclose the navigation of the palm oil companies in the context of the regime complex to shape the movement towards no-deforestation.

The empirical analysis used a case study approach at different levels to discover the theoretical construct of this research (Schwandt and Gates 2018). Cases can also constitute a complex system, which can be built by viewing through a critical realist lens.

The empirical units of the cases vary across levels. The first level of analysis focuses on the palm oil regime complex comprising the public and private regulatory frameworks and their interactions in five domains, namely land use, production, trade, finance, and fiscal. The analysis focuses on the extent to which the regulatory frameworks create complementarities, antagonisms, and disconnects. The scope of interactions is within the same domain or between production and finance. The geographical focus of this research is Indonesia, the world's largest palm oil producer.

Meanwhile, for the second level of analysis, the empirical unit is a case study of six major palm oil companies with self-regulation in the form of zero-deforestation commitment. In this case, the interactions of the companies with the state and the NGOs were conducted in three episodes. The first started between 2013 and 2014 when the palm oil companies announced zero deforestation commitment individually. The second was from 2014 to 2016, when these companies created the IPOP as a collective commitment. Finally, the third was from 2016

onwards, when the companies returned to the individual commitment after the IPOP.

1.4.2. Data collection and analysis

Data were collected from primary and secondary sources. The primary was obtained from semi-structured interviews with the representatives of companies, government agencies at the national and sub-national levels, and persons affiliated with civil society organizations. These respondents were selected based on the knowledge of the topic obtained from the literature review. Other sources included participation and interaction in meetings or workshops.

Secondary data sources were collected from company reports, press releases, newspaper articles, journals, and in-house publications of various organizations relevant to the topics. Some of these sources outside journal articles are considered 'grey literature' and require a more critical appraisal of their quality and rigor. Some documents, such as published corporate records and reports, may be biased on a particular issue. As such, other sources are reviewed to evaluate the claims critically. The literature review aims to identify what has been accomplished previously in the various domains of sustainable palm oil. By doing so, I sought to consolidate and build on the previous body of work and summarize to identify gaps (Grant et al. 2009).

I applied thematic text analysis to the data (Mann, 2005, Kuckartz, 2019). It consists of the following steps: 1) initial read of the data, which includes highlighting essential and relevant texts, 2) develop coding frame by generating labels of the main thematic categories, 3) coding the data and compiling them by thematic categories, 4) analyzing the coded data, including the development of sub-codes, and 5) evaluating the categories, sub-categories and presenting the results.

1.5. Structure of the dissertation

The dissertation consists of six chapters, namely the introductory followed by Chapters 2 to 5, addressing the three sub-questions. These chapters elaborate on the understanding of the two analytical levels shown in Figure 1.

Chapter 2 provides an overview of the palm oil regime complex, including various regulatory frameworks and governance arrangements shaping the sector. The chapter categorizes different domains in the palm oil regime complex, such as land use, production, trade, finance, and fiscal. This is in addition to the interactions, namely complementarities, antagonisms, and disconnects (Lambin et al. 2014).

Chapter 3 focuses on the regime complex in the land use production domains. It elaborates on the rise of the private, public, and self-regulatory frameworks on sustainable palm oil in Indonesia while comparing it with Cameroon and Colombia. By focusing on Indonesia, where the companies have the most land banks, different regulatory frameworks and their interactions were analyzed and explored to determine sustainable pathways.

Chapter 4 discusses the Indonesian Palm Oil Pledge (IPOP), a collective commitment toward deforestation-free palm oil production. The chapter elaborates on the rise of the IPOP and the adverse reactions of Indonesia's government until its demise in 2016.

Chapter 5 extends the time horizon of corporate self-regulation into three episodes, namely before, during, and after the IPOP. Using the Corporate Political Activity (CPA) concept, the chapter shows how the palm oil companies respond to the different opportunities and challenges by strategically choosing the level of participation and political strategies capable of providing the policy and firm outcomes beneficial to the companies. The interaction also goes beyond the companies and the state by introducing the role of the NGOs.

Chapter 6 elaborates how the palm oil companies navigate NGOs' pressures and complaints. Therefore, applying the CPA concept to the business-NGO interaction shows how the companies use information strategy to respond to the pressures from the NGOs. Subsequently, the companies use the information from the NGOs' complaints to build a constituency toward their suppliers.

The final chapter summarizes the findings from Chapters 2-6 and answers the sub and main research questions. It also provides some

reflections on the theoretical, methodological approaches and concludes with a suggestion on possible future research agenda.

2. Governing sustainable palm oil supply: Disconnects, complementarities, and antagonisms between state regulations and private standards[1]

Abstract

The global palm oil value chain has grown in complexity; stakeholder relationships and linkages are increasingly shaped by new public and private standards that aim to ameliorate social and environmental costs while harnessing economic gains. Regulatory initiatives in the emerging policy regime complex struggle to resolve sector-wide structural performance issues: pervasive land conflicts, yield differences between companies and smallholders, and carbon emissions arising from deforestation and peatland conversion. Identifying opportunities for more effective governance of the palm oil value chain and supply landscapes, this paper explores disconnects, complementarities, and antagonisms between public regulations and private standards, looking at the global, national, and subnational policy domains shaping chain actors' conduct. Greater complementarities have emerged among transnational instruments, but state regulation disconnects persist and antagonisms prevail between national state regulations and transnational private standards. Emerging experimental approaches, particularly at subnational level, aim to improve coordination to both enhance complementarities and resolve disconnects.

Keywords: palm oil, regime complexity, sustainability, transnational governance, value chain.

[1] Pacheco, P., Schoneveld, G.C., Dermawan, A., Komarudin, H., Djama. M. 2018. Governing sustainable palm oil supply: Disconnects, complementarities, and antagonisms between state regulations and private standards', Regulation & Governance. doi:10.1111/rego.12220.

2.1. Introduction

Effectively regulating oil palm expansion to mitigate negative environmental impacts while reducing the yield and return differences between large-scale plantations and smallholder oil palm growers has become one of the tropics' most pressing sustainability challenges (Sayer et al. 2012, Rival and Levang 2014). This is a particular problem in Malaysia and Indonesia, the global market's primary suppliers of palm oil (Food and Agriculture Organization of the United Nations [FAO] 2016). Improving sector regulation involves overcoming a critical governance dilemma: palm oil development results in contradictory outcomes. The sector contributes fiscal and foreign exchange earnings to producer countries, employs large numbers of rural workers, and supports the livelihoods of a growing number of smallholders, who increasingly embrace this crop as their main income source (Edwards 2015, Pacheco et al. 2017a). In contrast, oil palm expansion generates significant carbon emissions, particularly when planted in peatlands (Miettinen et al. 2013) and contributes to biodiversity loss when production involves the conversion of primary forests (Koh and Wilcove 2008, Savilaakso et al. 2014, Vijay et al. 2016), thereby under mining national commitments to biodiversity protection and climate change mitigation.

There is increasing global demand for palm oil because of its fungibility. It is widely used in the food, chemical, pharmaceutical, and cosmetic industries. Its superior productivity in terms of oil yield per hectare means that it has long been the most cost-competitive oil seed on the global market (Rival and Levang 2014). Because global demand and prominent Northern consumer goods manufacturers have fueled the palm oil sector's expansion, it has become an easy target for consumer and civil society activism. As a result of weak regulatory enforcement capacity in producer countries, such pressures have resulted in international state and non-state regulatory initiatives seeking to address environmental concerns through other avenues, from multistakeholder certification initiatives and private sustainability commitments, to consumer country sustainability incentives (Cramb and McCarthy 2016). As regulatory instruments are rarely developed in unison, the result is regime complexity, characterized by "parallel, overlapping and competing initiatives

[that] are not combined into a single hierarchical system" (Over devest and Zeitlin 2012:2).

In the palm oil sector, the state regulations and private standards that constitute this policy regime complex ultimately aim to address three of the sector's major unresolved performance gaps: (i) conflicts over land and benefit flows, linked to industrial plantation expansion; (ii) the large yield gap between smallholders and company plantations; and (iii) detrimental environmental impacts (Cramb and McCarthy 2016, Pacheco et al. 2017a). Conflicting public and private sector perspectives and approaches to address these gaps – reflecting equally diver- gent development and sustainability priorities – have frustrated efforts to develop a coherent governance system.

Bridging these performance gaps in ways that resonate with all stakeholders and contribute to regulatory cohesion is key. Three interrelated pathways to reversing sector performance issues have been put forward by industry stakeholders and experts: (i) harmonizing public and private standards in a more targeted, regulatory manner (Lambin et al. 2014, Pacheco et al. 2018); (ii) improving business models to enhance social inclusion (Smit 2014, Jelsma et al. 2017); and (iii) orchestrating synergies by undertaking a jurisdictional approach (Paoli et al. 2016, Wolosin 2016). These approaches, which share attributes characteristic of experimentalism as defined by Overdevest and Zeitlin (2012) and Zeitlin (2015), show the potential to foster complementarities and reduce tensions between actors, yet their effectiveness is still to be proven at scale.

This paper is guided by three research questions: (i) What are the elements that characterize the policy regime complex governing the palm oil sector?; (ii) What are the main interactions – in terms of disconnects, complementarities, and antagonisms between public regulations and private standards – that affect the performance of the palm oil sector?; and (iii) What is the potential of the three pathways identified to bridge sector performance gaps and enhance regulatory cohesion and legitimacy? To answer these questions, we critically examine the interactions between global regulatory initiatives and public regulations that shape the global palm oil value chain, while focusing on the specific case of Indonesia, the world's largest oil palm

producer, where a comparatively dynamic context of policy innovation has emerged.

This paper has an exploratory objective and draws on different methods and sources of information. It is embedded in a wider research initiative implemented by the Center for International Forestry Research (CIFOR), which aims to better understand emerging governance arrangements in the palm oil sector and their socio-environmental implications. First, this paper draws on a review of the large body of existing literature analyzing palm oil sector performance and the evolving governance arrangements that aim to regulate that performance. Second, it is informed by a review of the most relevant recent laws and regulations pertinent to the Indonesian palm oil sector (see Annex I), as well as the private standards and initiatives that influence behavior in the sector (see Annex II). Third, our analysis draws on insights from semi-structured interviews carried out with 25 key informants between 2016 and early 2017, which help us to understand politico–institutional dynamics within the Indonesian palm oil sector. These key informants were affiliated to government agencies (such as the Ministry of Agriculture, the coordinating Ministry of Economic Affairs, the National Land Agency, the Ministry of Environment and Forestry, and the Ministry of Finance), oil palm associations (such as GAPKI, the Indonesian Palm Oil Association), individual companies, sustainable standard bodies, and non-governmental organizations (NGOs). The interviews were complemented with findings from a study conducted at subnational level in the provinces of Central Kalimantan, West Kalimantan, and South Sumatra to understand public and private initiatives (and their interactions) to support sustainable palm oil (Luttrell et al. 2018). Finally, this paper draws on the authors' knowledge, based on their participation in sustainable palm oil dialogs at national and international levels over the last four years. It emphasizes the road map process for sustainable palm oil in the context of the Indonesian Palm Oil Platform (InPOP), the strengthening of Indonesian Sustainable Palm Oil (ISPO) standards, and European Union (EU) debates on sustainable palm oil. Guided by our analytical framework, this paper pulls together these different sources of information and perspectives to answer our three overarching research questions.

The paper consists of eight sections, including this introduction. Section 2.2 outlines the conceptual underpinnings that frame the paper's main analysis and arguments. Section 2.3 provides a background to palm oil sector characteristics and performance gaps, with emphasis on Malaysia and Indonesia. Section 2.4 describes the evolving transnational palm oil governance regime. Section 2.5 analyzes disconnects, complementarities, and antagonisms between state policies and regulations and private standards, with emphasis on Indonesia. Section 2.6 introduces actions undertaken to tackle governance disconnects and institutional antagonisms, in order to enhance the sector's sustainability. Section 2.7 discusses these approaches, in the context of a more integrated governance perspective. Finally, Section 2.8 concludes with a reflection on findings.

2.2. Analytical framework

The transnational regime complex concept provides a foundation for our analytical framework, guiding our analysis on public and private policies and regulations, and the interactions among them, from global to subnational level. In this analysis, we emphasize issues pertinent to upstream production processes, where much of the chain's sustainability impacts are concentrated. Likewise, performance issues and vertical interactions among other nodes in the chain are considered where relevant. The transnational regime complex concept is grounded in diverse disciplinary perspectives, including multi-level and transnational governance (Eberlein et al. 2014), interactive governance (Torfing et al. 2012), and ensemble regulation (Perez 2011). Transnational regime complexes are also increasingly viewed in the context of experimentalist governance (Sabel and Zeitlin 2011).

Perspectives on multi-level governance stress how rules and institutions originate at multiple levels and are shaped by complex interactions between state, private, and civil society actors. In the context of globalization and privatization of public regulation this increasingly results in lower tier state actors becoming directly connected to, and embedded in, global networks and processes (Mwangi and Wardell 2012). These perspectives often focus on the legitimacy of multi-level regulatory processes and power dynamics among different tiers of government, with respect to resolving diverse societal and environmental challenges (Adger et al. 2005, Ravikumar

et al. 2015). Interactive governance, in turn, emphasizes the interactions between state and non-state actors in decision-making, and the influence different types of actors wield in shaping regulatory dynamics horizontally, vertically, and diagonally (Torfing et al. 2012).

When examining regulatory processes at a global level, the primacy of transnational processes, especially with respect to the dissemination of rules promulgated by commodity-specific sustainability standards, is typically the focus of analysis (Schmitz-Hoffmann et al. 2014). This has shown the leverage of non-state actors vis-à-vis states, and how they engender innovative solutions around the management of negative social and environmental impacts, in the context of production linked to transboundary trade and global markets (Perez 2013). However, such literature points to weak uptake of multistakeholder regulatory instruments and the comparatively weak legitimacy of international private standards vis-à-vis national standards in producing countries (Hospes 2014, Wijaya and Glasbergen 2016). The latter emerged because of a perceived lack of legitimacy where global standards were concerned; for example, in the context of their limited respect for national regulatory sovereignty and weak alignment with national development priorities (Schouten and Bitzer 2015), or moral arguments linked to the exclusion of smallholder farmers without the capacity to comply (Brandi 2017).

Private sector actors, in their attempts to regulate the sustainability of supply, establish different interactions with state regulations and initiatives, as well as civil society organizations. These interactions can result in competing policy processes between market-oriented transnational standards (which typically reflect Western social and environmental norms) and national mandatory regulations (which respond to territorial realities and interests in specific national or subnational jurisdictions) (Hospes 2014). Conversely, these same interactions can yield productive new partnerships between public, private, and civil society actors to formulate negotiated sustainability targets, and result in upward convergence of diverse public and private regulatory instruments (Lemos and Agrawal 2006). Such interactions and partnerships can take place across multiple levels and are increasingly embedded in complex global networks where stakeholders can exert power in different ways; not only through their

position in the value chain, but also through their embeddedness in horizontal networks that transcend the value chain (Oosterveer 2015).

Lambin et al. (2014) argue that public and private rules and regulations can be complementary to one another but can also result in substitution or antagonism. They are complementary when their operational mechanisms reinforce each other and antagonistic when they undermine each other. Likewise, private regulations can substitute state regulations when similar objectives are pursued through different mechanisms. This can result in disconnects; for example, when regulations pursue common objectives but fail to establish productive interactions.

In short, literature pertinent to international regime complexity highlights how regulatory systems can involve rules and institutions that emerge and play out across different scales, but also across different domains (e.g. between state and non-state actors, such as private sector and civil society organizations). This ensemble of overlapping and non-hierarchical rules and institutions constitutes a regime complex, which is increasingly transnational in its nature, scope, and response to international public good problems (Alter and Meunier 2009, Keohane and Victor 2011, Orsini et al. 2013).

Regime complexity can have both positive and negative effects: it results in strategic inconsistency when the proliferation of rules enables some to be undermined; yet equally, it fosters competition among private and public regulatory actors, which may encourage experimentation, learning, and improved accountability (Alter and Meunier 2009). Productive interactions among regulatory initiatives and institutions in regime complexes are responsive to orchestration (Abbott and Snidal 2009, Overdevest and Zeitlin 2012), but only if negative and positive interactions, and their outcomes, are fully understood. The concept of ensemble regulatory structures, in which legitimacy is intimately linked to effectiveness, as posited by Perez (2011), is especially relevant in this respect. Such structures can emerge in transnational regime complexes when regulatory disconnects are addressed, complementarities are effectively exploited, and antagonisms are resolved.

Yet to be effective, the transnational regime complex requires the capacity to address obstacles to strong sustainability performance in

the palm oil sector. These performance issues, as mentioned in the introduction, include: (i) conflicts over land and benefit flows, linked to industrial plantation expansion; (ii) yield gaps between smallholders and industrial plantations; and (iii) environmental impacts, mainly with respect to Greenhouse Gas (GHG) emissions. Thus, the dynamics within this transnational regime complex mirror the competing interests and divergent perspectives of the different stakeholders in the palm oil sector at different levels. As such, any improvement in the transnational regime complex will likely translate into positive change when dealing with social conflict, closing yields gaps, and reducing negative environmental impacts.

The evolving institutional context and need to overcome performance gaps have created scope for some experimentalist governance approaches to emerge. Experimentalist governance refers to initiatives that embrace more flexible problem-solving arrangements framed in an open-ended way, the outcomes of which often cannot be defined ex ante (Sabel and Zeitlin 2011). The solutions are often as diverse as the situations (Zeitlin 2015) and are subject to periodic revision, in light of the knowledge and learning generated by involved stakeholders (De Búrca et al. 2014). Recently emerging initiatives, involving public and private actors backing sustainable palm oil supply at subnational level, explicitly address negative social and environmental production effects by supporting the uptake and upscaling of more sustainable production standards. We argue that such approaches constitute a form of experimentalist governance.

2.3. Rapid growth in the palm oil sector, but with unresolved performance issues

Oil palm is one of the most profitable tree crops. In recent decades, it has experienced a high rate of expansion in the humid tropics, in terms of both output and area. However, the social and environmental impacts of this expansion make palm oil one of the most controversial commodities traded globally; lands suitable for oil palm development tend to overlap with the worlds' most biodiverse and carbon-rich forests (Pirker and Mosnier 2015). Oil palm plantations cover approximately 20.2 million hectares worldwide, with an estimated total production of 64.5 million tons in 2016 (IndexMundi 2016). Approximately 65 percent of the total planted area is located in Malaysia and Indonesia. This area accounts for 83 percent of total

global palm oil production (FAO 2016). With increasing demand for sustainability (particularly from the European market) and with rapid demand for growth in emerging markets with fewer sustainability requirements (such as India, Pakistan, and China), the sector faces a risk of bifurcating into "green" and "brown" supply chains (Gnych et al. 2015, Nepstad et al. 2017).

A handful of corporate groups control processing and the crude palm oil trade (i.e. Wilmar, Musim Mas, Golden Agri-Resources, Cargill, and Asian Agri in Indonesia; and Sime Darby and Felda in Malaysia). These seven palm oil groups control 60 percent of the two countries' total supply of fresh fruit bunches, but their market share in processing and trade is estimated at almost 90 percent (AgroIndonesia 2015). The groups also own refineries in China, Europe, and India (Wilmar 2016). They supply large consumer goods manufacturers and retailers, producing and marketing food products, chemicals, pharmaceuticals, and cosmetics. Crude palm oil (CPO) is also increasingly sold to biodiesel refineries; much CPO and kernel oil processing takes place in Indonesia, Malaysia, and Singapore. Secondary and tertiary manufacturing occurs in Europe, the United States (US), India, and China, from where consumer goods containing palm oil derivatives are shipped to global consumers. Most palm oil imported by India, China, and other large developing countries is used by the domestic food industry (Fan and Eskin 2012, Arora et al. 2017), while approximately 45 percent of European palm oil imports in 2014 targeted the biodiesel market (Transport and Environment 2016). The government-supported biodiesel market in producer countries is also becoming increasingly important (United States Department of Agriculture [USDA] 2016).

Large oil palm companies rarely rely on their plantations alone, thus also source from external parties. These include contracted outgrowers, who typically have exclusive offtake arrangements with companies in return for input and technical support, and third parties, such as independent farmers not under formal contract (Suharno et al. 2016). Most external parties are smallholders. There are different definitions of smallholders, although the Roundtable for Sustainable Palm Oil (RSPO) definition is commonly accepted and includes those farmers who typically grow oil palm alongside subsistence crops, rely on family labor, and have an area of planted oil palm of less than 50

hectares (see Jelsma et al. 2017). According to official estimates, smallholders account for approximately 41 percent of total production in Indonesia in 2014, and 13 percent in Malaysia in 2015 (Directorate General of Estates 2014, Malaysian Palm Oil Board [MPOB] 2015); these figures have increased steadily since the early 2000 (Pacheco et al. 2017a). Studies have shown that smallholders are a highly heterogeneous population. Their diversity is reflected in differences in landholdings, livelihood strategies, productivity and sustainability, and legality challenges (Jelsma and Schoneveld 2016). In most situations, smallholders develop their plantations in the interstices between larger oil palm concessions, often encroaching onto state forestlands, meaning that they cannot formalize their tenure rights (Schoneveld et al. 2017). While analysis of smallholder attributes is outside the scope of this study and has been addressed elsewhere (see Baudoin et al. 2015, Glenday and Paoli 2015, Jelsma et al. 2017), such attributes demand particular attention in the context of regime complexity. Oil palm smallholders increasingly face different (and sometimes conflicting) regulatory requirements that many are unable to meet, as a result of resource, capacity, and/or legality constraints (Brandi et al. 2015, Schoneveld et al. 2017). Because smallholders experience different barriers to compliance, more actor-disaggregated approaches to smallholder compliance challenges are needed (Jelsma et al. 2017).

As previously mentioned, the sector faces three major performance issues that threaten to undermine long-term sustainability. The first pertains to persistent land conflicts between companies and indigenous, often politically marginalized populations that typically lack secure tenure rights (Colchester and Chao 2013, Abram et al. 2017). As more independent smallholders (who are rarely autochthonous and often rely on informal land transactions and illegal encroachment) enter the sector, land conflicts are increasingly spreading to the informal oil palm sector (Potter 2008, 2012). The second issue relates to the yield difference between smallholders and industrial plantations. Smallholder yields are between 6 and 40 percent lower than best practice reference yields, with commercial operations typically exceeding smallholder yields by 46–116 percent (Molenaar et al. 2013). This can largely be ascribed to smallholders' failure to adopt best management practices and the widespread use of

sub-standard planting material (Molenaar et al. 2013, Jelsma et al. 2017). Increasing smallholder yields will not only contribute to sector competitiveness, it will also reduce land pressure and enhance rural incomes (Jelsma and Schoneveld 2016). The third issue relates to the large carbon debt resulting from oil palm expansion into forestlands and peatlands. Carbon debts are especially high on converted peatlands, because of peat oxidation and land subsidence (Khasanah et al. 2012). Paradoxically, many companies prefer to establish their oil palm plantations in peatlands and forestland because of the reduced likelihood of land conflicts and the potential to cover plantation establishment costs by initial timber extraction (Goldstein 2016). One associated environmental impact of oil palm expansion into peatlands has been that of prolific fires, as a result of the 2015 El Niño effect and accompanying haze, which led to an environmental crisis (World Bank 2015, Tacconi 2016, Purnomo et al. 2018).

Two out of the three main performance issues are domestic in nature (social conflicts around land access and development, and yield differences with effects on benefit sharing), while the third (carbon emissions) is more transnational because of the global impact on climate change. Regardless of whether impacts are domestic or global, these three issues now increasingly feature on the transnational sustainability agenda. International stakeholders are concerned not only by the climate-related environmental impacts of production, but also local tenure rights, smallholder inclusion, and decent labor conditions (Thorlakson et al. 2018). Emerging perspectives suggest that these performance issues should involve global responsibility, as they relate not only to producer countries, but also constitute externalities from consumers and/or investors driving the expansion of commodities in production landscapes (Sachs et al. 2017).

2.4. An evolving transnational governance regime for palm oil supply

Regime complexity is typically manifested by wide-ranging policies and regulations, developed and implemented by state and non-state actors (or a combination of both); differences in scalar focus (from global to the lowest jurisdictional level); and differences in the types of environmental, social, or economic issues prioritized (Gluck 2010, Margulis 2013). Figure 2, building on the different dimensions of our analytical framework, offers a stylized depiction of the transnational

regime complex governing the global palm oil sector. This involves a combination of state regulations, emanating from diverse policy domains (i.e. finance, trade, fiscal, production, and land), and private standards, such as third-party and second-party certification, codes of conduct, and self-regulatory initiatives. Appendix I describes regulations in Indonesia, and Appendix II lists sustainability initiatives driven by the private sector.

This regime complex involves regulations and initiatives at multiple scales, from transnational to subnational. Our analysis on transnational governance does not include value chain governance interventions put in place by companies (e.g. optimization processes, risk management, traceability, and monitoring); thus, when Figure 2 refers to the value chain and chain stakeholders, this is primarily a descriptive device to represent actors, their functions, and the way in which they are affected by state regulations and private standards. The landscape configuration at the bottom of Figure 1 refers to a meso-scale, equivalent to a subnational jurisdictional level.

The left side of Figure 2 depicts the different policies and regulations that shape oil palm development. These range from finance, trade, and fiscal policies, to production and land-related policies, such as peatland restoration, land allocation, tenure, and spatial planning. A detailed assessment of these regulations can be found elsewhere (Caroko et al. 2011, McCarthy et al. 2012, Aurora et al. 2015). The right side of the diagram depicts the different private standards developed to govern the palm oil sector, including certification systems, guidelines and codes of conduct, and self-regulatory initiatives. The latter have grown in importance since the early 2000s to become a prominent constituent of the palm oil regime complex (van Noordwijk et al. 2017, Pacheco et al. 2017a, 2018).

Arguably the most important public regulation governing Indonesian production activities is the mandatory public standard for sustainable oil palm, the ISPO system, which the Government of Indonesia launched in 2011. ISPO essentially bundled the existing public regulations on palm oil production into one instrument (Suharto et al. 2015). Despite enhancing clarity on public regulatory requirements, it has yet to achieve sector-wide compliance because of unresolved issues related to tenure rights and the conservation of high-carbon

forest within concessions (Hidayat et al. 2018). The Malaysian version, the Malaysian Sustainable Palm Oil (MSPO) certification standard, was introduced in 2013. Unlike ISPO, MSPO is voluntary, although a government statement in February 2017 announced a timeline for its mandatory nationwide implementation by 2019 (Malaysian Palm Oil Certification Council [MPOCC] 2017). To harmonize the two standards and stabilize the palm oil market, the Malaysian and Indonesian governments established the intergovernmental Council of Palm Oil Producing Countries (CPOPC) in 2015 (Ministry of Plantation Industries and Commodities [MPIC] 2016). It is currently exploring options to extend membership to include major regional palm oil producers. Other domestic initiatives include the CPO Fund in Indonesia, where CPO export levies are used to subsidize biofuel production and support replanting oil palm on smallholder lands in order to reduce the yield gap (USDA 2015). Different types of taxes are levied in Indonesia, yet 64 percent of oil palm tax revenues originate from CPO export levies, with both income tax (individual and corporate) and land and buildings tax each contributing only 15 percent. Most taxes are collected centrally, with only 11–14 percent flowing back to oil palm producing provinces in 2012/2013 (Falconer et al. 2015).

Such fiscal and production policies are complemented by regulations on land allocation and spatial planning. The latter policies have tended to accommodate rather than obstruct private sector interests by facilitating access to state-held lands classified as conversion forest or those with forest concessions; this neglects customary land rights in both Malaysia and Indonesia, with deleterious effects (Brad et al. 2015). While spatial planning policies offer mechanisms for harmonizing land zoning and allocation at national, provincial, and district levels, these are rarely employed in practice because of competing interests, and bureaucratic and technical complexities. More recently, in Indonesia, concerted efforts have been made to protect forests and peatlands to reduce carbon emissions in the context of national climate change commitments (Brockhaus et al. 2012). While this heralded a moratorium on primary forest and peatland conversion in 2011, as forests within existing concessions were exempt, the effect on curbing deforestation has been limited (Busch et al. 2015, Suwarno et al. 2018). In 2016, peatlands exploring options to extend membership to include

major regional palm oil producers. Other domestic initiatives include the CPO Fund in Indonesia, where CPO export levies are used to subsidize biofuel production and support replanting oil palm on smallholder lands in order to reduce the yield gap (USDA 2015). Different types of taxes are levied in Indonesia, yet 64 percent of oil palm tax revenues originate from CPO export levies, with both income tax (individual and corporate) and land and buildings tax each contributing only 15 percent. Most taxes are collected centrally, with only 11–14 percent flowing back to oil palm producing provinces in 2012/2013 (Falconer et al. 2015).

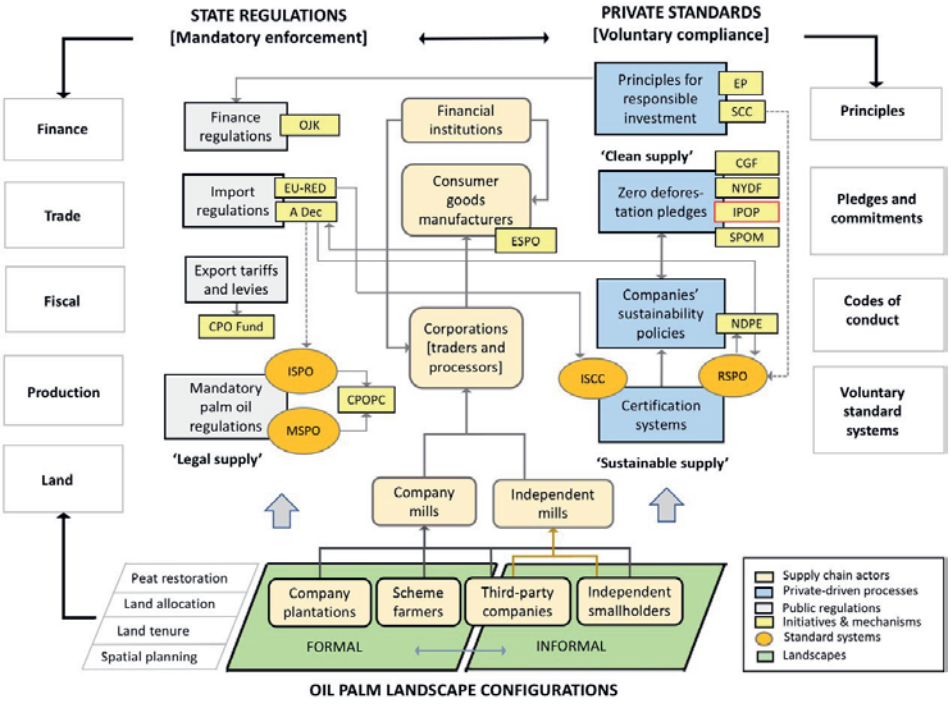

Figure 2 The palm oil sector transnational regime complex.

A Dec, Amsterdam Declaration; CGF, Consumer Goods Forum; CPO, Crude Palm Oil; CPOPC, Council of Palm Oil Producing Countries; EP, Equator Principles; ESPO, European Sustainable Palm Oil; EU-RED, European Union Renewable Energy Directive; IPOP, Indonesian Palm Oil Pledge; ISCC, International Sustainability and Carbon Certification; ISPO, Indonesian Sustainable Palm Oil; MSPO, Malaysian Sustainable Palm Oil; NDPE, No Deforestation, No Peat, No Exploitation policy; NYDF, New York Declaration on Forests; OJK, Indonesian Financial Services Authority;

RSPO, Roundtable on Sustainable Palm Oil; SCC, Soft Commodities Compact; SPOM, Sustainable Palm Oil Manifesto.

Such fiscal and production policies are complemented by regulations on land allocation and spatial planning. The latter policies have tended to accommodate rather than obstruct private sector interests by facilitating access to state-held lands classified as conversion forest or those with forest concessions; this neglects customary land rights in both Malaysia and Indonesia, with deleterious effects (Brad et al. 2015). While spatial planning policies offer mechanisms for harmonizing land zoning and allocation at national, provincial, and district levels, these are rarely employed in practice because of competing interests, and bureaucratic and technical complexities. More recently, in Indonesia, concerted efforts have been made to protect forests and peatlands to reduce carbon emissions in the context of national climate change commitments (Brockhaus et al. 2012). While this heralded a moratorium on primary forest and peatland conversion in 2011, as forests within existing concessions were exempt, the effect on curbing deforestation has been limited (Busch et al. 2015, Suwarno et al. 2018). In 2016, peatlands were explicitly incorporated into policy: new concessions on peatlands were halted and mechanisms were created for restoring peatlands affected by forest fires. This was largely motivated by bad publicity, pursuant diplomatic conflict, and public outcry over the health effects (Tacconi 2016).

Over the past decade, private sector initiated self-regulation and co-regulation have gained prominence, partly in response to the increasingly stringent procurement standards of consumer goods manufacturers. These private regulations, most notably the international voluntary certification systems, are increasingly filling the regulatory vacuum. The RSPO, established in 2004, involves third-party compliance monitoring of adherence to the RSPO standard, which primarily addresses aforementioned land and environment performance issues. Although it is currently the most widely adopted private standard, it is yet to be adopted industry-wide (Morley 2015), with just 21 percent of total global CPO supply RSPO certified in 2015 (Roundtable on Sustainable Palm Oil [RSPO] 2016). Adoption has been most prevalent among large, well-resourced corporate groups, with smaller producers facing financial, technical, and legal barriers to compliance (Brandi et al. 2015). Many corporate groups have also

begun to formulate and adopt their own codes of conduct, to further institutionalize social and environmental performance targets, and lower financial and reputational risk (Gnych et al. 2015). Another certification system increasingly being adopted is the International Sustainability and Carbon Certification (ISCC), established in 2010 to certify CPO sold to the EU biodiesel market. To secure market access, CPO sold to EU biodiesel markets must be certified under a European Commission (EC) accredited certification scheme, to count toward the European Union Renewable Energy Directive (EU-RED) biofuel blending targets (International Sustainability and Carbon Certification [ISCC] 2017).

Since 2013, many large chain actors have made ambitious pledges to fully eliminate deforestation from their supply chains, most by 2020. Although diverse chain actors have made such pledges, the zero deforestation movement is chiefly driven by large consumer goods manufacturers who have pressured their suppliers further upstream to comply with the pledges (Climate and Land Use Alliance 2014, Bregman 2015). Many European governments, through the 2015 Amsterdam Declaration, are also committed to ensuring that all palm oil traded within their markets is certified by 2020, with industry platforms established for that purpose in Belgium, Denmark, France, Germany, Italy, Norway, the Netherlands, Sweden, and the United Kingdom (UK). In 2015, the Dutch Oils and Fats Industry (MVO) along with the Sustainable Trade Initiative (IDH) established the European Sustainable Palm Oil (ESPO) project to support 100 percent sustainable palm oil sourcing (European Sustainable Palm Oil [ESPO] 2017). In 2016, Norway became the first country to apply zero deforestation commitments to all public procurement activities (Gaworecki 2016). Likewise, the European Parliament issued a non-binding resolution in April 2017, attempting to impose more stringent conditions on palm oil imported by European markets, including the phasing out of palm oil as a component of biofuels, preferably by 2020 (European Parliament 2017).

Financial service providers play an important role in financing plantation expansion, processing, and refining capacity. Most major international financial institutions (IFIs) provide financial services to palm oil actors (Chain Reaction Research 2017). Lending to the sector is increasingly subject to adherence to the Equator Principles and, for

certain banks, sector-specific Environment, Social and Governance (ESG) criteria. With IFIs increasingly being held to account for their clients' social and environmental misconduct, risk mitigation strategies strongly underpin the recent momentum behind more explicit ESG integrations (Stampe and McCarron 2015). Common standards are also beginning to emerge, with finance platform the Banking Environment Initiative (BEI) developing the Soft Commodities Compact, whose responsible lending guidelines now incorporate numerous RSPO criteria (University of Cambridge 2018). These changing norms and practices have prompted the Indonesian Financial Service Authority (OJK) to formulate the "Sustainable Financial Roadmap," which establishes a pathway for integrating responsible lending practices into the operations of eight of Indonesia's largest commercial banks (Pramudya et al. 2017) and recently, to issue a regulation that provides the legal basis for requesting sustainability plans from Indonesia's financial services providers.

Private sector initiatives, as well as the European Parliament's resolutions on palm oil, have not been well received by the Indonesian and Malaysian governments, particularly zero deforestation commitments and attempts to ban palm oil imports. The establishment of CPOPC has been regarded as a political strategy to improve the governments' capacity to dictate governance dynamics within the palm oil sector and undermine the ongoing privatization of sector regulation. The Indonesian government's stance on these processes is reflected in their accusation of six corporate groups – attempting to coordinate the operationalization of their zero deforestation commitments through the Indonesian Palm Oil Pledge (IPOP) – of cartel practices. Subsequent threats by the national anti-monopoly agency to subject them to investigation forced IPOP's disbandment in mid-2016 (Vit 2016). This was viewed as a government strategy to undermine the legitimacy of private sector commitments and platforms, and re-establish the primacy of public regulations and state enforcement authority. Subsequently, the corporate groups made explicit that they would continue to pursue their commitments individually (Vit 2016). Despite this, multistakeholder efforts to develop a common set of zero deforestation definitions and principles are ongoing through the High Carbon Stock Approach initiative,

which has successfully harmonized two different approaches. To improve the legitimacy of national standards, the Indonesian government was forced to initiate a process to strengthen ISPO, including a third-party monitoring mechanism. This is an ongoing process, and its legitimacy is still in question (Hidayat et al. 2018).

2.5. Governance challenges: Disconnects, complementarities, and antagonisms

The myriad state regulations and private initiatives constitute a regime complex, characterized by disconnects, complementarities, and antagonisms, related to palm oil sustainability objectives and strategies. By systematically unpacking these interactions, we identify opportunities for enhancing coherence across, and capitalizing on potential synergies between, the different regulatory initiatives. Table 1 provides a synthesis of disconnects, complementarities, and antagonisms across different policy realms. It draws on the information provided in Appendices I and II.

As Table 1 illustrates, the palm oil regime complex suffers from major internal disconnects. In the finance realm, communication is lacking between OJK, international banks, and CPO Fund efforts to support responsible lending and smallholder access to finance. In the trade realm, import policies adopted by consumer countries (EU-RED and ESPO) do not align with producer country developed standards (ISPO and MSPO), but rather with international standards (RSPO and ISCC). The third disconnect relates to fiscal policy. National revenues from palm oil-related land, income taxes, and export levies are not used to support major producing districts to take up more sustainable practices. The fourth disconnect highlights the lack of harmony between procurement requirements under private standards ("sustainable supply" under RSPO and ISCC certification, and "clean supply" under corporate zero deforestation policies) and those under public standards (i.e. "legal supply" under ISPO and MSPO). This creates confusion among chain actors about supply segregation rules, and increases disputes between public and private sector actors around implementation (Pirard et al. 2015). The fifth disconnect manifests itself in a lack of coherence between national and subnational sustainability policies. National government has opposed the use of High Conservation Values (HCV), a method developed under the RSPO to set aside conservation areas, yet subnational

governments still attempt to incorporate it into their provincial regulations.

Despite these disconnects, complementarities between regulations and initiatives are also emerging. The first complementarity relates to finance. Many IFIs are adopting responsible lending policies, which has encouraged a number of major commercial banks in Malaysia and Indonesia to do the same. As part of due diligence requirements, these lending policies demand the adoption of public and private standards by major corporate actors receiving financial services from these banks (Pramudya et al. 2017), encouraging more widespread adoption of such standards. The second complementarity, related to trade, is the increasing use of voluntary standards (i.e. RSPO, ISCC) by consumer countries to verify that their national imports originate from sustainable sources (e.g. national initiatives under ESPO, EU-RED). The third is explicit inclusion in the CPO Fund of targets to support smallholder adoption of improved production practices; this is also discussed under the RSPO and endorsed by major corporations. The fourth is related to private sector efforts to develop and adopt industry-level codes of conduct and sustainability policies to enhance coherence and transparency in corporate policy. These industry initiatives draw heavily on RSPO and evolving zero deforestation norms, which could augment adoption rates. The final complementarity relates to land-use criteria in recent regulations, in which only unproductive lands can be converted into plantations. Government efforts to legalize essential ecosystem areas outside existing conservation and protected areas (which match the internationally recognized HCVs), complement the endeavors of major oil palm companies to set aside conservation areas. The integration of higher standards in the revised ISPO criteria and indicators, along with third-party monitoring, will further improve these standards, increasing their convergence with those of private standard systems.

Table 1. Disconnects, complementarities, and antagonisms in the global palm oil sector

Level	Disconnects	Complementarities	Antagonisms
Finance	Public funds (e.g. the CPO Fund) are not completely aligned with private sector attempts to support responsible lending to stimulate smallholder adoption of ISPO standards	Policies adopted by international financial institutions are being internalized by domestic commercial banks in Malaysia and Indonesia, stimulated by state regulatory bodies	Formal processes to integrate ESG criteria within the banking system conflict with widespread domestic bank and informal local lender practices, which target less sustainable plantations
Trade	Import policies adopted by consumer countries do not rely on state mandatory system standards adopted in producer countries (i.e. ISPO and MSPO)	Consumer countries adopt import policies that rely on voluntary system standards (i.e. ISCC, RSPO) to verify that supply originates from sustainable sources	Transnational consumer goods companies set market constraints (i.e. deforestation-free supply) that conflict with expansion goals of national states and companies
Fiscal	Palm oil taxes collected are only partially channeled to support sustainable supply in the main producing districts	The CPO Fund targets resources to support improvements to smallholder yields under approaches endorsed by companies	Local authorities use informal ways to capture economic rents from plantations, through the granting of permits
Production	Different types of standards and methods linked to "legal" (ISPO), "sustainable" (RSPO, ISCC), and "clean" supply (company pledges) are developing to segregate different types of palm oil supply	The private sector adopts codes of conduct and sustainability policies that rely on RSPO certification, and occasionally, makes more ambitious efforts toward de-linking supply from deforestation	State regulations contradict private sector attempts to comply with zero deforestation pledges, mainly relating to attempts to set aside HCV and HCS areas within concessions granted for oil palm development
Land use	There is a lack of communication between national and provincial levels over methods adopted for setting aside conservation areas	Land-use regulations pay increasing attention to methods and criteria developed by private standards to protect forests and peatlands	Land, finance, and service provision transactions occur formally and informally, which makes state and company actions to regulate illegal supply more difficult

Note: CPO, crude palm oil; ESG, environmental, social and governance; HCS, high carbon stock; HCV, high conservation value; ISCC, International Sustainability and Carbon Certification; ISPO, Indonesian Sustainable Palm Oil; MSPO, Malaysian Sustainable Palm Oil; RSPO, Roundtable on Sustainable Palm Oil.

However, several antagonisms between regulatory initiatives are also apparent. Within finance, the key antagonism relates to the emergence of a formal banking sector process to upscale ESG integration. This conflicts with domestic bank and informal lender strategies that target a less sustainable client base. A disproportionately large amount of CPO funding goes to subsidize biofuels, while only a small proportion has been disbursed to finance smallholders' replanting efforts and promote environmentally friendly practices. This appears to contradict the original idea of the CPO policy. The second antagonism, in the trade realm, relates to transnational consumer goods manufacturers' deforestation-free sourcing policies. Such policies conflict with the sector expansion goals of both governments and companies in producer countries. The third antagonism, in the fiscal realm, relates to the informal capture of economic rents by local governments. Formal taxes collected at national level rarely reach the production zone departments that often bear enforcement responsibilities and are thus best placed to promote upgrading on the ground. The absence of a fiscal mechanism to incentivize those adopting and promoting sustainable practices represents another critical gap. The fourth, in the production realm, is associated with private standard compliance requirements that involve setting aside conservation areas within oil palm concessions, using HCV or High Carbon Stock (HCS) approaches. Because statutory law does not recognize such land-use classifications, privately conserved lands within concession areas risk reversion back to state control and reallocation to producers that lack similar sustainability ambitions (Aurora et al. 2015). Another major source of antagonism emerges from the clash between the oil palm economy's formal and informal segments. Because most transactions involving smallholders are informal and outside the purview of the state, the government is unable to effectively regulate smallholder production practices. This often results in forest land being freely traded to smallholders, production inputs such as planting material and fertilizers being of substandard quality, and fresh fruit bunch trade being highly opaque. For companies wishing to clean their supply chain while remaining inclusive of smallholders, this type of informality raises a number of challenges, mainly how to implement more rigorous traceability systems and enhance productivity. In addition, the vast majority of independent smallholders lack formal claims to land, therefore cannot

access public funding and incentives, and cannot comply with the requirements of sustainability standards (Rietberg and Slingerland 2016). This threatens to further alienate smallholders from the formal (sustainable) economy and undermines the effectiveness of initiatives that aim to pro- mote the upgrading of smallholder production systems.

2.6. Emerging actions to foster transitions to sustainability

Various actors at different levels are beginning to address disconnects and antagonisms, while further exploiting existing complementarities, based on experimentalist approaches. These actions have three broad objectives: (i) to refine and harmonize sustainability regulations, standards, and tools, while learning from applicability across a range of companies; (ii) to implement business models that increase productivity, while overcoming the challenges of involving smallholders (often implemented by development organizations and NGOs); and (iii) to reconcile value chain interventions with landscape-based ones, by adopting jurisdictional approaches. These approaches are increasingly orchestrated by provincial level governors and facilitated by NGOs, which tend to operate as intermediaries.

2.6.1. Refining and harmonizing sustainability regulations and standards

The deforestation-free supply chain commitments of consumer goods manufacturers led to The Forest Trust, Golden Agri-Resources (GAR), and Greenpeace developing the High Carbon Stock Approach (HCSA) to identify restricted areas for plantation development (Greenpeace 2013). This move resulted in a concrete implementation approach for zero deforestation based on objective and verifiable criteria (Greenpeace 2014). In 2014, a separate group of major palm oil producers, known as the Manifesto group, announced a voluntary moratorium on the clearance of HCS areas, based on empirically valid thresholds of carbon stocks under the HCS+ approach, which deviated from the Greenpeace-initiated HCSA. In 2015, a process was created to harmonize HCSA and HCS+, and, in late 2016, the different stakeholders agreed upon a single set of principles (High Carbon Stock Approach [HCSA] 2016). In 2017, a HCSA toolkit that merged the two approaches was finalized; its implementation is now being piloted by all major corporate stakeholders.

Two additional initiatives to augment sustainability standards are in place; one related to the RSPO, and one to ISPO. The RSPO has developed RSPO Next, which includes advanced add-on criteria for palm oil growers seeking to comply with "no deforestation, no fire, no planting on peat, reduction of GHGs, respect for human rights and transparency" (RSPO 2017). This is partly a response to criticism from consumer goods manufacturers that RSPO principles and criteria were not sufficiently comprehensive. In regards to ISPO, the Indonesian government, through the coordinating Ministry of Economic Affairs, initiated "Strengthening ISPO," replicating timber sector experience associated with the EU's initiative on Forest Law Enforcement, Governance and Trade (FLEGT), which engaged Indonesian public and private authorities in a multistakeholder process to develop and implement a jointly agreed timber standard and legality assurance system (Obidzinski et al. 2014). "Strengthening ISPO" is a participatory process involving stakeholder groups, such as state agencies and environmental NGOs, to improve existing Indonesian standards. Issues the group is trying to resolve include the development of criteria to evaluate land availability for plantation development, community consultation mechanisms, and legal conflicts associated with HCV protection. To improve credibility, efforts are being made to establish an accreditation body, a third-party auditing process, and an independent monitoring system through government regulation. The Ministry of Environment and Forestry's efforts to legalize and protect essential ecosystem areas within concessions, like HCVs, will further strengthen the standards. Yet with the development of further oil palm plantations, only low-carbon areas will be converted, ensuring only "unproductive lands for plantation" – as already included in the regulation – are adopted during the land allocation process. The outcomes of these efforts are uncertain because of the vested and conflicting political interests involved in the process. Despite this, the increasing proliferation of sustainability initiatives illustrates that they have potential to stimulate an upward convergence of standards, although not without conflict.

2.6.2. Enhancing business models for enlarging productivity and smallholder inclusion

Major corporate groups are increasing their efforts to link enhanced traceability systems to better monitor and verify performance over

commitments to zero deforestation. They are also linking them to improved business models. Such models provide services to help overcome the resource, capacity, and legality constraints preventing (certain) smallholders from achieving their productivity potential, fully complying with regulatory requirements, and accessing global palm oil markets on equitable terms. Recognizing the need for smallholders' requirements to be more explicitly addressed through actor-disaggregated approaches, companies and NGOs are collaborating on innovative new business models and value chain strategies to prevent smallholder disarticulation from global standards-driven markets. These actors include development organizations, such as IDH and the Dutch Development Organization (SNV), multilateral banks, such as the International Finance Corporation (IFC), and corporate sector-driven initiatives, such as the Partnership for Indonesia Sustainable Agriculture (PIS-Agro) and the PT SMART Working Group. Most initiatives share the common goal of enhancing the transparency and traceability of upstream activities in the value chain, by facilitating smallholder access to finance, typically through aggregation. This is primarily geared toward supporting smallholders to replace substandard oil palm varieties with improved varieties to increase yields and to overcome financial barriers to compliance (Bronkhorst et al. 2017). In addition, the national government is seeking to overcome the legality challenges preventing smallholders from formalizing their operations, through enactments such as Presidential Regulation No. 88/2017. This regulation aims to resolve conflicts over plantations on state forestlands by enabling smallholders to obtain land titles if lands have been occupied for over 20 years. However, few smallholders on state forestlands are likely to be able to benefit from this regulation (Jelsma et al. 2017, Schoneveld et al. 2017).

2.6.3. Reconciling value chain and landscape-based interventions by adopting jurisdictional approaches

The private sector and NGOs increasingly acknowledge that progress will be piecemeal if underlying structural issues affecting the sector are not comprehensively addressed. This necessitates more effective exploitation of the complementarities between public and private sector interventions (Wolosin 2016). Private–public partnerships are widely viewed as critical, especially around issues of sector

competitiveness and formality, and improving the demarcation of production and protection areas. Private sector actors, NGOs, donors, and development organizations are supporting efforts in specific jurisdictions to identify and register smallholder lands and promote district-level monitoring, reporting, and verification of land-use change (Watts and Irawan 2016). This is part of a broader attempt to link deforestation-free supply chain initiatives with jurisdictional approaches to reducing deforestation and forest degradation (REDD) (Meyer and Miller 2015). Provincial regulations are emerging in support of private standards for sustainability: South Sumatra's Governor committed to transforming South Sumatra into a sustainable province; the Governor of Central Kalimantan acknowledged the importance of aligning regulations with HCV principles by allowing palm oil companies to retain and protect areas within their concessions; and, in 2015, Sabah state issued a 10-year plan detailing a process to ensure all CPO produced within its jurisdiction was RSPO certified. Many of these subnational state initiatives seek to attract investors by aligning with private standards (thus reducing company risk and monitoring costs), benefiting from offtake markets that, in turn, become more accessible (Pacheco et al. 2017b). Such approaches were championed by Unilever and Marks and Spencer, who in late 2015 launched the "Produce and Protect" approach, through which they commit to prioritizing commodity procurement from areas implementing jurisdictional forest and climate initiatives (Consumer Goods Forum 2015).

2.7. Discussion

Rapid palm oil sector expansion has contributed to rural economic development and reduced poverty rates in Southeast Asia, notably in Malaysia and Indonesia. However, this comes at the expense of the environment through carbon emissions, deforestation, and biodiversity loss. It has also given rise to new developmental challenges. Smallholders face constraints that prevent improved practices and yields, access to formal oil palm economy benefits, and secure tenure rights. With the value chain's growing complexity, regulations and initiatives governing palm oil have become more complex, producing a transnational regime complex that mixes state

regulations and private standards, such as certification, codes of conduct, and self-regulatory initiatives.

This transnational regime complex is maturing and taking on increasingly challenging issues: improving the terms of smallholder participation; reducing land conflicts; addressing substandard labor conditions; halting crop expansion on biodiverse and high carbon stock forests and peatlands; and reducing fires and haze. As the sector becomes more environmentally conscious, new challenges are emerging. With unabated growth in the global demand for palm oil, issues arising from expansion and increasing pressure on land outside forest and peatlands will need to be addressed (Pirker et al. 2016). This will include the recovery of degraded lands and the integration, rather than displacement, of smallholders occupying low-carbon stock croplands, without undermining food supply and local livelihoods. Ongoing efforts to build more coherent governance architecture should reduce cur- rent performance issues and enhance sector capacity, with reduced social and environmental impacts (Austin et al. 2015).

The unresolved disconnects and antagonisms, particularly between producer country state regulations and international standards, have frustrated efforts to build international synergies among private corporate policies and codes of conduct and transnational initiatives in consumer countries, particularly in the EU. While processes of upward convergence are evident between different private standards, weak alignment of these private standards with producer country state interests has undermined improved governance. This hinders the development of more effective coordination mechanisms and the implementation of incentives to resolve the negative social and environmental tradeoffs arising from market and production conditions beyond the duty and capacity of individual companies. It also challenges governments' enforcement capacity.

We identified several areas where synergies could be established between public and private initiatives. The areas with the greatest potential include: coordination in the supply of responsible finance under agreed criteria, complementarities in the provision of incentives to improve smallholder performance, and rules to set aside high-carbon forest while safeguarding the rights of local populations. These

require improved coordination across different levels of governance, as well as across public and private realms of decision-making.

The three main goals to improve the effectiveness and legitimacy of the transnational palm oil regime com- plex are: (i) to strengthen accountability and transparency in the value chain and political systems; (ii) increase smallholder empowerment, and production and environmental performance; and (iii) introduce new incentives to increase the uptake of sustainability practices, in ways that level the playing field for independent smallholders. These three goals should be pursued simultaneously.

Initiatives are emerging, particularly in Indonesia that have the potential to improve complementarities between state regulations and private standards, suggesting that greater harmonization of policies and regulatory frameworks across public and private sectors and between different levels of government is possible. Yet antagonisms persist as a result of strong vested interests and patronage systems reinforcing private actors' privileges, while protecting the power position of key state actors benefiting from business-as-usual situations. Emerging initiatives are largely adopting experimentalist approaches. These may be more effective in mobilizing public and private action related to regulatory harmonization, business models, and jurisdictional approaches, in which government actors, corporate players, and NGOs attempt to establish different institutional arrangements.

Regarding accountability and transparency, important steps have been taken, with major corporate groups establishing and taking up third-party certification, notably the RSPO. This has become an accepted mechanism for compliance with the import regulations of major consumer countries, as well as with the procurement policies of major consumer goods manufacturers; however, it will take time before they are accepted by other major consumer countries (e.g. China and India). While demand-side compliance pressures have, despite limitations, con- tributed to increasing private standard adoption rates, supply-side pressures remain comparatively weak.

Although the CPOPC and a strengthened ISPO have the potential to develop a system built on principles and criteria similar to those adopted by the RSPO, a more transparent monitoring system needs to

be developed for such standards to be perceived as legitimate by major importer countries and consumer goods manufacturers. Greater collaboration around the design of such a system is therefore warranted. Reducing the compliance gap could help to reduce production costs and enhance sector-wide capacity to adopt and adhere to standards. Improved land-use planning, monitoring of illegal land occupation, and land tenure regularization could reduce the prevalence of producers ineligible for certification. While common rules for doing so need to be established nationally, subnational governments require support to implement those rules. As such, sectoral fiscal earnings and CPO Fund finance should be invested in subnational level capacity building, albeit with improved checks and balances that ensure more effective outcomes.

Constantly changing sustainability norms threaten to alienate smallholders by increasing barriers to compliance. While cited interventions could contribute to overcoming barriers, reducing the yield gap, and enhancing smallholder competitiveness in global markets, targeted smallholder support is required. Improved public extension services and oversight in input and offtake markets (and funding to subnational governments to support this) are key to integrating smallholders into the formal, standard-driven palm oil market. However as companies – and the internal and external private standards shaping their practices – are partly accountable for the emerging pressure on smallholders to upgrade, equity considerations should feature more prominently in corporate strategy. New business models that better link independent smallholders to inter alia input markets, finance, and technical support are being implemented by development projects and NGOs acting as intermediaries, often with support from companies. Yet the upscaling of successful schemes is still a major barrier that may require more active involvement of financial institutions, civil society organizations, and local government institutions.

Because private standards, at least in the oil palm sector, typically lack mechanisms to encourage companies to further invest in smallholder integration, targeted national-level (fiscal) incentives may be necessary. In addition to the promotion of better business models, incentives could be introduced to further encourage jurisdictions to pursue sustainability and productivity objectives more actively, to

align associated interventions with corporate procurement policies, and to stimulate sectoral agencies to better enforce regulations in support of ISPO and MSPO. To enhance the legitimacy of those efforts, closer collaboration between stakeholders is needed to develop a uniform monitoring, reporting, and verification system. Exploiting complementarities between company-level RSPO auditing and landscape-level monitoring systems is desirable.

The emergence of jurisdictional approaches is a step in that direction. However, they are thus far limited to a select number of provinces and lack an overarching national framework. Jurisdictional approaches will require strong alignment between public policies and private initiatives, as well as alignment across levels of government. Advancing sustainability at the jurisdictional level may not only attract companies interested in sourcing from clean suppliers, it could also serve to orient public investments to overcome performance issues and upgrade value chains. They may also stimulate increased collaboration among stakeholders in specific jurisdictions, to advance territorial planning for land use and infrastructure development, conservation of threatened ecosystems, safeguarding of local populations' rights and cultural values, provision of services, and technological knowhow for smallholders, as well as the monitoring of jurisdictional performance over time. Adopting experimentalist approaches to solve disconnects, overcome antagonisms, and strengthen complementarities in the palm oil regime complex may offer the potential to address the three major issues affecting the palm oil sector's social, economic, and environmental performance, but specific actions are needed.

One specific mechanism through which experimentalist governance approaches could help to resolve the coordination problems identified is that of public comparison or "benchmarking of equivalence" as a way of reconciling and promoting convergence among competing standards (see Overdevest and Zeitlin 2012). Another is the establishment of joint committees, comprising national and transnational actors, to review the implementation of agreed sustainability principles or standards. Such committees can recommend corrective actions on the ground and, where necessary, revisions of the standards and procedures themselves, as has been the case with FLEGT implementation (see Overdevest and Zeitlin 2018).

Experimentalist approaches can also benefit from comparative assessments, resulting from companies self-reporting, with NGO support, on the outcomes (e.g. in sustainable production, standards uptake, farmers benefits) of their different experiences in diverse geographical contexts, as part of debates on existing platforms (e.g. Innovation Forum, Responsible Business Forum).

2.8. Conclusions

The global palm oil value chain has increased in complexity over time, as has the governance system for the sec- tor. The latter has evolved into a transnational regime complex involving state policies and regulations, market- based mechanisms, and self-regulatory initiatives that interact on and within different scales, from the global to the subnational. In our conceptualization of the palm oil regime complex, we have highlighted the diversity of interactions among state and non-state actors and regulatory instruments, both vertically and horizontally, by unpacking emerging disconnects, complementarities, and antagonisms. This offers insights into the complexity of the system governing the global palm oil value chain. We have emphasized three major performance issues that challenge the effectiveness of this regime complex: land conflicts, yield gaps, and carbon emissions. Despite progress, these issues have proven to be intractable, and continue to undermine the sustainability and inclusivity of the sector.

While important complementarities between state regulations and private sector-driven initiatives are increasingly being explored at international level, several disconnects and antagonisms have emerged nationally and sub- nationally. These reveal unresolved disputes over power and authority both within government, and between government, the private sector, and major consumer countries. Addressing these disputes is critical to advance sectoral sustainability and inclusivity goals. Complementarities have been built primarily around transnational companies and NGO initiatives, largely a result of pressure from consumer goods manufacturers, and increasingly, retailers and banks. Such complementarities are yet to contribute meaningfully to the reversal of the sec- tor's structural performance issues because of challenges in resolving disconnects and antagonisms. Additionally, the legitimacy of Malaysian and

Indonesian efforts to set up their own globally recognized standards, in ways that are acceptable for end-users and governments, is still in doubt if they fail to build in a multistakeholder process.

It is difficult to foresee how the palm oil regime complex will evolve. Our conceptualization, however, offers important insights to help overcome institutional barriers and build greater synergies between institutions and regulations at value chain and territorial level. Our analysis examines how public and private regulations impact the performance of the sector, yet it does not interrogate the role of specific interventions adopted by individual companies or their impacts. For example, supply chain and risk management interventions could influence chain governance dynamics, which in turn bears on regulatory processes within transnational regime complexes. Questions that warrant further critical enquiry analysis thus include: How is the regime complex shaped by the way in which leading companies govern the palm oil value chain?; What type of coordination mechanisms do leading companies adopt, with respect to their suppliers and buyers?; Which actors are best positioned to drive improvements in global value chain governance?; and How do sustainability considerations play into these dynamics? Linking analyses on regime complexity to global value chain dynamics could serve to better represent the inter- face between commercial and public interests, in the context of sustainability governance.

3. Sustainability pathways of oil palm production: a comparison of Indonesia, Colombia and Cameroon[2]

Abstract: Oil palm development is a major subject in controversies over sustainable agriculture. Economic benefits are very high due to the crop characteristics and its impact on smallholder development and economic growth. Producer countries have targeted oil palm expansion to meet national and global demands for food and energy. However, oil palm development also has considerable environmental costs in the form of deforestation, loss of biodiversity and greenhouse gas emissions. In this article, the concept of sustainable pathways is used to describe how sustainability issues are being addressed in three different countries: Indonesia, Colombia and Cameroon.

[2] Dermawan, A., and Hospes, O., 2018. Sustainability pathways in oil palm cultivation: A comparison of Indonesia, Colombia, and Cameroon. In Rival, A. (Ed.), Achieving sustainable cultivation of oil palm Volume 1: Introduction, breeding and cultivation techniques (pp. 33-48). Cambridge, England: Burleigh Dodds Science Publishing.

3.1. Introduction

Oil palm (*Elais guineensis*) is a versatile crop with increasing multiple uses, especially for food and energy (Alonso-Frajedas et al. 2016). Palm oil has a number of comparative advantages over other vegetable oils. The oil palm has the highest oil yield, which could reach as high as ten times of the yield of soybean, rapeseed and canola oils. It also has the lowest land requirement to produce one ton of oil, and the lowest production cost per hectare (Corley and Tinker 2015). While covering six percent of the total global agricultural land, palm oil production contributes to one third of global vegetable oil production. Oil palm also has a long lifespan, as it can provide continuous harvest in about 25-30 years.

Oil palm can grow on many types of soil, provided the general physical characteristics are not extreme and the climate is suitable. The ideal latitude for its growth is between 15^{o}N and 15^{o}S (Corley and Tinker 2015). An adequate combination of rainfall and sunshine is important for the growth of oil palm. A minimum of 2,000 mm per year of annual rainfall that is evenly distributed, minimum temperature of 20^{o}C and maximum between 28 and 34^{o}C, and at least 1,800 hours of sunshine per year are needed to allow the crop to reach its potential (Ngando-Ebongue et al. 2012, Corley and Tinker 2015).

Palm oil, the processed oil from oil palm, has a variety of derivative products. The demand for palm oil has been increasing since the last three decades. It has surpassed soybean as the most consumed and traded oilseeds globally (Ngando-Ebongue et al. 2012, FAO 2014). China, India, and European Union are the largest importing countries for palm oil.

Despite being very flexible, oil palm is currently one of the most debated crops. For the key producing countries, oil palm has become an important contributor to the economy. Cultivation of oil palm absorbs a vast amount of labor for large-scale estates, as well as millions of smallholders who cultivate and process oil palm. Oil palm also has a vast amount of derivative industries that serve many sectors.

Together with the economic benefits that have been provided through the development and expansion of oil palm, there are a number of significant associated environmental and social costs. A number of studies have highlighted deforestation and biodiversity loss as the main environmental costs (Linder and Palkovich 2016). Koh and Wilcove (2008a, 2008b) show that about half of oil palm expansion in Malaysia and Indonesia have gone through prior deforestation. Subsequent studies on the sources of deforestation from 2000s also confirm the contribution of oil palm as one of key drivers of deforestation (Abood et al. 2014).

Fayle et al. (2010) found that the total number of ant species in oil palm plantations was significantly lower than under forest cover. Conversion to oil palm dramatically reduces species richness, with significantly fewer primary-forest species than found on logged forests, notably for birds, leaf-litter ants, beetles, aerial hymenopterans, flies and true bugs (Edwards et al. 2014b). Earlier studies in Indonesia also found similar results: oil palm plantations support much fewer species than do forests and often also fewer than other tree crops (Fitzherbert et al. 2008).

In terms of social costs, dispossession of smallholders' land by corporations and violent groups have become important social impacts (e.g. Budidarsono et al. 2013, Linder and Palkovitz 2016). Most of the countries with dominant role of corporations in driving the oil palm production are characterized by poor social impacts (IFC 2013, Buitron 2001). Specifically in Colombia, the social cost of oil palm has involved cases of dispossession of land by violent groups (Garcia-Ulloa et al. 2012, Maher 2015).

A number of governance initiatives have been launched in order to minimize the negative ecological and social impacts as well as to enhance positive impacts of oil palm cultivation. Initiatives from public agencies, private multi-stakeholder process as well as corporate self-regulation to develop standards, best management practices, certification and corporate commitments have emerged with the aim

of achieving sustainable and equitable oil palm development. Each country experiences different pathways in moving towards sustainable production of oil palm.

The present chapter aims at identifying the pathways toward sustainable oil palm production in three countries: Indonesia, Colombia, and Cameroon. Indonesia and Colombia are the leading oil palm countries in Southeast Asia and Latin America, respectively. While Cameroon is not the leading palm oil producer in Africa, its stage of development is similar to the one of other countries in the region. The three countries reflect different levels of complexities of interactions among actors, different governance challenges, as well as different routes and achievements toward sustainable oil palm production.

3.2. Conceptualizing sustainability pathways

Increasing palm oil production in sustainable way is a huge challenge for governments, private sector actors and smallholders. On the production side, actors from both government and private sectors set the production ambitions or targets for palm oil. On the consumer side, there are demands that oil palm is produced in a sustainable manner, that is, not destructive to the environment as well as respectful to the rights of the communities. Though considerations on sustainability are important, the way in which these considerations are translated into specific policies and combined with production ambitions and targets varies across places (Wittmayer et al. 2014). This leads to a variety of pathways to sustainable palm oil production.

We conceptualize sustainable pathways as trajectories that connect technical, environmental, and governance practices that reinforce each other, and consisting of actors at different levels that regulate, manage, implement and monitor these practices toward sustainable production (Leach et al. 2010). This conceptualization has three components: sustainable production as the aspiration, as a variety of practices that support each other, and governed by actors at different levels with different roles.

Sustainable production can be seen as a desired situation, a vision or an ambition. Generally, this includes not being destructive to the environment as well as respect for social conditions. It is important to note that sustainable production itself is both a context-specific and contested concept. Both different contexts and different frames of problems and solutions for sustainable production explain different steps, and ideas on steps, towards sustainable production.

Sustainable pathways involve the combination of technical, environmental, regulatory and governance practices that reinforce each other in contributing towards sustainable production. An example in the oil palm context is the combination of best management practices using the best available planting material and agronomic techniques to realize optimal yields, and regulatory practices that set limits to expansion of palm oil production into forest areas and peat land. Regulatory practices can consist of public regulation and regulation by multi-stakeholder initiatives but also corporate self-regulation. An example within the field of governance and regulation is the combination of integrated land use planning at national and regional level, and procedural requirements on mutual consultation and agreement between companies and communities at local level.

Sustainable pathways involve different actors with different roles (Leach et al. 2010). The government is generally seen as a key regulator agency. However, different bodies and levels of government may execute their regulatory role in different ways, for instance, through the development of a national standard for sustainable palm oil, organizing forest moratoria, licensing palm oil production or monitoring the private sector. Next to complying with government regulations, private sector actors may also set own regulations, manage resources and make decisions on land use. Smallholders can be seen as private sector actors from the entrepreneurship point of view, but also as those who need empowerment as they have much more limited resources to produce in sustainable manners.

There is no single pathway toward sustainable oil palm production (Leach et al. 2010, Lindahl et al. 2015). Pathways are historically contingent and context-specific. The historical development of the palm oil sector, changes of the political regime, and political frames of the issue together define the scope for sustainable pathways in a country. Different forms and combinations of regulation exist in different countries, as the involvement of different actors in the palm oil sector in, for instance, Indonesia is not necessarily the same as the one in Columbia and Cameroon. In Indonesia, public, private, and corporate self-regulation exist. In Colombia, private regulation dominates. Meanwhile, perhaps sustainability has not yet become an important policy agenda in Cameroon.

3.3 Oil palm production in three countries

3.3.1 Indonesia

From four plants brought to Bogor Botanical Garden in 1848, oil palm has gone through a long history to become one of the most economically important crops in Indonesia. Commercial oil palm during the Dutch colonial period began in 1911, where a Belgian company opened plantations in Pulau Raja (Asahan) and Sungai Lipoet (Aceh). The oil palm sector then grew faster through the development of the first palm oil factory in 1919, and by 1937 Indonesia took over Nigeria as the largest palm oil exporter. However, the oil palm sector fell dramatically during the World War II, and it continued until late 1960s (PASPI 2014).

During the New Order period since 1967, the development of the oil palm sector was facilitated by the enactment of Law 1/1967 on foreign investment. The Government of Indonesia, with the assistance of international donors, developed a variety of programs to boost the development of the oil palm sector. The introduction of programs for smallholders dramatically increased the participation of smallholders. Another turning point came in late 1990s, when the economic Indonesian crisis opened doors for a significant increase of palm oil exports. By 2006, Indonesia regained the position as the world leading

exporter of palm oil, surpassing Malaysia. Indonesia is not only the largest exporter but also one of the largest consumers of palm oil in the world. The government has also declared cooking oil, that is mainly palm-based, as one of the so-called 'nine essential products'. This is yet another reason why the government has supported the increase of palm oil production.

One of the key drivers that has facilitated the expansion of oil palm in Indonesia have been supportive government policies. The Government of Indonesia formulated policies to promote private sector investment as well as the involvement of smallholders into the palm oil business though a number of schemes since the 1970s. Indonesia became famous with the introduction of a number of schemes, such as nucleus-plasma and cooperative scheme. Throughout history, the Government of Indonesia has used different financial schemes to achieve economic growth by developing palm oil (Pramudya et al. in press). A number of additional policy measures supported investments in the palm oil processing industries. More recently, the national energy policy provides room for palm oil-based biodiesel to flourish with the biodiesel mandates. These policies are designed to reach a mid-term target of achieving 40 million tons of CPO production by 2020.

Indonesia has also formulated policies to support the development of advanced palm oil processing industries. The Government of Indonesia supports biodiesel development through the establishment of biodiesel mandatory targets. Indonesia has been moving up and down with the blending targets, and is aiming to reach 20 percent of biodiesel by 2016 and 30 percent by 2020 (Ministry of Energy and Mineral Resources 2016). However, the biofuel mandate that has been in place since 2006 has been hampered by the fact that at the same time the country also heavily subsidized the fossil fuels (Dermawan et al. 2012). The lower the oil price, the higher the amount of subsidies to be allocated for biodiesel.

Currently, the Indonesian palm oil sector is dominated by large-scale private actors. Some 11.5 million hectares in Indonesia are planted palm oil areas, which is about five percent of the country's land area. More than half of this amount, that is: 5.9 million hectares, are owned by large-scale private companies. State-owned enterprises, which dominated the sector during 1960s-1970s (see Pramudya et al. in press), currently control 0.8 million hectares. In addition, there are 1,601 palm oil processing mills throughout Indonesia. The remaining 4.7 million hectares are controlled by smallholders. Smallholders account for 40 percent of the total planted area. Indonesia is the country with the largest number of smallholders of the world (Central Statistical Agency of Indonesia 2015).

In Indonesia, palm oil yield varies across different business models (smallholders versus private companies), or even the within the same business model, for example between independent smallholders and smallholders under partnership with the companies (called plasma smallholders). Independent smallholders carry out oil palm cultivation by themselves, often using planting material of unreliable origin. Meanwhile, smallholders under plasma scheme have their cultivation controlled by the nucleus companies. Such smallholders can obtain higher fresh fruit bunches yield by 15 percent when compared to independent smallholders (IFC 2013). The best estates can reach yield levels of 6 tons of palm oil per hectare and beyond.

3.3.2. Colombia

Oil palm was brought to Colombia in 1932 (Potter 2015). It is called the African oil palm as there is another oil palm species *Elais oleifera* that naturally grows in the Amazonian region. Currently, oil palm development is concentrated in 16 states in four production zones: 1) the Western Zone, at the south of western Colombia on the Pacific coast; 2) the Northern Zone, in the northeastern part of the country, near the Atlantic coast; 3) the Central Zone, an inter-Andean valley of the Magdalena river system; and 4) the Eastern Zone, at the foothills of the eastern chain of Andes range (Gomez et al. 2011).

In the beginning, there were a small number of companies and local growers that tried to plant oil palm, mainly to supply domestic markets. Expansion took place rapidly since early 2000s as the government provided incentives to increase palm oil production for exports and to meet biodiesel blending targets of five percent by 2008 (Pacheco 2012). Currently, Colombia cultivates the largest oil palm area in South America. The development of oil palm in Colombia is driven by large scale actors (although in terms of scale they are still far below those in Indonesia and Malaysia). Currently, about 33 percent of planted area are between 200 and 1,000 hectares, and another 35 percent are over 1,000 hectares (Potter 2015). The National Federation of Oil Palm Growers, or Fedepalma, was formed in 1962 with the aim of organizing the growers and ensuring the progress of oil palm development. Smallholders formed "Strategic and Productive Alliances", where an association of smallholders forms a contract with the source of funding, usually large scale plantations (Potter 2015). In 2008, 55 mills were operating in Colombia, about half of which were relatively small (less than 15 tons fresh fruit bunches per hour). Thirteen mills had the capacity of more than 25 tons per hour, of which only two mills with more than 60 tons per hour (Pacheco 2012).

Being the largest producer in South America, Colombia has reached over 1.1 million tons of palm oil in 2015 (Index Mundi 2016). However, the oil palm production in the country has to deal with a number of limiting factors, such as topographic conditions, climatic (seasonal dry periods), less suitable soil condition, and the presence of pests and diseases (Henson 2011, Pacheco 2012, Torres et al. 2016). Waves of cool temperature and the bud rot disease have also hampered the oil palm production in the country in the last few years, with some significant social impacts (Potter 2015). Still, in 2015 the country recorded a national average yield of 3.2 tons of CPO per hectare, which is comparable to the performance of the Southeast Asia (Index Mundi).

The Colombian government has a target of establishing a total three million hectares of oil palm by 2020. In addition, the government also

aims to reach a 20 percent biodiesel blending by the same year. A number of policies to reach the targets have been issued, like for example, a policy on tax holidays, implementation of free tax zones, tax reduction from investments in productive assets and credits for establishing and maintaining plantations (Pacheco 2012). Despite these policies, some have argued that the target is overly ambitious. Reaching three million hectares means increasing the current planted area by approximately six times in five years (Garcia-Ulloa et al. 2012, Castiblanco et al. 2013, Pinto et al. 2014).

3.3.3. Cameroon

Cameroon has been traditionally using a variety of products from oil palm: the red oil from the mesocarp, the oil contained in the kernel, and the sap that ferments to generate palm wine (Nkongho et al. 2015). Local populations harvested oil palm for subsistence and trade. Oil palms were harvested in the wild groves and introduced on farmland as a mixed crop with other food and cash crops. After the arrival of the German and British colonial powers, large scale oil palm sector began to emerge.

Five of Cameroon's ten regions are suitable for oil palm cultivation: the Southwest, Littoral, South, Center and East regions. These regions are deemed suitable for oil palm cultivation as they meet biophysical requirements in terms of temperature, sunshine, precipitation, soil type and altitude (Hoyle and Levang 2012). These regions have become attractive for investments in the oil palm sector.

In 2015, Cameroon had 130,000 hectares of oil palm producing 270,000 tons of palm oil (Index Mundi 2016). Although about three quarter of oil palm areas are under the smallholders, they have very low yield, with the average of 0.8 ton oil per hectare. This is lower than the yield of agroindustries', which could reach 2.3 tons per hectare (Hoyle and Levang 2012, Nkongho et al 2014). Cameroon has a target of reaching 450,000 tons of palm oil production by 2020 (Hoyle and Levang 2012).

Cameroon is a net importer of palm oil. The country has become an interesting place for oil palm investment to serve domestic markets,

regional markets and demand from Europe. The availability of cheap land, political support from the government and the governmental plans to develop agricultural sector are also factors that make investing in Cameroon more interesting (Hoyle and Levang 2012).

Similar to the independent smallholders in Indonesia, the agronomic performance of smallholders in Cameroon is also poor. A study by Nkongho et al. (2014) found that only 35 percent of smallholders use certified planting material, while the rest use either uncertified Tenera or Dura planting material (Nkongho et al. 2014). Fertilizer application follows a similar trend, with only 1.1 percent of smallholders applying fertilizer timely and 68 percent of smallholders not using fertilizers at all. The yields are quite low: smallholders produce only seven tons of fresh fruit bunches per hectare.

3.4. Identifying sustainability pathways

The previous section highlighted that each of the three selected countries has set targets for oil palm production. Each of the targets often implies a significant amount of expansion. Such expansion means either opening new land from forests or changing existing land use to give way to oil palm. The following section discusses sustainability issues that are emerging in each of the three countries and how actors respond to these issues.

3.4.1. Sustainability challenges

With the economic benefits provided through the development and expansion of oil palm, there are a number of significant associated environmental and social costs. Some of the environmental impacts of the oil palm expansion are deforestation, biodiversity loss, carbon stock losses and greenhouse gas emissions (Linder and Palkovitz 2016). Koh and Wilcove (2008a, 2008b) show that about half of oil palm expansion in Indonesia have gone through prior deforestation. Subsequent studies on the sources of deforestation from the 2000s also confirm the contribution of oil palm to deforestation (Margono et al. 2012). However, there are disagreements on how much oil palm has contributed to deforestation. For example, the study by Gunarso et al.

(2013) shows that undisturbed forests were only about five percent of the land converted to oil palm, which is much smaller than concluded by other studies (Miettinen et al. 2011, Margono et al. 2012, Busch et al. 2015, Vijay et al. 2016). In Colombia about half of the oil palm plantations established in 2002-2008 were previously classified as pastures, and less than 15 percent of the oil palm replaced natural vegetation (forests, savannah).

With regard to biodiversity, Fayle et al. (2010) concluded that total ant species in Sabah, Malaysia, decreased from 309 to 110 due to the conversion of forests to oil palm plantations. In general, conversion of habitat has decreased the number and richness of species, with significantly fewer primary-forest species than found on logged forests, notably for birds, leaf-litter ants, beetles, aerial hymenopterans, flies and true bugs (Edwards et al. 2014b). Other studies in Indonesia found similar results: oil palm plantations support much fewer species than do forests and often also fewer than other tree crops (Fitzherbert et al. 2008, Kurz et al. 2016).

The associated greenhouse gas emissions from the expansion of oil palm, especially those that come through forest clearing using fires, is also significant. Establishment of oil palm reduces soil organic carbon (van Straaten et al. 2015). Van Straaten et al. (2015) also found that the higher the initial soil organic carbon, the higher the losses. Carbon losses from forest peat conversion to oil palm could reach 405 tons in one planting cycle (25 years) (Murdiyarso et al. 2009, Schrier-Uijl et al. 2013). The greenhouse gas emissions depends on the previous land use. In Colombia, the differential production of greenhouse gas depends on whether the land use that precedes oil palm is forest or pasture. In the case of pasture, the greenhouse gas intensity is lower (Castanheira et al. 2014).

In terms of social impact, dispossession of smallholders' land by corporations or (para)military forces is one of the key social impacts (e.g. Budidarsono et al. 2013, Maher 2015). Most of the countries with a dominant role of corporations in driving the oil palm production are

characterized by poor social impacts of oil palm (Obidzinski et al. 2012, IFC 2013, Li 2015). Examples are lack of smallholder involvement in large-scale oil palm projects and poor working conditions of farmer-laborers (Hoyle and Levang 2012). In Colombia, the social cost of oil palm involves dispossession of land by (para)military groups (Garcia-Ulloa et al. 2012, Maher 2015). Oil palm companies are also found to show lack of respect to traditional rights (Obidzinski et al. 2012).

3.4.2. Taking steps towards sustainability: certification and beyond

A number of initiatives have emerged to deal with the sustainability issues in the palm oil sector. In 2001, the World Wildlife Fund (WWF) and a number of European food manufacturers explored the idea of establishing a Roundtable for Sustainable Palm Oil (RSPO), which was eventually established in 2004. Through multi-stakeholder consultation, RSPO developed principles and criteria for sustainable palm oil. The vision of the RSPO is to transform markets and to make sustainable palm oil the norm. Specific objectives of the RSPO are to promote the production, procurement, finance and use of sustainable palm oil products; to develop, implement, verify, assure and periodically review credible global standards for the entire supply chain of sustainable palm oil; to monitor and evaluate the economic, environmental and social impacts of the uptake of sustainable palm oil in the market; and to engage and commit all stakeholders throughout the supply chain, including governments and consumers. Membership of the RSPO is voluntary for palm oil companies as well as for the estates who wish to have their operations certified.

The RSPO has agreed on eight principles: commitment to transparency, compliance with applicable laws and regulations, commitment to long-term economic and financial viability, use of appropriate best practices by growers and millers, environmental responsibility and conservation of natural resources and biodiversity, responsible consideration of employees and of individuals and communities affected by growers and mills, responsible development of new plantings, and commitment to continuous improvement in key

areas of activity (RSPO 2013). For each of these principles specific criteria and indicators have been formulated against which a palm oil operation is evaluated. The principles and criteria are generic. Countries have to develop their own national interpretation in order to ensure that the principles and criteria are relevant under national contexts. Colombia and Indonesia have their own national interpretations of the RSPO principles and criteria.

Both the government of Indonesia and Malaysia have also established official principles and criteria for sustainable palm oil. Indonesia launched a national sustainability standard in 2011 that was updated in 2015: the Indonesian Sustainable Palm Oil (ISPO) standard. The Government of Indonesia emphasized that the plantation sector in Indonesia has to be developed in accordance with a number of principles, such as sovereignty, sustainability, efficiency, fairness, and environmental integrity. ISPO is aimed to ensure that oil palm planters and processing companies apply the principles and criteria correctly and consistently to produce sustainable palm oil (Ministry of Agriculture Regulation 11 of 2015). Since the ISPO is established as a regulation by ministerial decree, it is mandatory for processing companies and large-scale plantations. Plasma and independent smallholders as well as eligible oil palm companies that produce palm oil to serve the renewable energy are exempted.

Similar to RSPO, ISPO also consists of a number of principles, criteria and indicators. The principles and criteria are differentiated for different types of plantations: plantations that are integrated with the processing facilities, plantations that are not integrated with processing facilities, processing facilities that are not integrated with plantations, and plantations for biodiesel. Though not mandatory for plasma and independent smallholders, the ISPO does specify the principles and criteria for these smallholders. These principles include business legality, plantation management, protection to the use primary forests and peatland, environmental management and monitoring, responsibilities to the workers, social responsibilities and

community economic empowerment, and continuous improvements (Ministry of Agriculture Regulation 11 of 2015).

The Malaysian Sustainable Palm Oil (MSPO) standard was launched in 2013. It was officially implemented in January 2015. Unlike ISPO, MSPO is voluntary. The government has the ambition to get all actors certified by 2020. Given this ambition, several observers expect that the MSPO may turn into a mandatory standard in the future. MSPO is applicable to independent smallholders, oil palm plantations and organized smallholders and palm oil mills. MSPO has eight principles, related to: management commitment and responsibility; transparency; compliance to legal requirements; social responsibility, health, safety and employment conditions; environment, natural resources, biodiversity and ecosystem services; best practices; and development of new planting.[3]

The third kind of initiatives toward producing sustainable palm oil comes from corporate self-regulation. The most recent one of this kind is the pledge of six giant palm oil companies to zero-deforestation in Indonesia under the Indonesian Palm Oil Pledge (IPOP) initiative[4]. These six companies are Golden Agri Resources, Wilmar International Limited, Cargill, Asian Agri, Musim Mas, and Astra Agro Lestari, together with the Indonesian Chamber of Commerce. IPOP has a vision to advance Indonesia's sustainable palm oil business practices by collaborating with the government and all stakeholders to attain a sustainable palm oil sector. The giant palm oil companies want to work in a collaborative way to develop sustainable palm oil production that delivers stakeholder value, is deforestation free and respects human and community rights.

[3] Hospes, O. (2014) explains that the ISPO and RSPO standards are look-alikes but differ on critical points. These differences are also listed by Efeca (2016) in its comparative study of RSPO, ISPO and MSPO.

[4] It is important to note that the members of IPOP have ended IPOP as a group by end of June 2016. However, each individual company will continue to implement zero deforestation commitment individually.

Indonesia is a perfect example of how the three regulations – RSPO, ISPO and self-regulation – are coexisting. By May 2016, there were approximately 115 members of the RSPO in Indonesia. Thirty-five companies have a number of their estates and mills certified, covering 1.6 million hectares that produce 6.6 million tons of certified sustainable palm oil (CSPO) from approximately 24 million tons of fresh fruit bunches. By the same period, there were 148 estates or mills that were certified under ISPO. The Government of Indonesia originally targeted to certify all actors by 2014, but the level of compliance to date remains low. It was reported that by 2014, approximately 200 out of the 881 companies that are eligible pursue ISPO certification, had registered. However, only 67 were certified[5]. Next to seeking compliance with ISPO, six giant palm oil companies in Indonesia established IPOP. Although the size of their plantations and the capacity of their mills are not known publicly, it is estimated that these companies control at least 90 percent of the CPO intake in Indonesia (AgroIndonesia 2015).

In Colombia and Cameroon, the discussion on sustainability has centered on RSPO compliance, although Colombia is more advanced than Cameroon in terms of engagement with RSPO. A national interpretation of the RSPO principles and criteria exists for Colombia and it is under revision to align with the 2013 version of RSPO principles and criteria. There are 28 RSPO members in Colombia, where five of them produce 107,000 tons of CSPO from 39,500 hectares of total certified areas. Fedepalma has a desire to implement the principles and criteria of RSPO and move its members gradually into certification (Potter 2015). With Colombia's CPO export is approximately 30 percent of the production, and European countries being the main export destination, it could be expected that Colombia will move toward being fully compliant with RSPO certification.

[5] Wibowo, A.D. 2014. Baru 7% Perusahaan Sawit Miliki Sertifikat ISPO. http://ekonomi.metrotvnews.com/read/2014/10/05/300849/baru-7-perusahaan-sawit-miliki-sertifikat-ispo

As of 2016, there are no RSPO members in Cameroon, although some efforts are geared toward moving to RSPO (RSPO n.d., TFA2020 2015). Both Colombia and Cameroon have laws or regulation on the practices of oil palm plantations and processing units, although they might not be structured in the same way as the RSPO or ISPO. For example, WWF and Greenpeace reported that one large company in Cameroon did not follow the requirement (in the form of presidential decree) to establish the oil palm concession in terms of avoiding forest clearing. Allegedly, the same company also violated the court order to suspend the operation after complaints by local people (Greenpeace 2013).

3.4.3. Dynamics: actors, practices and regulations

Decision making processes in the oil palm sector takes place in different policy arenas at different levels. Three policy arenas can be distinguished. First, land use planning at national, regional and local level. The specific issue is whether or not to allocate land for oil palm, and if so, in what areas. Second, the issuance of permits, that is, decision making on whether a company or smallholder can be given a license to cultivate palm oil in the areas designated for palm oil cultivation. Third, planning of palm oil production at the estate level, which takes place after the permit has been issued by the government and obtained by the permit holder (Paoli et al. 2015).

Decision-making processes in the oil palm sector are complex because of three issues. The first issue is that the different arenas involve a diversity of public authorities with different, often overlapping, mandates on palm oil issues. In Indonesia, the Ministry of Agriculture has issued the ISPO standard but is not mandated to take decisions on land use planning, which is a delicate and longstanding issue in Indonesia (Brockhaus et al. 2012, Bettinger 2015, McCarthy and Robinson 2016, Setiawan et al. 2016). Spatial planning is not clear or contested. Different ministries use different maps to define and designate areas for agriculture, mining, forestry. As a result, (unclear) spatial planning is generally seen as one of the most important problems in the palm oil sector in Indonesia (Gaveau et al. 2016).

Decentralization processes have not made things easier or more transparent. Not only has decentralization led to more regulations (at provincial and district level) but also lack of clarity on how decisions on land allocation, issuance of permits for oil palm concession and operational practices are made in Indonesia. This lack of clear rules of the game has enabled local authorities to make abuse of their public power and to enrich themselves personally. Similarly, Colombia is faced with competing authorities, competing land uses and politicization of palm oil production. One of the drivers that facilitated the expansion of oil palm in Colombia was the political support given during the President Uribe administration with the notion that the country could reach three million hectares of oil palm. As a result of this political support and compared to other commodities, oil palm got extra-ordinary support through the Rural Capital Incentive program (Potter 2015).

The second issue is that different public and private regulatory systems are used or referred to in the different policy arenas. These systems may complement but also compete with each other. RSPO and ISPO generally serve the same purpose. Also, they have a number of similar principles and criteria. However, beyond their respective voluntary/mandatory status, there are major differences between RSPO and ISPO in many key areas, such as the treatment on areas called high conservation value and the implementation of free and prior informed consent (Efeca 2016, Hospes, 2014, Ministry of Agriculture and RSPO Secretariat 2016). This is not (yet) the case in Colombia and Cameroon, as these countries do not have any mandatory national public sustainability standards, although these countries have legislations that regulate how oil palm must be cultivated and processed.

The complexity has become even more intense with the pledge of six giant palm oil groups to establish IPOP to pledge for "zero deforestation, no peat land and no exploitation" practices in the oil palm production. These companies have their estates and mills both

RSPO and ISPO certified. Although IPOP is currently only directed at palm oil production in Indonesia, the pledge could have implications for other countries. Depending on how each member company defines and translates the commitment, each or these companies may move their expansion plans to other countries. Without improving their practices, environmental and social problems of palm oil production in Indonesia and Malaysia could be "transported" to Africa (Linder 2013, Wich et al. 2014, Linder and Palkovitz 2016). Since IPOP has been disbanded as a group and each member carries out its own zero deforestation commitment individually, it remains to be seen how each company defines, translates, implements and monitors its commitment to zero-deforestation.

Interestingly, the Government of Indonesia and Malaysia established the Council of Palm Oil Producing Countries (CPOPC) in 2015, with the aim to "…ensure long term benefits of … palm oil endeavors to the economic development and well-being of the people to the Member Countries" (President of the Republic of Indonesia 2016). The Council invites other producer countries to participate as members of CPOPC. Whereas the CPOPC is an intergovernmental initiative, the council could play a role in harmonizing or orchestrating RSPO, ISPO and MSPO standards to generate a unique and recognized standard for the sustainable production of palm oil. Of course, there is also the risk of more confusion and controversy. The council could turn into a political tool or arena to challenge private initiatives, like the RSPO and IPOP.

The third issue is about the translation of different regulatory systems into technical, land use and governance practices. While each practice may well be within the scope of a specific regulatory system, it may conflict with other regulatory system. The conflicts may be more severe under the conditions of unclear land use and tenure. Land use planning and how it is enforced has been a contentious issue in each of the countries (Hoyle and Levang 2012, Njoh 2012, Garcia and Slunge 2015, McCarthy and Robinson 2016). For example, In Indonesia, the Plantation Law 39 of 2014 still requires that all land under concession

is planted, including those with high conservation values. Meeting production and biodiesel targets may require additional forests to make room for oil palm. Large-scale companies may be able to implement best management practices as a means for intensification to increase the yield, although under unclear land tenure they may also expand their plantations outside their concessions (Gaveau et al. 2016). However, implementing best management practices might still be a dream for independent smallholders, as most of them are trapped into a vicious circle of low inputs, low production, and low income. To increase income, smallholders often consider clearing of new land for oil palm as the only option. This only aggravates the struggle and problems of smallholders to meet the requirements of both public and private regulations. Even worse, the largest companies that committed themselves as a group and then individually to zero-deforestation, will not accept their products if and when these smallholders establish their plantations through deforestation.

3.5. Creating sustainability pathways

The variety of sustainability initiatives of public and private actors shows that all actors in the palm oil industry acknowledge environmental and social impacts of palm oil expansion and the need to minimize these. However, there is no agreement on what actor or regulatory system should be leading in addressing these impacts. Given the many different actors and increasing number of regulatory systems in the palm oil sector, we consider organizing deliberation and collaborative interaction between different actors as critical for defining and achieving context-specific sustainable pathways for palm oil production.

Taking lessons from Indonesia where all regulatory systems are coexisting, it is possible to see how pathways toward sustainability may emerge and to distinguish different steps. The first step is to agree on a common vision and to discuss this vision with a view to identify shared principles, acknowledging that the definition of sustainability is not rigid and is open to multiple interpretation. When there is a

common vision, the second step is to specifically define the pathways or the actor-practice connections that reinforce the technical, land use, and governance practices. This framework allows for context-specific combinations. The third step could be to improve one standard by learning from other standards, using the principle of continuous improvement (that is common for both RSPO and ISPO). The fourth step could be to acknowledge diversity of authorities and regulatory systems and at the same time seek mutual recognition. Mutual recognition is a principle and mechanism to cope with plural legal order (Berman 2009).

The establishment of the RSPO, the rise of national standards for palm oil in Indonesia and Malaysia, and more recently, the emergence of private self-regulation and commitment to zero-deforestation show that sustainable palm oil has been tabled by all policymakers and stakeholders in the field of palm oil. The challenge is now to define mutual responsibility and shared sovereignty, such to prepare a concerted effort and to create context-specific sustainable pathways for palm oil production in Indonesia, Columbia, Cameroon and all other oil palm producing countries of the world.

4. When the state brings itself into GVC: the case of the Indonesian Palm Oil Pledge[6]

Abstract

A myriad of global non-state institutions to govern sustainable production and trade of Global Value Chains (GVCs) has ignored the role of the state. Its implementation, however, rings the call to bring the state in GVC analysis. This paper contributes to the re-centering the state in GVC analysis. We provide an analysis of the rise and fall of the Indonesian Palm Oil Pledge (IPOP). IPOP is a commitment of some biggest palm oil companies towards zero-deforestation in Indonesia, but was dissolved after serious critique from the Government of Indonesia (GoI). Our question is: why and how did the GoI decide to put an end to the IPOP? We show that the GoI orchestrated the IPOP's demise by framing it as a danger to smallholder development, as not acknowledging public standards, and as an illegal cartel. The GoI's counter-framing re-asserts its sovereignty over producers, rule-making and economic organization. We argue that when a state *perceives* that when non-state-driven GVC governance threatens its sovereignty over producers, rule-making and economic organization, it will engage in discursive power struggle with non-state actors. More specifically, *collective* action of non-state actors can particularly trigger a state to engage in discursive power struggle with non-state actors.

[6] Dermawan, A., and Hospes, O., 2018. When the state brings itself back into GVC: The case of the Indonesian Palm Oil Pledge. Global Policy, 9 [Supplement 2]: 21–28.

4.1. Introduction

During the last two decades a myriad of global non-state institutions has arisen to address environmental problems and to develop transnational rules for sustainable production and trade of global commodities. Though scholars have differently labelled these institutions to refer to Global Value Chain (GVC) governance, Non-State Market Driven (NSMD) systems or Global Private Governance, their common explanation for the proliferation of these non-state institutions has been the limited capacity and/or unwillingness of the state to create and enforce stringent environmental regulations (Cashore 2002, Eberlein et al. 2014, Gulbrandsen 2008, Schouten and Glasbergen 2011, Smith and Fischlein 2010). One of the results of the growing attention to governance of global environmental problems was that the earlier focus in GVC analysis (see Hopkins and Wallerstein 1977, 1986) on the role of the state in shaping global production disappeared. GVC scholars shifted their focus from the state to inter-firm relationships and the role of lead firms in governing value chains (Gereffi et al. 2005, Sobel-Read 2014). The role of the state was simply ignored or considered to be passive and outside the realm of global value chains (Brun and Lee 2016).

In recent years, the call to bring back the state in GVC analysis can be increasingly heard from scholars investigating the implementation of transnational or global private standards for sustainability at the national level or in domestic arenas. Adolf et al. (2015) show how the state recaptures governance in transboundary fisheries and challenges lead-firm control in GVCs. Pramudya et al. (2018) show that the course of development of different non-state initiatives aimed at promoting sustainable palm oil in Indonesia prompted different and changing reactions of the Indonesian state. Looking at the implementation of transnational rules for forest certification and labor rights in China and Indonesia, Bartley (2018) observes that, 'domestic governance is far from an empty space' (p.34). He states that, 'The hope of transcending domestic governance and bypassing the state is illusory' (p.34), calling for a "re-centering of the state" for improving transnational governance of land and labor.

We want to contribute to the re-centering of the state in GVC analysis, both empirically and conceptually. This is not about focusing on the state but developing an "institutionalist perspective" (as coined by Eckhardt and Poletti in this volume), paying attention to the "dynamics of causation" (ibid) that – in our contribution – go from the state to GVCs. For this purpose, we provide an in-depth analysis of the rise and fall of a private initiative to serve a public interest: the joint pledge of the biggest palm oil companies to zero-deforestation in Indonesia. The pledge was launched as the Indonesian Palm Oil Pledge (IPOP) during the United Nations (UN) Climate Summit at New York in September 24, 2014. To analyze this case, we conceptualize power struggles between state and non-state actors over governance in the upstream part of GVCs in terms of competing claims to authority over producers, rule-making and economic organisation in the domestic arena. We particularly explore to what extent the notion of sovereignty can be helpful to understand when and how the state engages in power struggles with non-state actors over GVC governance.

The IPOP was launched during the United Nations (UN) Climate Summit at New York in September 24, 2014. That day, four of the world's biggest palm oil producing companies (Asian Agri, Cargill, Golden Agri-Resources and Wilmar International) committed themselves to zero-deforestation by signing the IPOP. Few months later two other big palm oil producing companies (Musim Mas and Astra Agro Lestari) joined the IPOP group. All six companies can be characterized as large multinational companies, with a complex ownership structure and with palm oil production as a core business.

The IPOP is a remarkable initiative in many respects. To start with, the IPOP is not the only and certainly not the first initiative to govern the sustainability of the oil palm sector of Indonesia. The oil palm sector in Indonesia is characterized by a multitude of governance initiatives of state and non-state actors to promote sustainable production of palm oil in Indonesia (Dermawan and Hospes 2018, Pacheco et al. 2018). The leading non-state global initiative is the Roundtable on Sustainable Palm Oil (RSPO). The RSPO was established in 2004 by

European food industry and environmental NGOs, which together developed a certification system and global standard for sustainable palm oil (Schouten and Glasbergen 2011). Indonesia contributes significantly to the mission of the RSPO to make the whole palm oil sector sustainable: Indonesia produces 55% of the total RSPO-certified palm oil, that is, 6.5 million tons (RSPO 2017). The Government of Indonesia (GoI) was actively involved in the discussion on a global standard in the earlier years of the RSPO but gradually distanced itself from the RSPO when this non-state initiative started to implement its global standard in Indonesia. In 2011 the GoI launched its own national standard: Indonesian Sustainable Palm Oil (ISPO). It is nearly a copy of the standard of the RSPO but under government regulation and control (Hospes 2014, Pramudya et al. 2018). Whilst all companies - except Astra Agro Lestari - are member of the RSPO and all face the obligation the get ISPO certified, they somehow saw an added value in starting a new governance arrangement. The pledge to zero-deforestation suggests that the companies seemed eager to put the bar higher than both ISPO and RSPO. Interestingly, with the pledge the six companies seemed committed to put aside their interests to clear forested areas in their concessions and to serve a widely felt public interest as private actors.

Possibly even more remarkable than the rise of the IPOP was its demise in less than two years after its start. On June 30, 2016, the IPOP was officially dissolved, following critical comments and threats from the GoI. The reaction of the GoI was interesting for two reasons. First, the GoI has often manifested itself as an advocate or partner of the palm oil industry the debates on sustainable palm oil in Indonesia. Second, the GoI is strongly committed to developing a palm oil industry that is both globally competitive and sustainable.

The main question of this article is: why and how did the GoI decide to put an end to the IPOP? To answer this question, we collected data about companies' sustainability policies prior to the establishment of the IPOP, the document of the IPOP declaration, and IPOP progress reports. We retrieved news articles from the national media, compared the IPOP components with the RSPO and ISPO standard, and

reviewed official documents and press releases. Last but not least, we organized interviews with key informants. We experienced that both government officials and business actors in Indonesia felt embarrassed about the IPOP. As a result, it was not easy to organize interviews. Under these circumstances, we succeeded in conducting interviews with six key informants: staff from the IPOP management office, RSPO Indonesian office, INOBU, WWF Indonesia, the Ministry of Economic Affairs, and one of the six companies.

Our paper is structured as follows. We start with a conceptualization of power dynamics between state and non-state actors over GVC governance at the upstream part, also discussing the concept of sovereignty. Then we picture the IPOP by presenting its' aim, components and planned phases. The next section provides an in-depth analysis of the rise and demise of the IPOP. We end with a conclusion and some arguments to be reviewed in future research.

4.2. Conceptualizing power dynamics of state and non-state actors over GVC governance

To conceptualize power dynamics between state and non-state actors over GVC governance in the domestic arena or the upstream part of GVCs, we first introduce a broad notion of GVCs. Traditionally, GVC analysis is focused on commodity flows and the way in which power struggles between firms affect such flows. We hold that GVCs are not only about transboundary flows but involve territories and producers as well. This implies that any claim to authority over commodity flows is also a claim to authority over territory and producers.

At this point, the state has to be brought back into GVC analysis. In claiming authority over commodities (and thus over territory and producers), non-state actors – sooner or later – will have to cope with the state and its claims to authority over territory and producers, and then over commodity flows. We posit that tensions and conflicts resulting from claims to authority of non-state actors over GVCs can prompt the state to re-assert power and control in the face of new non-state governance initiatives.

To understand when and how the state re-asserts power and control over GVC governance, we think that the concept of sovereignty as a political tool or argument of the state in power struggles with non-state actors can be very useful. Scholars on sovereignty show that it is not so interesting to define what sovereignty is but rather to study how states use sovereignty in a more or less opportunistic way to minimize external interference by other states in their economy or political system (Krasner 1999). This notion of sovereignty as a political tool can be easily extended to studying when and how the state reacts to a GVC initiative as a kind of external intervention into their economy and territory.

Interestingly, Gammeltoft-Hansen and Adler-Nissen (2008) argue that, 'It is exactly in the struggle over differing claims to authority that sovereignty comes most to the fore. [...] The performative moments of sovereignty are strongest in times of crisis, when the State appears to lose the ability to ensure internal rule or freedom from external interference' (ibid, p.7). For our purpose, this means that tensions between state and non-state actors over control of GVCs can be a performative moment of sovereignty, that is, a moment for the state to use sovereignty as political tool or argument to challenge the claim to authority of non-state actors.

When and how the state uses sovereignty as an argument to react against a GVC initiative, is an empirical question. Generally speaking, this depends on how interactions between state and non-state actors evolve over time. Eberlein et al. (2014) distinguish four types of governance interactions: coordination, competition, cooptation and chaos. They emphasize that governance interactions between the same set of actors may shift from one type to another. We expect that the moment and extent to which the state *perceives* a GVC initiative as a threat to its domestic and territorial sovereignty is crucial in shaping power dynamics with non-state actors over the control of GVCs, its territorial base and producers.

4.3. The components and planned phases of the IPOP

The goal of the IPOP was 'to find solutions for sustainable palm oil that is deforestation free, respects human and community rights and

delivers shareholder value' (IPOP, 2014). The pledge had four components. These components do not offer specific rules, measurable goals or concrete criteria but a kind of agenda with general intentions and steps to be taken. The first component was to improve environmental stewardship. Under this component, these companies would adopt and promote sustainable oil palm production practices. The second component was to collaborate with other stakeholders and to engage with the GoI to encourage the development of policies, legal and regulatory frameworks that promote the implementation of the pledge. The third component was to expand social benefits. These include the improvement of smallholder productivity by providing technical assistance and improvement of extension services to plasma smallholders. The fourth component was to increase the competitiveness of palm oil business. Key activities include encouraging other palm oil companies to align with the pledge.

Each of the four components of the pledge is quite like one of the RSPO or ISPO principles (Table 2). This suggests that the initiators of the IPOP have used the earlier established RSPO and ISPO standards as examples to formulate their intentions.[7] At the same time, it is important to mention that before the companies signed the IPOP, each company had formulated its own sustainability policy. Together, these individual policies have been used to formulate the IPOP, particularly the first and the third component.

Table 2. Comparison of principles of RSPO, ISPO and IPOP

	RSPO principles	ISPO principles	IPOP components
1.	Commitment to transparency		
2.	Compliance with applicable laws and regulations	Business legality	Strengthen government policy and regulations
3.	Commitment to long term economic and financial viability		Improve competitiveness of Indonesian palm oil
4.	Use of appropriate best practices by growers and millers	Estate management; Protection on the utilization of primary natural forest and peatland	

[7] The RSPO principles and criteria were adopted at the RSPO General Assembly in 2005 whereas the ISPO standard was launched in 2011 (Hospes and Kentin, 2014).

5.	Environmental responsibility and conservation of natural resources and biodiversity	Environmental management and monitoring	Improve environmental stewardship
6.	Responsible consideration of employees, and of individuals and communities affected by growers and mills	Responsibility to the workers; Social responsibility and community economic empowerment	Expand social benefits
7.	Responsible development of new plantings		
8.	Commitment to continuous improvement in key areas of activity	Continuous business improvement	

Sources: RSPO (2013); The Ministry of Agriculture Regulation 11/Permentan/OT.140/3/2015; IPOP (2014). *The ISPO principles are for integrated palm oil companies with an estate plus mill.*

In August 2015, the companies launched the IPOP management office in Jakarta. This office was set up to assist IPOP members with the implementation of the commitment and the engagement of the IPOP members with the Indonesian Chamber of Commerce (ICC) and other actors, including the GoI. The management office mapped three phases towards achieving the pledge. For the first phase (until December 2016) the following activities were planned: developing strategic partnerships, initiating a process of policy reform, streamlining the IPOP pledge into the GoI planning, and implementing pilot programs. The second phase (from January 2017 until December 2018) was aimed to upscale the pilot program. During the third phase (from 2019 onwards) all four components of the pledge had to be fully implemented (Darus 2015). In the following two sections we provide an in-depth analysis of the rise and fall of the IPOP.

4.4. The rise of the IPOP

The rise of the IPOP was triggered by three different dynamics, all of them at the international level. The first dynamic was related to interactions between international environmental NGOs and multinational manufacturers, leading to the call for deforestation-free palm oil. The second dynamic was about interactions within the RSPO and the minority position of palm oil producers in the governance of this global roundtable. The third dynamic was related to the climate

change agenda of the GoI and its ambition to show the world that it is serious about curbing deforestation.

4.4.1. IPOP as a trickle-down effect of naming and shaming by NGOs

Interactions between international environmental NGOs and multinational manufacturers as buyers of palm oil have prompted the establishment of the IPOP. One could say that the IPOP is a trickle-down effect of the successful lobbying of environmental NGOs with multinational manufacturers to commit themselves to environmentally sustainable palm oil production. NGOs like Greenpeace 'named and shamed' multinational manufacturers in their campaigns on 'dirty' palm oil (Greenpeace International 2007, 2012, 2013). Others like WWF invited them for multi-stakeholder consultations on sustainability principles as part of RSPO meetings (interview with WWF staff, 2016). As a result, the buyers started to change their purchasing policies on palm oil (Pirard et al. 2015, Pacheco and Komarudin 2017). They not only joined the RSPO but also groups such as Consumer Goods Forum, which committed toward achieving zero net deforestation by 2020. The new purchasing decisions of the international buyers of palm oil trickled down to the palm oil companies in Indonesia that started to change their production and marketing policies (IBCSD 2014).

Although not all palm companies reportedly caused negative environmental impact, poor records of some individual companies in the media resulted in a bad reputation for the whole palm oil industry in Indonesia. Dealing with reputation commons incentivized companies to join forces. Although the large palm oil companies in Indonesia are competitors, they share reputational risk at industry level (Gnych et al. 2015). They often are operating in the same area. One way to address this shared risk was to jointly commit to zero deforestation by establishing the IPOP (interview with IPOP management office, 2016).

4.4.2. From minority and scapegoat to front runner

Given the similarities between RSPO, ISPO and IPOP in terms of principles, the obvious question is why the large palm oil companies launched the IPOP. We distinguish two reasons:

First, palm oil companies have never been able to dominate decision-making process in the RSPO as a non-state organization with global membership. They form a minority (as 'producers') in the Board and General Assembly (Hospes and Kentin 2014). The producers were the ones to adapt their production policies and to pay for the adjustment, without seeing a direct translation into increased market absorption of the certified sustainable palm oil in the European markets (Pichler 2013). Even worse, they remained scapegoated for palm oil expansion, forest fires and deforestation. Not at ease with their minority position in the RSPO and annoyed by what they considered as unfair criticism, they decided to jointly manifest themselves as front-runners in stopping de-forestation.

Second, as palm oil companies with a strong international orientation, Wilmar and Cargill saw ISPO only as a minimum sustainable palm oil standard that buyers could consider (IBCSD 2014). As a representative of Sinar Mas put it:

> Much work remains to be done to make ISPO an internationally accepted standard amongst palm oil customers. There is a lack of understanding and knowledge about ISPO and it needs to be better promoted amongst customers in the international palm oil market (Suling 2016).

Seeing a lack of interest and acceptance of buyers of the ISPO (Kusumaningtyas, 2018), the large palm oil companies decided to get their act together in the international arena, launching the IPOP.

4.4.3. Following the green ambitions of the GoI at the world stage

The pledge cannot be seen in isolation from the increasing attention of the international community to mitigating or adapting to climate change. This has led to many programs and initiatives in the field of Reducing Emissions from Deforestation and Forest Degradation (REDD+) and Green Growth. The former President of Indonesia Susilo Bambang Yudhoyono called the ICC to orchestrate a discussion with the private sector on how to organize deforestation-free supply chains. The ICC formulated a position paper on REDD+ and low carbon use, and actively communicated with the Coordinating Ministry of

Economic Affairs (CMEA) in drafting a concept of the IPOP (Perkumpulan Sawit Lestari 2016).

Mr. Yudhoyono was recognized as being 'at the forefront of a transition to a new world order – in which politicians who champion good environmental stewardship to economic prosperity, will become the norm' (UN Environment 2014). He witnessed the launch the IPOP. The IPOP perfectly matched with the ambition of the president to show the international community that Indonesia is serious about curbing deforestation. Participation in the Climate Summit and witnessing the signing the IPOP was one of the Mr. Yudhoyono's last act as the President of Indonesia.

4.5. The demise of the IPOP

The demise of the IPOP began when this pledge literally touched ground in Indonesia. Soon after the IPOP management office was established in Jakarta in August 2015, Indonesian politicians and government agencies began to openly criticize the IPOP. In this section we describe different arguments of Indonesian state agencies that led to the demise of the IPOP in 2016. The first argument was that the implementation of the IPOP would undermine smallholder development. The second was the belief that the IPOP was driven by foreign interests and ignored the government priority to strengthen the ISPO. The third was that the IPOP group would become too powerful as a business conglomerate consisting of the biggest palm oil companies of Indonesia.

4.5.1. IPOP is threatening smallholder development

Several high-level government officials and members of parliament tried to dismiss the IPOP by highlighting the impact of the IPOP on the millions of independent oil palm smallholders. The CMEA stated that the IPOP as a business-to-business initiative could put independent smallholders at risk. Once the companies would implement their pledge, they could refuse to buy fresh fruit bunches (FFB) from independent smallholders who allegedly had cleared forest to cultivate oil palm (Saturi 2015, Surbakti 2015). The CMEA instructed the Ministry of Environment and Forestry (MoEF) to review all clauses

of the IPOP programs in terms of possible restrictions and threats for Indonesian smallholders.

Interestingly, two large smallholder associations had contrasting views about the IPOP. The Union of Oil Palm Farmers (SPKS) was positive about the IPOP group and appreciated the plans of the IPOP to collaborate with them on the implementation of the pledge, particularly because they felt that the government did too little to empower them (Vebri 2015). However, another oil palm smallholder association, Apkasindo, became critical when they heard that the IPOP group could refuse to buy FFB from smallholders (Aziliya 2015).

4.5.2. Driven by foreign interests and ignoring government priorities

Members of parliament and government officials suspected that the IPOP was driven by foreign interests (Said 2015, Sihombing 2015). They questioned why the signing took place in New York. They also wondered why the US ambassador had been stimulating the big palm oil companies to make their pledge (Pramudya 2018, interview staff of an IPOP company, 2018). The launch abroad and involvement of a foreign country touched a nerve of the Indonesian state actors, perceiving the IPOP as an external intervention in their palm oil sector.

Several government agencies went a step further, complaining that the IPOP ignored or bypassed their rules and rule making authority. The MoEF stated that the IPOP group had overstepped the authority of the government in terms of restricting land clearing for oil palm on areas that are permitted for clearing under the existing regulations (Jong 2015, Saturi 2015). A distinctive feature of the IPOP is the use of the High Carbon Stock (HCS) approach to define and implement zero deforestation. In this approach forest area is defined as having a carbon stock of more than 35 ton of carbon per hectare (Poynton 2014). However, the use of this threshold could become problematic as it is at odds with Law 39 of 2014 on Plantations that would require companies to clear the technically plantable areas. In addition, the commitment of IPOP not to clear peatland was in contrast with a regulation (14/Permentan/PL.110/2/2009) of the Ministry of Agriculture (MoA) which allows planting on peatland with a depth of three meters or less.

The GoI did not very much appreciate the offer of the IPOP business group to strengthen and adjust government policy. This offer denied that the government is behind the steering wheel in regulating the palm oil sector. The CMEA and the MoA reiterated that the ISPO is the mandatory sustainability standard for oil palm in Indonesia, clearly suggesting that the IPOP is redundant (Saturi 2015).

In February 2016 the government announced its plan to speed up the implementation of the ISPO. The CMEA formally established a team in June 2016 to strengthen the ISPO, with the overall aim to increase palm oil competitiveness and market acceptance (personal communication with CMEA staff, 2016). With these moves, the GoI gave a clear signal: the state is the authority to decide on the policy and instruments for promoting sustainable palm oil in Indonesia, the ISPO is the terms of reference, not a pledge of business.

4.5.3. Being too powerful

After the opening of the IPOP management office in Indonesia, the Commission for the Supervision of Business Competition (CSBC) began to investigate whether IPOP could form a cartel. For this purpose, the CSBC began to organize consultations with the IPOP management office and several ministries. During the investigations, the head of the CSBC stated that each of the IPOP companies would receive IDR 125 billion (about USD 8.4 million) of penalties if they were proven to violate antimonopoly Law 5 of 1999 (Jati, 2016).

The conclusion of the CSBC was not made public until April 2016 as a press release on the CSBC website (CSBC, 2016). The CSBC raised the point that IPOP could become a barrier to entry for other companies. The GoI believed that this could be used as the basis to disband IPOP (Laoli 2016). In fact, the CSBC sent a letter to the President and other relevant government agencies recommending that IPOP should be disbanded (Jati 2016). On June 29 of 2016 IPOP management office met with the officials of the CMEA. The next day, IPOP was officially dissolved (IPOP 2016).

Interestingly, the GoI had not disputed the individual zero deforestation policies of the companies that were developed before the

launch of IPOP. However, the GoI did perceive the collective action of the large companies as a too powerful claim to authority over the palm oil sector. Although the total plantation area that the IPOP companies have under their direct control is only about 11 percent of the total oil palm areas in Indonesia, these companies process about 90 percent of the fresh fruit bunches (Bisnis 2016).

4.6. Conclusion and discussion

The IPOP was launched in New York as a private initiative to defend a kind of global public interest, namely: stopping deforestation. The pledge was triggered by actors and dynamics at the international level. One of the major triggers was pressure from international NGOs and multinational buyers to clear the palm oil supply chain from deforestation. With the declaration of the IPOP in New York, the palm oil companies could show the world that they want to be leading in stopping deforestation and could support the green ambitions of the GoI at the world stage. The GoI did not stop or prevent the launch of the IPOP that was directed at a foreign audience, and was in line with the government's ambition to show the world leadership in environmental governance.

When the large palm oil companies wanted to implement the IPOP back home, many Indonesian state actors began to criticize the IPOP. Whereas the IPOP was presented at the international level as a private initiative to stop deforestation, Indonesian state actors reframed the initiative in three different ways: as a danger to smallholder development, as not acknowledging government rules and priorities, and as an illegal cartel.

We consider this counter framing as performative moments of sovereignty. Sovereignty is not used as an explicit political argument but manifests itself in the different frames used by the state to challenge the course and claim to authority of non-state actors. By framing the IPOP as a threat to smallholder development, the Indonesian state re-asserted its sovereignty over the millions of smallholders in the country. By clearly stating that public standards and national priorities are to guide the promotion of the palm oil sector and its sustainability, the state re-asserted its domestic sovereignty

over policy-making. By framing the IPOP initiative as an illegal cartel, the state re-asserted its sovereignty over the economic organisation of the palm oil sector.

Based on our in-depth analysis of the rise and fall of the IPOP, we provide the following arguments to be reviewed in future research: when a state *perceives* that firm-driven governance of GVCs threatens its sovereignty over producers, rule-making and economic organization within its territory, it will engage itself in discursive power struggle with non-state actors. More specifically, we argue that *collective* action of non-state actors can particularly trigger a state to engage in discursive power struggle with non-state actors with a view to re-assert its sovereignty over producers, rule-making and economic organization.

Given the different ways in which the IPOP was presented and framed internationally and domestically, we also recommend future research on how government officials from one state frame the same non-state governance initiative in domestic and international arenas. Possibly even more interesting would be to bring *states* back into GVC analysis and compare how governments at different ends of the same GVC frame non-state governance initiatives in their own domestic arena and in international arena's. As many West European governments have very much sympathized with non-state global governance for sustainable agriculture but governments from the South, like those of Indonesia, may be increasingly engaging in power dynamics with non-state actors over GVCs, this could be a very exciting avenue for research.

5. Between Zero-Deforestation and Zero-Tolerance from the State: Navigating Strategies of Palm Oil Companies of Indonesia[8]

Abstract

Since late 2013, Indonesia's biggest palm oil companies have positioned themselves as strong advocates of zero-deforestation. However, their zero-deforestation commitments have not always been well-received by the Indonesian government. The government has taken many initiatives to promote sustainable palm oil and end deforestation but prefers to do so on its own terms. The palm oil companies have had to organize and frame their zero-deforestation policies vis-a-vis the government strategically. Our research question is: how have major palm oil companies of Indonesia navigated their zero-deforestation commitment around Indonesian public authorities' regulatory power? Using the concept of corporate political activity, we distinguish three episodes of corporate zero-deforestation commitment, each characterized by different strategies of companies. We show that palm oil companies have changed the strategies of implementing their zero-deforestation policies from trying to influence government policy to operating in the shadow of hierarchy.

[8] Dermawan, A., Hospes, O., Termeer, C.J.A.M. 2022. Between zero-deforestation and zero-tolerance from the state: Navigating strategies of palm oil companies of Indonesia. Forest Policy and Economics 136: 102690.

5.1. Introduction

The role of business in the field of sustainable palm oil is highly controversial. On the one hand, palm oil companies have been qualified as the drivers of environmental and social problems associated with palm oil development (Obidzinski et al. 2012, Dhiaulhaq et al. 2014, Abram et al. 2017, Meijaard et al. 2020). On the other hand, the innovative role of business in developing new standards of sustainable palm oil through private or industry-wide collaboration has been widely acknowledged. The most well-known global private standard in the field is the Roundtable of Sustainable Palm Oil (RSPO), launched in 2004 with the active support of the palm oil business sector (Schouten and Glasbergen 2011, Pramudya et al. 2018). Some seven years later, the Government of Indonesia launched the national ISPO standard in 2011, which showed great similarity with the RSPO standard in terms of overall design, despite key differences in the acknowledgment of high conservation value forests, the implementation of free and prior informed consent, and the new planting procedures (Hospes 2014, UNDP 2016)

Early 2010s also saw the rise of several initiatives on sustainable palm oil with an emphasis on ending deforestation. These initiatives were taken by companies both at the upstream and downstream parts of the palm oil value chains. At the upstream, the Palm Oil Innovation Group (POIG) and Sustainable Palm Oil Manifesto (SPOM) were launched. At the downstream, large manufacturers initiated the Consumer Goods Forum (CGF) aimed at deforestation-free supply chains (Nesadurai 2017, Pirard et al. 2017, Rival 2017).

Since late 2013, palm oil companies have created another type of governance arrangement or regulation of sustainable palm oil: corporate self-regulation toward deforestation-free palm oil supply. Corporate self-regulation can be characterized as "voluntary commitments to comply with or exceed legal obligations" (Giannoumis 2014: 971). The self-regulation of the palm oil companies has two main characteristics: 1) the palm oil companies developed a new set of targets beyond compliance to public regulations and private standards; and 2) the companies set a specific timeline to reach these

targets. Wilmar, one of the largest palm oil companies in the world, became the first company to announce its no-deforestation policy.[9]

Interestingly, the biggest palm oil companies decided to get their act together: between 2014 and 2016, a group of six major palm oil companies, including Wilmar, created collective self-regulation called the Indonesian Palm Oil Pledge (IPOP). The IPOP aimed at producing palm oil that is free of deforestation, free of clearance of peatlands at all depth, and free of exploitation of communities by 2020. The scope of this pledge went beyond public regulation and private standards. The IPOP dissolved in 2016 due to negative sentiment and pressure from the Government of Indonesia: the government considered the IPOP as not compatible with antitrust law but more fundamentally as a threat to its sovereignty and the well-being of smallholders (Dermawan and Hospes, 2018b). After the demise of the IPOP, the companies proceeded working on zero-deforestation on an individual basis. Although each palm oil company uses different names and details, they share a commitment to deforestation-free palm oil production.

The IPOP stood out in comparison to the other initiatives towards deforestation-free palm oil in terms of its aim to align with government policy. The POIG and SPOM based their stringent commitments on the RSPO standard (Rival 2017). The palm oil companies that had launched the IPOP, explicitly stated that implementing their commitments would need formal support and linking to government regulation (IPOP 2014).

Several studies have implicitly characterized the relations and interactions between palm oil companies and the state (Gillespie 2012, McCarthy et al. 2012, Köhne 2014, Gnych et al. 2015, Dermawan and Hospes 2018b, Larsen et al. 2018, Pacheco et al. 2018, Pramudya et al. 2018). These studies acknowledge the agency of the companies; however, few empirical studies explore possible ways in which palm oil companies are making strategic maneuvers to navigate the

[9] The name of Wilmar's sustainability policy is "No Deforestation, No Peat, No Exploitation Policy" (NDPE). Of the six major palm oil companies, Wilmar is the only company that uses the NDPE name, although the scope of the sustainability policy of the other companies is similar.

demands from buyers and international NGOs on the one side, and those of the government on the other. To address this limitation, we use the concept of corporate political activity (CPA). This concept has commonly been used as a lens to look at the ways in which companies attempt to influence government policies to achieve favorable outcomes (Hillman et al. 2004). In our paper, we use CPA to explore the strategic maneuvering of the palm oil companies that attempt to implement their no-deforestation commitment without explicit acknowledgment or referencing to specific government policy and regulation. More specifically, we analyze the IPOP initiative and the rise of individual no-deforestation commitments as expressions of navigating strategies of business, that is: attempts of palm oil companies to anticipate or avoid adverse reactions from the government. For this purpose, we expand the characterization of CPA as a decision tree by highlighting the importance of interactions of companies with state and non-state actors as feedback mechanisms.

The IPOP and the individual corporate commitments before and after the IPOP have three characteristics in common. First, the IPOP and individual commitments go beyond value chain governance arrangements or interfirm coordination mechanisms, where the palm oil companies respond to the demands from the downstream actors, that is: consumer goods manufacturers and retailers. The commitments are responses to global public outcry against deforestation and the call of NGOs for palm oil supply that is free from deforestation, as articulated in the New York Declaration on Forests and Amsterdam Declaration (Dermawan and Hospes 2018b, Pacheco et al. 2018a). Second, with their collective and individual commitments, the companies claim to rectify limitations of both public regulation and private standards in stopping deforestation. As such, the commitments suggest that business want to take their corporate social responsibility (CSR) to the top of sustainability practices rather than the floor (Auld et al. 2008, Greenpeace 2013, Schleifer 2016, Suling 2016). Third, the no-deforestation commitments may challenge the interests of the GoI in developing the palm oil sector as a major driver for economic growth and rural development. For these reasons, the companies try to find ways to strategically position the IPOP and

individual corporate no-deforestation commitment vis-a-vis interests and regulatory powers of the government. Against this background, our research question is: how have the major palm oil companies of Indonesia strategically navigated their zero-deforestation policy around Indonesian public authorities' regulatory power?

The structure of the paper is as follows. Section 2 presents the different elements of the concept of CPA and how they relate to each other: the antecedents, the choice of participation level, and the selection of strategies. Section 3 outlines the research design, presenting the selection of palm oil companies, data collection methods, and analysis. Section 4 unfolds the case of CPA of the palm oil companies during the IPOP and post-IPOP periods. Section 5 offers a reflection on the meaning of navigation strategies for understanding business-government relationships and discusses some implications of our findings for the conceptualization of CPA.

5.2. Conceptual Framework

There is a wide acknowledgement and increasing attention to the ways in which companies conduct nonmarket strategies to achieve firm outcomes. A nonmarket strategy "…refers to a firm's concerted pattern of actions to improve its performance by managing the institutional or societal context of economic competition…" (Mellahi et al. 2015:144). Two conceptualizations of nonmarket strategies stand out: Corporate Political Activity (CPA) (Lawton et al. 2013, Mellahi et al. 2015) and strategic Corporate Social Responsibility (CSR) (John et al. 2015: 137-162). The two concepts are quite similar yet have distinctive qualities. CPA refers to efforts of companies to manage the influence of political institutions or to influence political actors toward outcomes that are favorable to the companies (Hillman et al. 2004). For instance, companies attempt to influence the government to adopt policies that reduce environmental uncertainty and transaction costs around operations (Wilts and Skippari 2007, Lawton et al. 2013). Strategic CSR refers to the actions of the companies, regardless of their motives, to enhance organizational performance by advancing social outcomes (Mellahi et al. 2015). CPA and strategic CSR can be closely related in practice, for example when companies use CSR as an instrument to

implement CPA to increase the chances of achieving firm outcomes (Lock and Seele 2017, Kamasak et al. 2019). However, much more than strategic CSR, the concept of CPA helps to systematically unpack and detail decision making processes of companies, which is the reason why we have favored this concept as our analytical lens. Scholars often use a decision tree to explain what CPA entails in terms of options and strategies of companies (Hillman and Hitt 1999, Hillman et al. 2004, Lawton et al. 2013). Companies need to manage external circumstances that directly or indirectly affect them. At the same time, these companies must leverage internal resources and capacities to deliver their missions (Mellahi et al. 2015). These external circumstances and internal capacities, called antecedents, refer to different types of drivers and contexts that constrain and enable CPA of companies, their options, and strategies. Hillman et al. (2004) and Lux et al. (2011) distinguish four types of antecedents: firm level, industry level, issue-specific, and institutional level.

The CPA concept links antecedents and outcomes through the choice of participation level and strategies (Figure 3). Given the antecedents, companies select the appropriate approaches to deliver their political strategies (D1). Companies may choose a transactional or a relational approach. For a transactional approach, the scope of the CPA is issue-specific, and the duration is short term. A relational approach involves many issues and is geared toward establishing long-term relationships. In terms of participation level (D2), companies may choose to implement political strategies either individually or collectively. The choice depends on several factors: 1) the resources that corporations can deploy; 2) the relative strength of the companies in the industry; and 3) issue salience (Hillman and Hitt 1999, Hillman et al. 2004), which refers to the issue's importance to a broad segment of stakeholders (Bonardi and Keim 2005).

The next stage of CPA involves the choice of political strategies: 1) information; 2) financial incentive; and 3) constituent-building. Under the information strategy, a company targets decision-makers by providing information (Dahan et al. 2013). A company carries out the financial incentive strategy, for example, by providing financial

resources to support its political agenda. Under the constituent-building strategy, a company targets decision-makers by building constituent support either vertically through supply chain networks or horizontally through allies that seek similar outcomes (Den Hond et al. 2014, Kingsley and Bergh 2015).

Kolk and Pinkse (2007) caution against applying the choice of political strategies on a widely discussed issue. They argue that any strategy to directly change the government's position on a publicly salient issue could put the companies at odds both with the government and other stakeholders. For a publicly salient issue, a company's information strategy can also be targeted at the opinion of experts and reporters, as these players are significantly contributing to the framing of the issue (Kolk and Pinkse 2007). The information strategy is then an attempt to reframe the issue at stake (Mialon and Mialon 2018).

The final part of the CPA model developed by Hillman and Hitt (1999) and Hillman et al. (2004) consists of policy and firm outcomes. They explain that companies conduct CPA to achieve a regulatory policy that is favorable to them (for instance, regulation on a particular issue) or provides them with a preferential treatment (such as tax discount for a specific company). However, we cannot assume a straightforward relationship between CPA and policy outcomes. Policy outcomes, those desired by the companies conducting CPA, may not be achievable through CPA but happen through something else. At the same time, companies conducting CPA may not achieve their policy outcomes due to the presence of political competition; other companies may perform CPA with opposing aims (Hadani et al. 2017).

Several CPA studies detail the implementation of single or combined political strategies and associated policy or firm outcomes (Mialon and Mialon 2018, Mbalyohere et al. 2017). However, these studies hardly provide insights on CPA implementation dynamics, particularly in two areas. First, there is a lack of analysis on changes of the participation level as a means for the companies to achieve their policy or firm outcomes. Companies may change the participation level with new antecedents that create new opportunities or challenges for their

political activity. Second, the CPA literature predominantly presents a unidirectional process that connects the antecedents, the participation level, the political strategies, and the outcomes.

As a result, there is hardly any analysis of feedback mechanism in the form of reactions from the government and other salient stakeholders. Our key contribution to the CPA framework on this point is that these reactions may become the new antecedents in the next period and so on. When the companies are faced with these new antecedents, while implementing political strategies, they may see the new antecedents as feedback mechanisms to their CPA, that is: new opportunities or challenges. Simultaneously, the feedback mechanisms can also affect the choice of participation level. Exploring feedback mechanisms can thus be a great added value to the CPA concept because this can shed light on the dynamics of political strategies and CPA at large (Figure 3). The concept of strategic flexibility, that is "the ability of a firm to adapt to changes in the external environment and make necessary organizational modifications quickly" (Kamasak et al., 2019:305) becomes important.

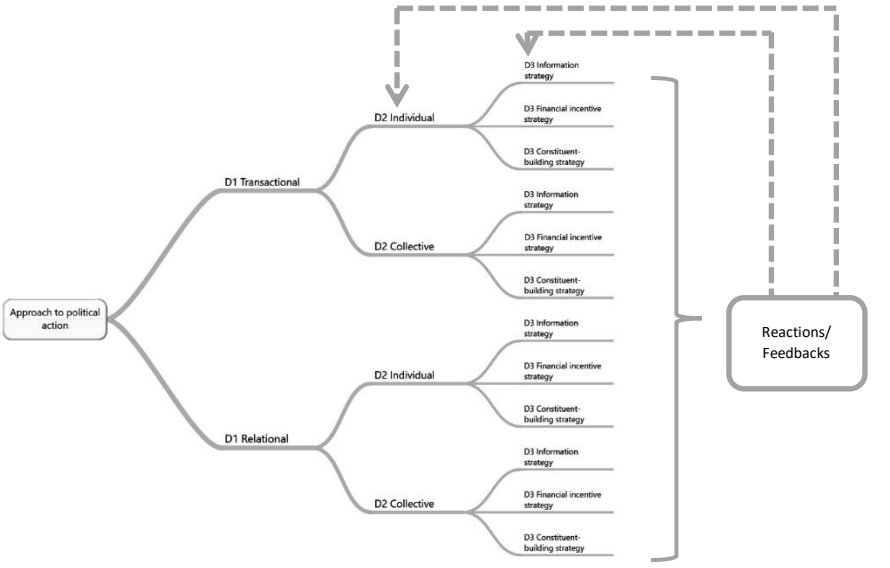

Figure 3. A CPA model (adapted from Hillman and Hitt, 1999)

5.3. Research Design

5.3.1. Research Context

The research focuses on six major palm oil companies in Indonesia: Asian Agri, Astra Agro Lestari, Cargill, Golden Agri Resources (GAR), Musim Mas, and Wilmar. Table 3 shows that these companies have direct control about only 10% of the oil palm area in Indonesia. However, they process 90% of the fresh fruit bunches of the oil palm in Indonesia into crude palm oil (Bisnis 2016). Half of the companies belong to the largest crude palm oil exporters of Indonesia: Wilmar, GAR, and Musim Mas. Besides exporting the palm oil of their groups, these companies are channeling exports of several other groups. Some of these companies have an international palm oil business presence. While Asian Agri and Astra Agro Lestari have all their mills and refineries in Indonesia, Cargill, GAR, Musim Mas, and Wilmar have their refineries in several countries. The six companies are key players in processing and exporting of palm oil as a global commodity.

Table 3. Land area under the control of the ex-IPOP companies

Company/Group	Own plantation (ha)	Plasma (ha)	Indonesia plantation area (percent)
Asian Agri	105,231	52,917	1.2
Astra Agro Lestari	285,000	66,000	2.7
Cargill	80,000	21,000	0.8
Golden Agri Resources	394,916	103,479	3.9
Musim Mas	117,344	4,624	0.9
Wilmar	154,374	35,799	1.5
Total			10.0

Sources: Asian Agri (2018); Astra Agro Lestari (2018); Cargill (2018); Golden Agri Resources (2018); Musim Mas (2018); Wilmar (2018)

While these large players control the palm oil processing industries, the palm oil sector very much depends on smallholders and workers. In Indonesia, approximately 1.5 million smallholders cultivate 40% of the total areas of oil palm. The sector also covers an estimated 4.1 million workers in the plantations (Pacheco et al. 2017).

5.3.2. Object and Periods of Study

The research is about the corporate commitments of six major palm oil groups between 2013 and 2019. We have divided this period into three

episodes. The first episode starts when the first company pledged zero-deforestation production in 2013, followed by three other companies before September 2014. The second episode is the period of the rise and fall of the Indonesian Palm Oil Pledge (IPOP). This collective commitment toward deforestation-free palm oil started in September 2014 and ended in June 2016. The third period is from 2016 till the end of data collection in 2019. In this post-IPOP period, the companies pursued their commitment on an individual basis.

The scope of corporate self-regulation is the commitment to produce palm oil free of deforestation, clearance of peatland, and exploitation of communities. This commitment is known as "no-deforestation, no-peatland, and no exploitation" (NDPE). The study focuses on the no-deforestation part of this corporate commitment. With this focus we do not want to suggest that ending of exploitation and cultivation on peatlands are less important or relevant than zero-deforestation. We have adopted this focus because it enables to better explore the continuity and change of CPA in the three episodes.

5.3.3. Source of Data

We obtained data from a variety of sources. First, we interviewed 24 respondents that consist of company officials, staff of government, NGOs, and smallholder associations. We conducted semi-structed interviews focusing on the companies' activities as part of implementing the zero-deforestation commitment, the response of other parties, the challenges that companies are facing, and the ways in which the companies respond to the challenges. Second, we organized or took part in three workshops in which different aspects of the zero-deforestation commitment were discussed (Annex 1). In these workshops, company representatives acted as presenters or discussants. These workshops highlighted latest developments in the palm oil sector and major activities and challenges of companies in implementing the zero-deforestation commitments. [10] Third, we drew on public reports of the six companies on NDPE policies, activities, and updates. Fourth, we examined NGO reports about the companies' conduct related to NDPE policies. Fifth, we selected media reports,

[10] Due to sensitivity and confidentiality issues, we anonymized the identity of the resource persons.

using a combination of keywords: palm oil/oil palm, deforestation, peatland, exploitation, and NDPE. The research was conducted as part of the first author's PhD research and his home institutional affiliation. The research has gone through internal ethical review. Clear agreement and consent were reached before the start of data collection through interviewing and workshops.

5.3.4. Data Analysis

We started the coding of the data by using key elements of the CPA decision tree: antecedents, participation level, and political strategies. For categorizing antecedents, we used the following four types of antecedents 1) firm-specific; 2) industry; 3) issue-specific; and 4) institutional (Lux et al. 2011). We sub-coded the data on the level of participation by using the three episodes: the periods before, during, and after the IPOP as individual and collective participation levels. We sub-coded the strategies by using information strategies, financial strategies, and constituent-building as specific categories (Hillman et al. 2004). Finally, we coded the reaction or response of stakeholders. We used Atlas.ti as the software to code and analyze the data.

5.4. Results

In this section, we present the palm oil companies' NDPE commitment as a CPA. Overall, the companies have adopted a transactional approach vis-a-vis the GoI. The indication of the transactional approach can be seen from the fact that palm oil business is part of holding companies that encompass multiple sectors (e.g. Koalisi Anti Mafia Hutan 2018, Pirard et al. 2020), giving them room to take their own position on specific policies. Another indication can also be seen from the recurrent disagreements between the palm oil companies and the GoI not affecting all their business.

For each episode, we continue by elaborating the antecedents, the level of participation and political strategies. We then discuss reactions of several salient stakeholders to the corporate actions.

5.4.1. Episode 1: Before the IPOP

Antecedents. The main antecedent in this period was quite *issue-specific:* the companies faced several accusations of palm oil as a major

driver of deforestation in Indonesia. For example, Greenpeace blamed the companies for their land-clearing practices and large deforestation footprints (Greenpeace, 2007, 2010). Greenpeace launched campaigns against the industrial buyers or manufacturers of consumer goods that use palm oil, such as Kellogg, Nestle, and Unilever (Greenpeace 2013, Johnson 2015). Other NGOs started similar campaigns. Nestle canceled the palm oil supply contract from Sinar Mas Group, the parent company of GAR (Tabacek 2010, Harvey 2011). As a result, GAR issued the Forest Conservation Policy (FCP) and the Social and Community Engagement Policy (SCEP) in 2011 (R27). At this time, the FCP policy focused on zero burning and no clearance on peatlands. After the issuance of the FCP, GAR collaborated with Greenpeace to develop the High Carbon Stock (HCS) approach. Other companies also negotiated with NGOs to source palm oil that was free of deforestation. After an intensive dialogue between Forest Heroes and the Tropical Forest Trust, Wilmar became the first company to make the NDPE commitment (Wilmar International 2013, Humber and Pakiam 2015, Johnson 2015).

Participation level. Each company announced its commitments *individually*. After Wilmar announced its no-deforestation policy, GAR upgraded its FCP in February 2014. The policy included palm oil produced, processed and traded by GAR (Butler 2014, GAR 2015). Cargill and Asian Agri issued sustainability policies in July 2014 and September 2014, respectively.

Strategies. In this period, these companies mainly deployed an *information strategy*. Before the announcement of the corporate no-deforestation commitment, only a few companies had formulated clear sustainability policies. Therefore, these companies did not gain trust from NGOs, and they found it hard to monitor companies' progress against the policies (R3, R15, R21). Once the companies issued the sustainability policies, they informed stakeholders about the scope of their no-deforestation commitment.

The companies also conducted a *constituent-building strategy*. At the time in which the companies were preparing the launch of the IPOP, some companies worked together with the Indonesian Chamber of

Commerce (ICC) and the Ministry of Economic Affairs to arrange and showcase the announcement of the zero-deforestation commitment (R1).

Reaction. NGOs supported the announcements of the no-deforestation commitments by the palm oil companies. For example, an Indonesian NGO assessed GAR's success in implementing the FCP in West Kalimantan in the two years following enactment of the commitment (Greenomics 2014). Similarly, Greenpeace remarked that GAR had made remarkable progress on developing the commitment. However, it also noted the company had several outstanding issues, such as free, prior, and informed consent and conflict resolution (Greenpeace 2014). At the same time, Greenomics (2014) noted a possible clash between the newly enacted Law 18 of 2014 on plantations and the scope of the zero-deforestation commitment. The Plantation Law requires palm oil concession holders to clear their plantable area within five years of obtaining permits.

5.4.2. Episode 2: IPOP, September 2014-June 2016

Antecedents. The *firm antecedents* appear when GAR expanded the scope of its FCP in February 2014 and later integrated FCP, SCEP and Yield Improvement Policy into GAR Social and Environmental Policy (GSEP) (GAR 2015). It stated that success depended on the involvement of other players. It cited communities, GoI, and other industry groups such as the Indonesian Palm Oil Producers Association (GAPKI). GAR hoped that other major producers in Indonesia and GAPKI would adopt HCS conservation policies by the time the next phase of its commitment was rolled out (Butler 2014). GAR statement indicates the desire towards *a collective effort* to achieve the scope of the FCP.

The *institutional antecedent* that brought the rise of the IPOP was the United Nations Climate Change Summit in New York in September 2014. As one of our respondents put it,

> There was a discussion between the Office of the Presidential Staff and the Coordinating Ministry of Economics on the evidence that the private sector in Indonesia is willing to

> change, to become sustainable… There is a momentum at the end of the [president] SBY in the New York Climate Change Summit. The Coordinating Ministry asked the Indonesian Chamber of Commerce to arrange so that an agreement could be made (R1)

The Summit presented an opportunity for palm oil producers to join forces. The companies were able to showcase to the world their endorsement of the New York Declaration on Forests (NYDF), which aimed to reduce deforestation by half in 2020 (Dermawan and Hospes, 2018a).

Participation level. Taking advantage of the global stage at the 2014 Climate Change Summit, these companies announced the IPOP (IPOP 2014, R1). By forming the IPOP, these companies changed the level of participation from the individual to the *collective*. Having issued its sustainability policy in December 2014, Musim Mas joined the IPOP in March 2015 (Musim Mas 2015a, Hayward et al. 2018). Astra Agro Lestari updated its sustainability policy in December 2015 before joining the IPOP in 2016 (IPOP 2016a). By forming a collective, "the IPOP was set up to achieve greater impact. If one company said it [the commitment], nobody would probably listen. But if five companies who have talked to each other said it, this could pressure other companies to follow suit" (R1).

Strategies. In this period, the companies carried out *information, financial, and constituent-building strategies*. The palm oil companies set up the IPOP management office to manage day-to-day activities. Meanwhile, each company communicated updates of its implementation of the commitment and responded to the NGOs' allegations, as shown in the companies' sustainability reports, progress updates, and grievance mechanisms (for example Cargill 2015a,b,c, Cargill 2016, GAR 2015, Musim Mas 2015b,c, Wilmar International 2014, 2015a,b, 2016). These companies collaborated with NGOs to develop infrastructure or technologies that could facilitate the companies in implementing and monitoring the commitment. For example, Musim Mas worked together with international environmental NGOs, like Proforest and Rainforest Alliance, and with

the policy research agency Daemeter, such to help implement the policy and to monitor and assess the performance (Hayward et al. 2017).

In terms of *financial strategy*, each member shared its resources to fund the IPOP management office. The management office functions as a communication hub and manages day-to-day implementation activities of the IPOP. The IPOP management office funded studies by the University of Indonesia and the Oil Palm Smallholder Union (SPKS) to better understand the characteristics of oil palm smallholders (R1, IPOP 2016a).

As one important *constituent-building strategy* in this period, the IPOP sought to increase membership (IPOP 2016a, R1). This effort indicates *horizontal* constituent-building: building constituency among the companies at the same level of value chains (Salim, 2014). The four founding members worked with the Indonesian Chamber of Commerce (KADIN) as another strategy to build constituency. They aimed to "…work with KADIN and other relevant stakeholders to engage the Government of Indonesia to encourage the development of policies and legal and regulatory frameworks that promote the implementation of the pledge…" (IPOP 2014). During this period, the initial IPOP members succeeded to bring in Musim Mas (The Jakarta Globe 2015) and Astra Agro Lestari (Mongabay 2016) as new members. At the same time, the initiators of IPOP also tried to engage with the GoI, as they realized that it would be difficult to implement the pledges without government support (Jacobson 2015, NAC 2016, R1).

Reaction. While NGOs were generally supportive of the IPOP and its programs, they remained critical of the companies' own activities. They often reported that companies or their suppliers violated the commitment (Rainforest Action Network 2014, Colchester et al. 2014, Forest Peoples Program, 2015, 2016, Greenomics 2015, 2016, Greenpeace 2015, AidEnvironment 2016). The companies spent much time verifying reports and monitoring progress (R1, R2, R18, R22, R25, R26, R27). Meanwhile, the RSPO introduced the components of the no-deforestation commitment in 2016 under RSPO Next, which was more advanced than the traditional RSPO standard (RSPO 2015).

At the same time, the companies and the IPOP management office faced another significant challenge in implementing their commitment. The GoI expressed strong opposition to the IPOP. For several reasons, the government qualified the IPOP as unwanted and even unconstitutional: first, the IPOP standard was higher than the one set by the government; second, IPOP could negatively impact smallholders due to the monopsonist power of the IPOP to control the domestic palm oil supply; third, IPOP could form a threat to national sovereignty by bringing in a foreign agenda (Pirard et al. 2017, Dermawan and Hospes 2018b, Pramudya et al. 2018). One respondent said that "the government reactions came sequentially, which means we had to become a firefighter at different places all the time" (R1).

When the National Antimonopoly Commission threatened to charge hefty penalties to the IPOP members (NAC 2016), the IPOP dismantled itself in June 2016. The IPOP management office and the companies had realized that the reactions of the government and the dim prospect of huge penalties were too much to bear (R1, Pirard et al. 2017). At the same time, the companies and the IPOP management office saw that the government did show a commitment to improve the ISPO, which was seen as a small win by the palm oil companies. Therefore, the companies decided to take their loss but also to continue their commitments *individually*.

5.4.3. Episode 3: After the IPOP (July 2016 - 2019)

Antecedents. The dominant antecedents were *industry-related* and *institutional.* At the industry level, international buyers and the European Union governments still wanted deforestation-free palm oil, which drove companies to maintain their commitment despite the disbandment of the IPOP. In addition, in 2018 the RSPO improved their principles and criteria of sustainable palm oil by including no-deforestation into the general standards; it had initially placed the no-deforestation in its higher-grade standard called RSPO Next (R9).

Meanwhile, the adverse reaction of the GoI toward the IPOP provided an important lesson for the companies. The companies realized they could face criticism from the government even when they aimed for higher standards. As such, when the companies dissolved the IPOP,

they expressed their appreciation to the government for its considerable effort to transform the palm oil industry toward sustainability. At the same time, they did not change their commitment but turned it into an individual one (IPOP 2016b). In hindsight, it is interesting to note that the IPOP did not mention the importance of the leadership of the national government. Instead, the IPOP emphasized the important role of local government to work with smallholders and to collaborate with stakeholders at the landscape level (IPOP 2016a).

Participation level. After the demise of the IPOP, the companies maintained the implementation of their no-deforestation commitment individually. For example, a statement from Wilmar says that "…Wilmar will follow through with all our sustainability commitments as stipulated in our No Deforestation, No Peat and No Exploitation Policy…" (IPOP 2016a). The others announced their intention to uphold the commitment right after the termination of the IPOP (Vit 2016).

Strategies. In this period, these companies employed information, financial, and constituent-building strategies. Since these companies maintained their commitment, a major *information strategy* has been to reframe the commitment. The companies did not any longer speak of "no-deforestation" but used a new acronym as their message: NDPE, which means "no deforestation, no peatland, no exploitation". Except for Wilmar, which was the first to use the term NDPE, all companies used the term after 2016 (Table 4). We searched the term "NDPE" in the national media in the period 2014-2019 and found 35 articles from 23 media outlets. The term "NDPE" only started to appear in 2017 (Annex 2). The increasing use of the term NDPE might signal the distancing of the companies from the IPOP. Another explanation could be related to the rise of peatland restoration as a key issue at the agenda of the GoI.

Table 4. The frequency of "NDPE" mentions in the corporate documents, 2016-2020

Companies	Frequency
Asian Agri	4
Astra Agro Lestari	14
Cargill	5

Golden Agri Resources	3
Musim Mas	35
Wilmar International	392

Source: company websites

The companies engaged with experts to support their commitments. Cargill, GAR, Musim Mas, and Wilmar started to collaborate with the World Resources Institute and Wageningen University to develop radar technology to monitor deforestation (WRI, 2019). Astra Agro Lestari subscribed to the service provided by Global Forest Watch to help the company identify land cover change within its concessions (R27). There were concerns about the efficacy of satellite imageries to detect deforestation, highlighting the critical role of ground-truthing (R27). Each company maintained the publication of the zero-burning policy and provided updates of fire occurrences on or near their concessions (R25, R26, R27). The companies used online communication channels such as websites and social media. However, according to district government staff, some companies did not communicate their progress to district-level stakeholders (R8, R19). Direct communication on the progress of the commitment with stakeholders at the provincial level was rare (R5, R6, R16, R20, R24). As an officer from the Plantation Office said it "…they only come to us to arrange permits or when there is problem" (R24).

In terms of *financial strategy*, these companies used their financial resources to fund programs or activities that would eventually support implementation of the commitment. Internally, companies invested in the training of their staff to understand the no-deforestation policy and its implementation plans. They also invested in the procurement of tools and equipment, such as drones, to verify deforestation detected by the satellite (R27). Externally, each company provided financial support to the villages around their concessions to develop and implement a village-based fire prevention system. These companies offered training to the villagers for fire preparedness. They invested in activities that improve the livelihoods of the communities around their concessions (R26, R27).

In terms of *constituent-building* strategy, the companies introduced the no-deforestation policy to suppliers and persuaded them to formulate and align their policies. To do this, the companies engaged suppliers and integrated the no-deforestation policy into the contract purchase. In another strategy, they drew on NGO reports about the poor conduct of suppliers to re-evaluate contracts and to demand suppliers follow the companies' policy.

Due to the requirements of the Plantation Law, the companies were not really afraid that the government might take those parts of their cultivated land set aside as High Conservation Value (HCV) or HCS areas. This Plantation Law requires that any company that has a permit must plant areas that are technically plantable. Of much greater concern to the companies, were the encroachments by the local communities of the HCV and HCS areas on their concessions (Annex 1, R2, R3, R27). As one company representative put it:

> [the company] …has the policy to protect HCV, HCS and peatlands, and we have implemented this policy on the ground. The communities see the area as being abandoned, which leads to land occupation (R2).

These companies still hope that one day, NDPE policies would have some legal support. However, they acknowledged that this might take some time to happen. As such, the companies put a lot of energy on *vertical* constituent-building by engaging suppliers to follow the NDPE policies (R27). In addition, they actively participated in provincial-level discussions to support regulations that would introduce the concept of HCV. One example is the formulation of a provincial regulation on sustainable plantation management in East Kalimantan (R10, R20, R22).

Reaction. When the six palm oil companies terminated the IPOP, Greenpeace released the following statement (Greenpeace 2016):

> IPOP's 'no deforestation' standards help Indonesian companies supply the world with palm oil that does not harm people or the environment. Without these standards, Indonesia risks losing business to other countries in the

> region. Yet, instead of applauding and promoting this sensible private sector initiative, government officials have bullied and threatened IPOP members.

The statement is interesting because of Greenpeace's strong critiques of the palm oil industry, including some individual IPOP members (Greenpeace 2018a,b). After the IPOP was terminated and the companies continued their commitment individually, Greenpeace did not change its strong critiques of the industry. Other NGOs, such as Forest Peoples Program and Mighty Earth, continued reporting cases related to the operation of the palm oil companies, their subsidiaries, or their suppliers (cf. Forest Peoples Program 2017, 2018a, 2018b, Mighty Earth 2017, 2018, 2019).

Meanwhile, after the GoI forced the IPOP to shut down, it did not react negatively after companies announced they would maintain their individual commitments. The government focused on formulating regulations with potential to promote better practices in the palm oil sector. The government issued these policies during or after the IPOP periods. Some notable policies are the Government Regulation (GR) 57 of 2016 on peatland ecosystems that is more protective toward peatland protection than its predecessor GR 71 of 2014. The Presidential Regulation issued three Instructions between 2018 and 2019 with the following purposes: 1) to suspend and evaluate oil palm permits (No. 8 of 2018); 2) to stop issuance of new oil palm plantation permits (No. 5 of 2019); 3) to enact the national action plan of the sustainable oil palm plantation (No. 6 of 2019); and 4) to issue the revised ISPO (Presidential Regulation 44 of 2020). The palm oil companies were involved in the consultation or preparation of some regulations prior to their issuance (R27).

5.5. Discussion

Our analysis of the three episodes of zero-deforestation commitment shows why and how large palm oil companies have changed their zero-deforestation policies from an individual commitment to a collective commitment, and back again to an individual one. Criticism of international NGOs blaming the large palm oil companies to deforest Indonesia, triggered the companies to develop individual

commitments to zero-deforestation. Grasping the opportunity of the Climate Change Summit at New York in 2014, the palm oil companies changed their CPA in terms of level of participation by establishing a collective commitment under the IPOP and jointly seeking collaboration with the Government of Indonesia. However, when the GoI started to disqualify the IPOP, the palm oil companies had to adjust their CPA. Not to further upset the government, they switched from a collective commitment to individual commitments, disbanding the IPOP. They also began to actively use the term of NDPE instead of zero-deforestation. Table 5 summarizes the CPA of the palm oil companies in Indonesia since the early 2010s.

Table 5. The political activity of palm oil companies implementing NDPE in Indonesia

Period	Antecedents	Level of participation	Political strategy	Outcome/reaction
2011-2014	NGO complaints on deforestation, peatland clearance, and exploitation of communities	Individual (pre-IPOP)	*Information*: response to the complaints *Financial*: not visible *Constituent-building*: not visible	No major policy outcomes Companies made a collective pledge NGO engagement
2014-2016	NGO engagement Private regulation less beneficial New York Climate Change Summit produced NYDF	Collective (IPOP)	*Information*: informing government, other companies, and NGOs about IPOP, organizing workshops *Financial*: funding the secretariat, funding research on smallholders *Constituent-building*: attracting additional IPOP members	No major policy changes Strong government opposition NGO support for deforestation-free palm oil
2016-	Strong government opposition to the IPOP NGO support for deforestation-free palm oil	Individual (post-IPOP)	*Information*: reframing no-deforestation to NDPE, regular updates on the implementation *Financial*: acquiring better technology to detect deforestation *Constituent-building*: convincing suppliers to adopt NDPE commitment	Policy changes on peatland protection, stopping new oil palm plantation permit, an action plan on sustainable palm oil Increased budget for replanting for smallholders NGOs supporting the commitment No strong opposition from the government

Source: Authors

Using CPA as a lens, our analysis provides another layer in the debate on the success or failure of different organizational and regulatory initiatives of business to address zero-deforestation. A key antecedent of CPA and herewith the form or level of participation of CPA, is the reaction from the government to organizational and regulatory initiatives of business. The form or level of participation that a corporate commitment to zero deforestation takes cannot be sustained when this form or level of participation triggers zero tolerance from the government. One reason could be the stronger presence of participants with opposing the policy agenda in the political marketplace (Keim 2008, Hadani et al. 2017). However, as described in the IPOP and post-IPOP periods, the case shows that CPA does not always aim toward favorable policy outcomes (Hadani et al. 2017). We found that CPA can also be about avoiding negative reactions from the government. In this sense, the companies seek to operate in the shadow of hierarchy.

Our analysis of how companies strategically navigated their zero-deforestation policy around Indonesian public authorities' regulatory power offers an interesting contribution to political economy analysis of the palm oil sector, that in one way or another point at the collusion of interests of business and government with regard to the palm oil sector. In this vein, Choiruzzad (2020) has de-mystified to concept of "national interest", arguing that there is nothing like a "national interest" when the government is using this term. In his view, the term of national interest obscures that the government is basically serving the economic interests of the companies as a sub-set of interests (Choiruzzad 2020:18). Though we would not like to disagree with Choiruzzad and others (cf. Varkkey 2012, Cramb and McCarthy 2016, Warburton 2017, Majdi 2021) on the common interests of business and the government with regards to the palm oil industry, our analysis suggests that business can neither be assumed to fully control the government nor to be puppets on the string of the government. When it comes to zero-deforestation, there is something like a sound tension between the palm oil companies and the government. This has certainly to do with other important antecedents or drivers of zero-

deforestation commitment of palm oil companies: claims and reports of international NGOs.

Though the CPA model has been very useful to generate insights into the navigation strategies of palm oil companies committed to zero-deforestation, based on our findings and former discussion, we do think four adjustments of the CPA model (Hillman et al., 2004) are worthwhile considering: First, the case shows the need to make interactions in the CPA model more explicit, especially in a dynamic setting. CPA is inherently interactive, and that reactions to the political activity could create opportunities or challenges for the CPA. Therefore, the "mediating factors" (e.g. Mellahi et al. 2015, Hadani et al., 2017) that link political strategies and outcomes, as well as the concept of strategic flexibility (Kamasak et al. 2019) should include the interactions that take place during the CPA.

Second, it has been well-understood that the CPA is about the relationship between companies and the government. We have shown that the relationship goes beyond business-government interactions, but also involve NGOs. Business actors should therefore consider the consequences of their political strategies on the government *and* NGOs. They carry out CPA by strategically navigating their activities to achieve outcomes that go beyond the favorable government policies, but also to achieve positive responses from NGOs.

Finally, the change of the messaging of the commitment from no-deforestation to NDPE clearly suggests that reframing can be a critical information strategy (Mialon and Mialon 2018, Vandenbrink et al. 2020). Reframing can be an important way for companies to manage a positive image (Sillince and Mueller 2007), showing their good intentions to the international community and not upsetting their own government.

5.6. Conclusion

Our first main finding is that large palm oil companies strategically change and adapt their CPA in terms of participation level and political strategies in reaction to government responses to their zero-deforestation policies Our analysis of the changing CPA from the

period before the IPOP to the period of IPOP (2014-2016) and the period after IPOP, particularly shows the following: large palm oil companies want to be leading, or at least give this impression, in stopping deforestation, and they want to trigger the government to go that extra mile in zero-deforestation policies. At the same time, when there is a high risk of an adverse reaction from the government considering their zero-deforestation policies as unwanted and even unconstitutional, they adapt their CPA: disbanding the IPOP, the participation level changed from collective to individual one and their zero-deforestation policies were reframed into NDPE. Companies do not want to challenge the regulatory power and policies of the government too much. A bottom-line is that the companies want to gain trust and confidence from the government.

However, the overall parameters of the zero-deforestation policies of palm oil companies are not only set by the Government of Indonesia and its responses that have prompted these companies to adapt their CPA. Our second main finding is that international NGOs have played a key role in triggering zero-deforestation commitments of large palm oil companies and in monitoring their performance. This means that analysis of CPA in terms of business-government interactions is too limited. We need to broaden CPA as a theoretical lens to study how reports and claims of these other salient stakeholders form triggers and feedbacks for zero-deforestation policies of
large palm oil companies.

6. Turning threats into opportunities: An analysis of the response of palm oil companies implementing no-deforestation commitment to NGO complaints[11]

Abstract

Since the early 2010s, major palm oil companies have committed themselves to producing and trading palm oil with "No deforestation, no Peatland, and no Exploitation" (NDPE). Nongovernmental organizations (NGOs) are generally supportive of this commitment. However, they remain critically monitoring whether and how the companies implement their commitment and have actually shared complaints with the companies. The paper aims to answer the following question: how do palm oil companies with NDPE commitments respond to the complaints of the NGOs? For this purpose, we used the concept of Corporate Political Activity (CPA). We analyzed 194 complaints of NGOs addressed to four major palm oil companies from 2014 to 2019. The NGOs do not only complaint against the companies or their subsidiaries but also the suppliers and linked companies. We found that the palm oil companies conduct information strategies to clarify the complaints and then to dismiss them or communicate their solutions. At the same time and regardless of the companies' response, they use the information to engage the suppliers and linked companies to adopt their NDPE policy, or in CPA terms: to build constituency. We conclude that that the companies use information and constituent-building strategies to both navigate around complaints of NGOs and strengthen their supply base to comply with their NDPE commitment.

[11] Paper submitted and presented at the XV World Forestry Congress, May 3, 2022. https://programme.wfc2021korea.org/en/session/54bc8b12-ef92-ec11-a507-a04a5e7d20d9

6.1. Introduction

Palm oil is one of the most debated crops in international discussion on sustainable food and agriculture On the one hand, palm oil is applauded as the world's leading vegetable oil due to its productivity and versatility (Meijaard et al. 2018). Palm oil consumption reached 33% of the world's vegetable oil consumption in 2019 (Shahbandeh 2022). At the same time, policymakers, academics, and NGOs, particularly from the North, have raised concerns that the crop has several negative ecological footprints, from deforestation, clearance of peatlands, labor conditions, and exploitation of communities (European Parliament 2018, Human Rights Watch 2021, Busch et al. 2022).

Over the last decade, there have been several attempts towards reducing negative footprints through regulatory efforts and introducing new agronomic practices. For instance, global food companies and international NGOs introduced sustainability certification through the RSPO as a market-based mechanism to contribute to sustainable palm oil production and trade (Brandi et al. 2015, Efeca 2016). Afterwards, national mandatory approaches have been adopted by Indonesia and Malaysia as the world's largest palm oil producers (Hospes 2014, Hidayat et al. 2017). A more recent development has been the commitment of palm oil companies to produce palm oil free of deforestation, peatland clearance, and exploitation of communities.

The no-deforestation commitment has resulted from intensive engagements between non-governmental organizations (NGOs) and the palm oil companies. In Indonesia, the corporate no-deforestation commitment has gone through several episodes involving individual commitments (through the companies' sustainability policies) and collective (through initiatives such as the Indonesia Palm Oil Pledge – IPOP). The corporate commitment received a positive reaction as both NGOs and the companies have the same interest: eliminating deforestation. At the same time, the NGOs remain the companies'

watchdog, monitoring the implementation of the commitment at the concession level.

Recent remote sensing technologies have allowed for real-time and more accurate forest or land cover changes that indicate land clearing (Hadi et al. 2018, Sarzynski et al. 2020, Gaveau et al. 2022). However, a major and complex challenge is not solved by these technologies: the attribution for the land clearing to the responsible parties. Who are the perpetrators, what is the name of the concession where land clearing takes place, who is the owner of the concession, and through which value chain does the oil palm that is harvested in the concession, flow? In addition, the proximity of the mills and refineries and Indonesia's archipelagic character result in complex palm oil supply chains. Getting clarity over these issues is a big challenge because palm oil value chains involve large companies with complex ownership and supply chain structures. To illustrate, in Indonesia, there are 2,511 palm oil companies (BPS 2021) owned by over 50 company groups that produce palm oil (CDMI 2017).

Against this background, we want to answer the following research question: how do the palm oil companies implementing zero deforestation commitment respond to the complaints of the NGOs? To this end, we developed a process approach to the Corporate Political Activity (CPA) and stakeholder theory. Using these concepts as analytical tools, we have reconstructed how palm oil companies respond to NGOs' complaints with regard to the implementation of zero-deforestation commitments.

The paper contributes to studies of nonmarket strategy (Mellahi et al. 2015, Wrona and Sinzig 2018, Sun et al. 2021) in four ways. First, we would like to show the important role that corporate ownership and supply chain configuration play in achieving policy or firm outcomes in implementing the CPA. Ownership structure influences the capacity of a company to exercise its political strategies (cf. Ozer and Alakent 2013). Similarly, supply chain configuration affects the ability

to build a constituency to achieve desirable firm outcomes (Stock et al. 2010).

Second, we would like to show that the business and NGOs' interaction goes beyond the companies as a single and homogenous unit. Several studies assume a categorization of company ownership at a larger scale, such as ownership by the government, private, or a mix of two. Furthermore, when studies focus on subsidiaries' activity, they treat the subsidiary as a single unit without much analysis on their relationship with the parent companies or other subsidiaries. Through this study, we would like to show the way the companies utilize ownership structure in dealing with unfavorable outcomes.

Third, it is essential to note that the interactions between the companies and NGOs have been taking place since long before the NDPE commitment (Nikoloyuk et al. 2009, van Huijstee and Glasbergen 2010, Khor 2011, Schouten and Glasbergen 2011). However, the interactions between the companies and the NGOs on the complaints have become increasingly important, particularly since the NGOs and companies share the same interest: eliminating deforestation, peatlands clearance, and exploitation of communities.

Finally, contrary to a small number of companies in several case studies, this study looks at over 200 cases of NGOs' complaints against the companies' conduct. The numerous cases enable us to see the companies' response to the complaints and the constituency-building strategies they carry out towards achieving their no-deforestation commitment.

The structure of the paper is as follows. Section 2 discusses the theoretical framework that builds on the stakeholder theory and CPA. Next, we present the methodological approach for the study in Section 3. Then, in Section 4, we highlight several significant results of the process by which the companies navigate the NGOs' complaints. Finally, we discuss the implications of the findings and draw some theoretical and empirical conclusions in Sections 5 and 6.

6.2. Theoretical framework

We focus on the interaction between the companies and NGOs with regard to the NGOs' complaints of implementing zero deforestation commitment. Specifically, we analyze how the companies respond and try to navigate around the complaints of NGOs related to the companies' implementation of the zero-deforestation commitment. The companies publicly commit to achieving zero deforestation. At the same time, companies do not like negative publicities. However, NGOs do not take the companies' commitment for granted and maintain their roles as watchdogs. As such, even when the NGOs share the agenda of the deforestation-free palm oil production, they remain critical of the possibilities that the companies may violate their commitment.

There has been increasing attention on NGOs' role as a driver of companies' behavioral change. The behavioral change may increase acceptance by the buyers that could increase the companies' reputation. The interaction between an NGO and a palm oil company depends on the stakeholder context, which determines the degree of collaboration between the NGO and the corporation as well as the opportunity to change corporate social responsibility practice. Meanwhile, the outcome of interactions between the companies and the NGOs can influence the companies' interaction with other stakeholders (van Huijstee and Glasbergen 2010).

To study the response of companies to complaints of NGOs and more generally interactions between the companies and NGOs to achieve firm outcomes, CPA is a useful theoretical lens. CPA has primarily been used to describe and explain the companies' efforts towards influencing favorable policy outcomes as the primary focus (e.g. Hillman et al. 2004). At the same time, the companies conduct CPA to develop competitiveness advantages, such as legitimacy (social license to operate), getting their products accepted in sensitive markets, and maintaining the reputation that depends on the NGOs' acceptance of the companies' practices. Studies on CPA mainly focus on the relation

between the companies and policymakers. However, we argue that when applied in a dynamic setting, the CPA concept can also be used to analyze interactions of companies with different types of actors (Dermawan et al. 2022). For example, companies may build relationships with non-state stakeholders to build constituency on the promoted issue and to influence policymakers (e.g. Kolk and Pinkse 2007).

Unlike previous studies, we conceptualize CPA and corporate response repertoires as a process. The complaints from the NGOs and the process that the companies take to resolve them are dynamic and interactive, which means that one-off categorization of response is not helpful. The response to the NGOs complaint is interactive involving related companies, NGOs and the involvement of third parties (such as consulting companies). As such, the NGOs' complaints and the companies' responses are best approached as a process consisting of different stages (Figure 4).

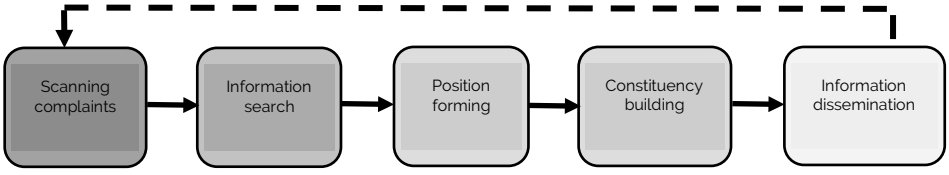

Figure 4. A process approach to corporate response to NGOs' complaints

The first stage of the process involves *scanning*. In this stage, the companies actively scan any information about possible events that may create negative public image about the companies' zero-deforestation commitment, including NGO complaints.

The second stage is *information search*. Once the companies receive the complaints, the companies start searching for information to get a clearer or more comprehensive understanding of the complaints.

The third stage is *position forming*. After the companies have some clarity on the information, they develop an initial response. At this stage, the companies consider different types of response, different types of involvement (individual-joint participation), and various political strategies (Hillman and Hitt 1999, Hillman et al., 2004). We used the categorization of Balsiger (2014) to understand companies' strategies in dealing with the NGOs' complaints. Balsiger (2014) distinguishes six types of response to the complaints: Avoidance (non-reaction, denial); Acquiescence (collaborate with the NGOs); Compromise (negotiations, compensations); Sidestepping (reputation management); Confrontation (campaigns, legal action); and Prevention (media monitoring, research).

The fourth and fifth stages both refer to implementation of *political strategies:* constituency building and information strategies. Constituency-building strategy refers to efforts to gain support from other companies, whereas information strategy refers information dissemination or sharing. For this paper, we focus on information and constituent building strategies for three reasons. First, companies need to build a constituency. The focus of the constituency building is not to gain NGOs' support because NGOs will continue as watchdogs. Instead, the companies' focus is to build constituencies along the supply chains to persuade the suppliers to adopt zero deforestation commitment. Second, building the NGOs' trust requires the companies to conduct the remedies and inform the NGOs of their progress. Put differently, the companies need to be more transparent in the problems at hand and their response. Hiding the issue or their answers will not help the companies gain trust. Third, focusing on financial strategies, such as paying lobbyists to deny the complaints, could backfire as the NGOs will distrust the companies.

We use the concept of 'navigation' to capture the companies' responses. In its primary meaning, navigation refers to determining position, course, and distance to move from one point to another. Navigation implies monitoring these and controlling the movement

(Montello 2005:257). Bringing this metaphorical notion to study the response of the corporation to the complaints of the NGO, the corporation moves from a current point or position to a desirable end, for example, to become a sustainable and competitive corporation. In between, the corporation is trying to control its movement, certainly when it sees barriers on its way. The corporation can see NGOs' complaints as one of the barriers. Therefore, the way in which the corporation responds to the complaints to reach the desired position can be seen as an act of navigating. Introducing the concept of navigation is relevant for several reasons. First, it represents a variety of corporate proactive and reactive moves towards NGO complaints. Second, it encompasses various responses towards handling the complaint (cf. Kneip 2013 and Balsiger 2014). Under the CPA framework, we conceptualize the navigation in the form of the companies' response to the NGOs' complaints (Balsiger 2014) and by strategically selecting the level of participation and the political strategies (Hillman and Hitt 1999, Hillman et al. 2004)

6.3. Method

6.3.1. Context

The context of the paper is the commitment by some of the largest palm oil company groups in Indonesia to produce palm oil free of deforestation, peatland clearance, and exploitation of communities. Since late 2013, major palm oil companies have made a commitment known as NDPE. Wilmar International was the first company that used the term in December 2013. In September 2014, four major groups with individual NDPE policies set up a collective commitment under the Indonesian Palm Oil Pledge (IPOP). The IPOP ran until June 2016 due to an adverse reaction of the Indonesian government. After the termination of the IPOP, the companies continued with the NDPE commitment individually.

6.3.2. Definitions

Through our research, we realized we had to make a distinction between companies that present and implement the NDPE commitment on the one hand and companies mentioned by the NGOs in their complaints on the other. When we use the term "company/companies", we refer to the palm oil companies implementing NDPE individually. These companies were part of the IPOP (see Dermawan et al. 2022). We use the term "entities" to refer to the companies being complained about by the NGOs.

We focus on the complaints made by the NGO against the alleged breach of the companies' no-deforestation commitment. The scope of issues classified as deforestation follows the range of the commitment. Although each company's wording on the no-deforestation differs, they share three common areas (Table 6). First, no-deforestation means clearing regions classified as High Conservation Value Forests (HCVF) and High Carbon Stock (HCS). Second, the companies will conduct good forest management and avoid biodiversity loss. Third, the companies will avoid using fires and reduce greenhouse gas emissions. The no-deforestation commitment is applicable for all subsidiaries and suppliers regardless of their geographical location.

Table 6. Scope of the no-deforestation commitment of several palm oil companies

Companies	No Deforestation commitment
Asian Agri	Adopt high carbon stock (HCS) approach Conserve high conservation value (HCV) areas Identify sources of greenhouse gas (GHG) emission Adopt a zero-burning policy.
Astra Agro Lestari	No development on HCS forests No development on HCV areas No burning Reduce GHG emissions from plantations.
Cargill	Protect HCV areas and HCS forests.
GAR	Protect forests that include HCS and HCV Manage forests and halt biodiversity loss.
Musim Mas	No use of fire during new development No development in primary forest identified as HCV or HCS Do not plant on steep land.

Wilmar	Do not develop in HCS forest and HCV areas Do not burn Gradually reduce GHG emissions in ongoing operations.

Sources: authors' compilation

6.3.3. Data collection

We collected the data from the grievance list on the companies' websites. We collected the data between January 2019 until January 2020. The website contains the following information: 1) name of the entity; 2) name of the entity's parent company; 3) the relation between the company and the entity; 4) the nature of the problem; 4) the source of information; 6) the location where the issue takes place; 7) the latest status on the complaint, and 8) detailed responses by the companies.

The information may be one-sided as it comes from the companies. However, the websites did not only include the response of a company to complaints of NGOs but also the complaints themselves. Therefore, we could cross-check the companies' responses to the corresponding NGOs' complaints.

6.3.4. Data analysis

We tabulated the data to develop summary tables. The companies' responses elaborate the process from understanding the complaints, preparing the response, and resolving the complaints. We coded the answers to capture statements that indicate the presence of information searching, individual versus joint resolution of the complaints, constituency-building, and the involvement of third-party and public sector agencies in the cases.

6.4. Results

The companies' no-deforestation commitment is applicable through their whole supply chain in all places, not just in Indonesia. Therefore, although most of the companies subject to the complaints are in Indonesia, the NGO complaints also apply globally. Of 212 deforestation-related complaints, 185 cases are relevant to the companies located in Indonesia (Table 7). Since there is no sufficient

detailed data on Asian Agri and Astra Agro Lestari, we did not include them in the subsequent analysis.

Table 7. Number of deforestation complaints according to the companies and the countries

	Indonesia	Malaysia	Others	Total
Asian Agri	NA	NA	NA	NA
Astra Agro Lestari	18	NA	NA	18
Cargill	58	15	3	76
Golden Agri Resources	55	1	NA	56
Musim Mas	26	4	NA	30
Wilmar	28	2	2	32
Total	185	22	5	212

Source: authors' database. NA: not available.

6.4.1. Scanning

The companies receive information about the complaints from three primary sources (Table 8). The first source is the reports from international and national NGOs. Examples of global NGOs are Mighty Earth, Greenpeace, Rainforest Action Network, while Greenomics and Eyes of the Forest are national NGOs. Most of the cases come from these reports. These NGOs signal their complaints on the entities' activities through their publications. In these reports, the NGOs present the problems (deforestation, land clearing, fires, etc.) of the entities' ownership and supply chain structure. For example, Mighty Earth publishes a series called "Mighty Earth Rapid Response," highlighting the entities' activities that may imply breaking the companies' no-deforestation commitment. In some publications, the NGOs asked for clarifications before publishing them (e.g. Greenpeace 2018). In addition, NGOs like Forest Peoples' Program often engage with the companies through direct communications.

Table 8. Source of the complaints

Actor group	Number
International and national NGOs	228
Media reports	8
Corporate monitoring, customer, and suppliers	14
Others	5

Source: authors' data base.

Note: the total number shown in this table (255) is higher than the total number of cases under review. In many instances, the complaints came from multiple sources.

Some examples of the companies' statements acknowledging the NGO reports are as follows:

> "Cargill was alerted to deforestation allegations through *RAN's Leuser Watch platform* of PT Laot Bangko"
>
> "*Mighty Earth Rapid Response Report No. 1*: 4 companies alleged to have carried out deforestation: PT Bintuni Agro Prima Perkasa, PT Guntur Madu Agrotama,PT Kahayan Agro Plantation, PT Mustika Agung Sentosa. Raw materials from at least one of these companies allegedly entering GAR supply chain. Mentioned in Greenpeace's report "Final Countdown" on 19/9/18." (cf. Mighty Earth 2017).
>
> "*Mighty Earth Rapid Response Report No. 18.* The report alleges that there was deforestation of 65 hectares by PT Kurun Sumber Rezeki (PT KSR) between February 20 - July 08 2019. The report states that PT KSR is a joint venture between Jhonlin Group and CB Industrial Product Holding Bhd, (CBIP Group). The report alleges that the joint venture is related to Solar Green Sdn Bhd and Group Kris Sdn Bhd, with CBIP Group and Tradewinds Plantation Bhd… The report indicates that Trans Kenyaland Sdn Bhd developed 94 hectares of peat forest from 22 November 2018 - 09 July 2019." (cf. Mighty Earth 2019)
>
> "PT GAN has been clearing in the Kubu Raya district of West Kalimantan since at least 2013. Since 2014 the company has cleared over 7,000ha of forest and peatland. Between 3

> December 2015 and 28 July 2018, PT APM cleared some 3,290ha of forest. Forest clearing has continued in 2018" (cf. Greenpeace 2018).

The second source is media reports. The companies obtain information from local, national, and international media. Mongabay, a news outlet focusing on environmental issues, is an example of global media. Forest Hints is an example of a national press. The media reports generally focus on the subject without elaborating the companies' ownership and supply chain structures.

> "Cargill raised the matter with our direct suppliers *based on local media reports* and NGO report. Our direct suppliers have met with the company and are verifying details of the allegation. While the process is ongoing, a moratorium has been put in place."

> "*Media reports* alleged PT APSL carried out land clearing using fire and that it was also involved in a hostage situation in Rokan Hulu district, Riau province - employees of the Environment and Forestry Ministry (KHLK) were allegedly abducted while investigating 2015 forest fires."

> "*Media report* alleged two companies operating in Jambi carried out burnings and were being investigated by Jambi Provincial Police Department."

> "*Local media report* that Ketapang District police were investigating 4 companies suspected of burning to clear land including PT Cipta Usaha Sejati."

The third source is corporate monitoring, customer, and suppliers. For example,

> "According to GAR *internal mill information*, Pactra Group sold PT AUS to Borneo Pacific in 2018. Thus it is no longer under management control of Pactra Group…GAR internal monitoring detected indications of 72 ha peat forest clearance

> inside PT AUS concession. Subsequently, Mighty Earth Rapid Response Report No.18 also mentioned 39 ha and 8 ha land clearance between June 15th and July 15th 2019. GAR contacted PT AUS for information and reiterated our NDPE commitment…GAR internal monitoring continued to detect peatland development in PT AUS concession as of October 2019. Given the unsatisfactory engagement result we have deemed PT AUS non-compliant with our grievance handling process. Our last purchase from PT AUS was in Q1 2019."

These sources provide information on four types of entities (Table 9). The first type is the companies' subsidiaries, where the companies have direct control over the entities through the ownership structure. For example, among the two NGO complaints made by the NGOs is Forest Peoples' Program (FPP), with the following example "…FPP complaint to RSPO alleging breaches of the RSPO Principles and Criteria by GAR including HCV, FPIC, smallholder schemes, and Indonesian law in PT Kartika Prima Cipta (PT KPC), West Kalimantan". In this case, PT KPC is a subsidiary under GAR.

Table 9. Number of cases according to the type of entities

Entities	Number of cases
Companies' subsidiaries	2
Direct suppliers	59
Indirect suppliers	102
Other subsidiaries of direct and indirect suppliers	31
Total	194

Source: authors' data base.

The second type is the direct suppliers, which sell their products directly to the companies. We encountered 59 cases in which the entities are direct suppliers of the companies. One example is a case involving PT Ensem Sawita, a direct supplier of GAR, which received the fresh fruit bunches from PT Agra Bumi Niaga.

> "RAN report alleged some companies had conducted destructive activities in the Leuser Ecosystem. PT Agra Bumi

> Niaga (ABN) was suspected of clearing 63 hectares of forest area in their concession after the issuance of Aceh Governor Circular Letter (17/6/16). The land clearing in PT ABN concession continued for the next three months after the circular even though the concession was sealed on 22/6/16 by the Ministry of Environment and Forestry as a result of the company's failure to obtain a proper license for forest clearing. Later The Guardian Newspaper reported that *FFB from PT ABN entered PT. Ensem Sawita's processing mill*".

The third type is indirect suppliers, which deliver to the direct suppliers of the companies. For example, Mighty Earth (2017) reported that PT Kahayan Agro Plantation is a subsidiary of Anglo Eastern Plantations. According to Cargill, Anglo Eastern Plantations is a supplier of GAR, which, in turn, is a supplier of Cargill.

> "…between October 16, 2016 and September 26, 2017, an estimated 420 hectares were deforested (see satellite imagery below), including clearing of Bornean orangutan habitat as per the most recent orangutan distribution maps…prior to October 2016, an estimated 3,593 hectares were cleared, including over 700 ha of orangutan habitat… PT Kahayan Agro Plantation is owned by Anglo Eastern Plantations…" (Mighty Earth 2017).

Finally, the reports also mention other subsidiaries of the direct and indirect suppliers, although they may not have both direct and indirect supply chain relations. For example, Mighty Earth (2018) reported that PT Persada Kencana Prima, a subsidiary of Tabung Haji Plantations, allegedly conducted deforestation in North Kalimantan. However, GAR made a statement that, "GAR does not have current commercial relationships with Tabung Haji Plantations but procures from Trurich Resources, a Joint Venture V between TH Plantations and FGV…"

Figure 5 illustrates the type of entities allegedly involved in deforestation. For example, when an NGO report mentions about Company group C, the entity is of one of the following:

a. *Subsidiaries* of Company C; these are under Company C's control through the ownership structure.
b. *Direct suppliers*, which directly supply to Company C. Company C may have direct control through supply chain arrangement.
c. *Indirect suppliers*, which supply to Company B, which then deliver to the Company C.
d. *Linked companies*: Subsidiaries of Company A and B without supply chain arrangements with Company C, but they are under the ownership structure of direct or indirect suppliers of Company C. They are not in the supply chain relation but part of the companies that have subsidiaries that supply to the company.

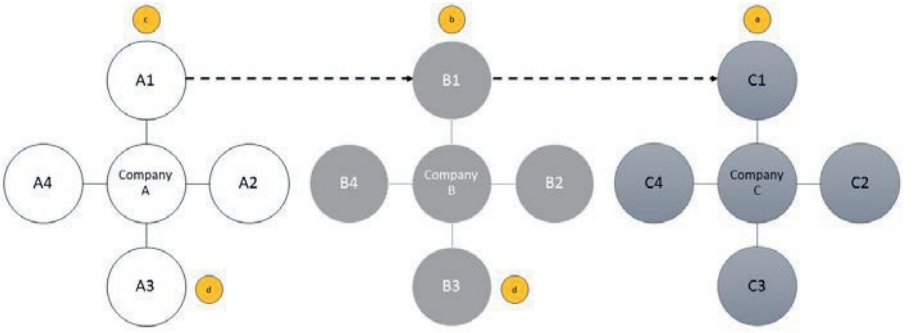

Figure 5. Illustration of the entities. *Arrow (dashed) line reflects supply chain relationship. Solid lines reflect ownership. A1-C4 are subsidiaries of each company.*

6.4.2. Information search

After the companies receive a complaint, they try to clarify the issue. The information search is aimed at clarifying several issues. First, the companies attempt to define the ownership structure of the entities. Second, the companies explore the the supply chain relationship that connects the companies and the entities. Third, the companies search for information about the location, including the GPS coordinates. Finally, the companies also search for other factors that may trigger deforestation, such as the possibility that smallholders clear the land.

In 177 cases, the companies searched for information individually by contacting the entities directly (Table 10). However, there are also cases where a company joins other companies to find out the information relevant to the issues at hand. For example, "Cargill does not directly source from the Tesso Nilo landscape. Through our engagements with our direct suppliers, we were informed of the following details: Wilmar suspended sourcing from PT Citra Riau Sarana in June 2018 due to alleged association with Ganda and Martua families. As such, the supplier is no longer in our supply chain".

The companies may also contact the NGO to clarify their reports. For example, when the Rainforest Action Network (RAN) published information about encroachments in the Leuser Ecosystem of the Province of Nanggroe Aceh Darussalam, GAR contacted RAN about the report. RAN reported recent land clearing in the concession area of PT Surya Panen Subur (SPS), a supplier of GAR. GAR followed up with SPS, which shared a large encroachment by an unidentified party, and the entity would file a police report and take legal action. GAR then conducted a field verification visit to SPS2 mill, estate, and surrounding areas and shared the findings with RAN.

Table 10. Source of information search

Information search	Number of cases
- Directly From the entities	177
- Via ex-IPOP members	4
- Both	13
Total	194

Source: authors' database

6.4.3. Position forming

After the companies have gained a better understanding of the issues being reported or complained about, they position themselves. The position forming of the companies against NGOs complaints is presented in Table 11.

A frequently occurring companies' reaction is what Balsiger (2014) classify as avoidance strategy, where the companies deny the reports of the complaints. In 56 cases, the companies deny the complaints made by the NGOs related to the locations. In any denial of the NGO complaints, they compare the data presented on the NGO reports and the data from the entities. The companies also conduct assessments or verify the entities' claims. That way, the companies seek proof to deny the allegations made by the NGOs. The main reasons for the location-related rejections are related to three areas. First, the companies claim that the locations lie outside the companies or the entities' concessions. Second, if the sites are still within the entities' concessions, the sites have gone through HCV/HCS assessment, and the cleared areas are not part of the HCV/HCS areas. Third, their areas lie within the companies' concession, but they have not acquired the land from the local owners.

Table 11. Arguments for dismissing the complaints

Arguments	Number of cases
Location	56
Corporate ownership	33
Supply chain	32
Total	121

Source: authors' database

In 33 cases, the entities claimed that the concessions alleged for land clearing do not fall under the ownership structure of the companies or the entities. These ownership-related claims happen either because of no factual ownership relation or because the ownership relation is no longer in place (e.g., the entities have sold their subsidiaries by the time land clearing is detected).

In 32 cases, the entities are not part or no longer part of the supply chain networks, either directly or indirectly. For example, "Musim Mas does not have business relationships with CBIP and PT Kurun Sumber Rezeki. However, since we have a business relationship with Tradewinds Plantation, we meet them to clarify the allegation in the report published by Mighty Earth".

Table 11 shows that the companies' rejection did not apply to the 194 cases. There are also cases in which the companies accepted the occurrence of the issues. In 42 cases, the companies applied a sidestepping strategy: these companies admitted that deforestation takes place on their concessions but claim that this is not to blame the companies or entities but other parties. They denied that the land clearing was their mistake, at least intentionally.

The entities provide several arguments. For example, entities claim that communities cleared the land. The entities also argued that land clearing had to take place in order to fulfill the promise to open areas for plasma, and land clearing due to encroachment. Another example is the interesting excuse that there has been a GPS measurement error that resulted in a land clearing within HCS areas. Finally, there are also entities that admit that they intentionally cleared the land because the land is outside the area set aside as HCS or HCV.

6.4.4. Constituency building

The companies resolve the complaints mainly through individual efforts. There are, however, cases in which a company made joint efforts together with other companies with NDPE commitment (i.e., former IPOP members) to resolve the complaints (Table 12).

Table 12. Efforts to solve the complaints by participation level

Solution	Number of cases
- Individual	179
- Joint	15
Total	194

Source: authors' database

Regardless of the initial positioning of the companies and the entities, the companies try to persuade the entities either to make a statement that they will follow the companies' NDPE policies or to publish the entities' sustainability or NDPE policy (Table 13). In 64 cases, the company did not do the engagement mainly because the entities are part of companies with sustainability or NDPE policy.

However, in 130 cases the companies engage the entities for sustainability or NDPE policy (Table 13). This constituency-building strategy ensures that the companies have clean and traceable supply chains. In cases where the damage has taken place, for instance, the land is cleared, the companies ask the entities to stop the work and conduct HCV and HCS assessments done by a third party. The third party should be certified HCV or HCS assessors. Companies apply programs to engage suppliers that involve engagement to potential and existing direct and indirect suppliers, for example through self-assessment and ad hoc visits.

In 103 cases, the entities accepted to the companies' NDPE policy or published their sustainability policies that encompass elements of the NDPE and clarified areas under HCV or HCS. There are several indications that the entities are willing to comply with the companies' NDPE policies. First, entities are willing to stop work-order for land clearing and impose a moratorium on the areas being complained to allow an investigation by both the entities and the companies. Second, entities appoint third parties to conduct HCV or HCS assessments. Of the 103 cases, 49 cases involve third parties as part of the engagement strategy. These three parties are assessors that the HCS working group

approves to conduct HCV/HCS assessments. The entities submit the evaluations to the HCS working group and the companies for peer review. The third parties also have a role in verifying the claims made by the entities or the companies. Third, during the moratorium and the assessments, the companies halt the purchase of palm oil from the entities. Fourth, the companies persuade to include the entities into the companies' traceability systems. Fifth, the entities are willing to submit data on their concession to the companies as part of monitoring systems.

Table 13. Constituency building strategy and their outcomes

Constituency building	Number of cases
- Yes (engagement)	
• Entities agree	103
• de-linking	27
- No	64

Source: authors' database

However, we found 27 cases in which after several engagement activities, that could take more than a year, the companies decide to stop purchasing from the entities. The companies chose to do so because they concluded that the entities do not show signs of complying with their NDPE policies or publishing their sustainability policies.

6.4.5. Information dissemination

In all cases, the companies communicated the steps to identify the problem, early positioning, engagement process, and the cases' conclusion. In each case, the companies presented the latest status, whether it is under investigation, under monitoring, or closed. The companies contacted the NGOs on the outcomes. The companies also provided all records at the "grievance procedures" section of the companies' website.

6.5. Discussion

The results show that the companies take the NGOs complaints seriously. A negative image from these complaints can bring reputational risks for the companies in their quest to implement and achieve the targets set out in their no-deforestation commitment. The activities of the first two stages – scanning and information search – show how the companies see and understand the threats. The subsequent stages show how the companies navigate around the complaints by using different strategies: position forming, constituency building, and information sharing. In the position forming, the companies take into account and position themselves in response to the complaints, using the information collected in the previous stage. The companies mainly using avoidance position to reject the complaints. They also use sidestepping in cases where avoidance is not possible. The companies do not use these positions as the end of their response to the NGOs complaints. Instead, the major response of the companies is to use the complaints to build a strong base of suppliers that adopt or conform to the companies' no-deforestation commitment.

These results have major implications for different policy debates and scientific discussions: First, in the OECD guiding principles, the scope of business responsibility encompasses three ways: 1) by causing adverse impacts (where the companies directly cause harm); 2) by contributing to adverse impacts (where the suppliers cause harm); and 3) linked adverse impacts, in which another business caused adverse impacts but can link to the business (ITUC 2012). Our cases show that the scope of responsibility of the companies reaches beyond their subsidiaries and suppliers (Table 9). More importantly, these cases illustrate that the companies respond to the NGOs complaints about entities owned by the companies' suppliers but have no supply chain relationship with the companies. This notion means that the companies have to bear additional costs to look for information and verify the complaints. Simultaneously, the companies can see it as an

opportunity to build constituency in achieving the companies' NDPE targets.

Second, the 121 cases in which the companies dismiss the reports by the NGOs (Table 11) show that while the NGOs may have access to information on the company ownership, supply chains and concession locations, the companies and the entities have information that may be more accurate or more up-to-date than the NGOs. The companies and the entities can show the location, supply chains, and ownership arguments to deny the NGOs' allegations, but the NGOs cannot provide evidence that counter the companies' claim. This finding poses a challenge in the global efforts to monitor corporate no-deforestation commitment. While there are global initiatives to monitor forest cover changes, attributing deforestation to a particular company linked by the ownership and supply chain is still very complex and challenging. Company ownership and supply chains change over time. While NGOs can access official databases on corporate ownership in Indonesia, this information may be outdated and not keep up with the changes in the supply chains and ownership of a particular location. Also, obtaining real-time information may be very costly.

Third, the constituency-building strategies that the companies are employing show an indirect way to achieve firm outcomes. The classic CPA models assumes that firm outcomes come as a follow-up to policy outcomes. Our findings show that the companies may pursue firm outcomes while staying away from policy outcomes. The companies build a critical mass of companies and suppliers with NDPE policies through this constituency-building strategy. As such, even without influencing the government to issue policies supporting the NDPE commitment (as is the case of the IPOP, see Dermawan and Hospes 2018), these companies can achieve firm outcomes, such as clean and traceable supply chains and increased acceptance from the global markets. The de-linking of entities from their supply chain shows that the companies are prepared to give up (part of) their supply base when

these entities are not up to their standards. This can be very helpful for companies to prevent getting negative publicity triggered by critical reports and new complaints of NGOs.

6.6. Conclusions

Our first conclusion is that the main challenges of palm oil companies in implementing their NDPE commitment are not only caused by the actions of their direct and indirect suppliers but also entities that belong to the suppliers but are not part of the companies supply chains. This means that companies must not only engage with their subsidiaries and the suppliers to ensure the implementation of the NDPE commitment but also seek ways how to address complaints of NGOs about others that are not part of their supply chains.

Second, the companies navigate the complaints by applying a processual approach to respond to the NGO complaints. Using the CPA framework, the companies start by clarifying the issues, developing an initial position toward the complaint, and vertical constituent-building and information strategies to strengthen their supply base to comply with their NDPE commitment. Constituency-building is a crucial strategy to build a critical mass of companies implementing NDPE policies and to turn the threat of NGO complaints into an opportunity.

7. Conclusion and discussion

7.1. Introduction

Many scholars, policymakers, and practitioners have articulated the complex challenges of achieving sustainable palm oil (e.g., Pacheco et al., 2017; Dauvergne, 2018; Schleifer and Sun, 2018; Watts, 2021). Being a host of about 50% of the global palm oil production, Indonesia has witnessed both the benefits and costs of the palm oil sector development. Despite providing the engine for economic growth, employment creation, and income generation, oil palm faces several challenges. The palm oil sector has three performance challenges: 1) conflicts over land and benefits associated with the expansion of industrial palm oil plantations (Berenschot et al., 2022); 2) large actual yield gap between the industrial plantations and smallholders (Woittiez et al., 2017); and 3) detrimental environmental impacts, including deforestation, peatland clearance, fire and haze and others that result in net carbon emissions (Qaim et al., 2020). These performance challenges undermine the palm oil sector's sustainability, inclusivity, and reputation.

Since the 2000s, efforts to respond to the challenges have intensified. In the early 2000s, a multistakeholder process started, initiated by European businesses and NGOs. This process gave birth to the establishment in 2007 of the Roundtable for Sustainable Palm Oil (RSPO), a global private regulation of the palm oil sector through an industry-wide standard and multistakeholder consultation process. The Government of Indonesia (GoI) followed by formulating the national public regulation, the ISPO, published in 2011 (Hospes, 2014; Hidayat et al., 2018; Astari and Lovett, 2019). Both regulatory frameworks have gone through several updates (Brandi, 2021). In spite of these public and private regulations, palm oil companies have initiated self-regulation to produce deforestation-free palm oil.

The dissertation aims to improve the understanding of palm oil companies' strategies for implementing self-regulation of zero-

deforestation commitment, given other regulatory frameworks governing sustainable palm oil. The strategizing of the companies has added to the complexity of the palm oil regulatory regime and requires new exploratory research on both companies' self-regulation and the dynamics that have resulted from self-regulation. Companies have not been the first ones to set out regulatory initiatives and have to position themselves and, consequently, navigate in a complex regulatory regime. The first part of this dissertation has focused on the complexity and changes of this regime. While developing their self-regulation, corporations have to navigate their zero-deforestation regulatory initiative around different public and private authorities and their regulatory schemes. The second part of the dissertation presents how large palm oil companies navigate their zero-deforestation commitment around public authorities and complaints of NGOs.

7.2. Answers to the research questions

7.2.1. Answer to sub-question 1

What are the specific dynamics and complexities of the Indonesian palm oil regime?

The palm oil regime complex consists of public authorities and regulations from diverse domains (i.e., finance, trade, fiscal, production, and land), private authorities and regulations, and self-regulation and their actors. The complexities of the palm oil regime are characterized by disconnects, complementarities, and antagonisms related to palm oil sustainability objectives and strategies (as summarized in Table 1 of Chapter 2).

The first complexity lies in the interactions between different policy domains. Efforts toward promoting sustainable palm oil in one policy domain may be disconnected, in conflict, or complementary to another policy domain. An example of a disconnect across domains is between the finance and land use domains. The Indonesian public fund, known as the CPO Fund (Badan Pengelola Dana Perkebunan Kelapa Sawit, BPDPKS), draws its sources from palm oil export tax and is meant to financially support and facilitate sustainable palm oil development

with an emphasis on improving smallholder oil palm practices (Nurfatriani et al. 2019). However, most of the CPO Fund budget has been used to support biodiesel development, which means that most of this fund is an investment in large-scale producers (Pacheco et al. 2017, Nurfatriani et al. 2019; O'Malley et al. 2021). This use of the CPO Fund is not in line with the private sector commitment to conduct responsible investment and support of smallholders' adoption of ISPO and RSPO. An example of an antagonism between the trade and production domains is that – in spite of the shared vision of the RSPO and Government of Indonesia making sustainable palm oil the norm in markets - consumer countries adopt import policies that mainly rely on the RSPO as a voluntary standard. This antagonism is further fuelled when industrial buyers and manufacturers are supposed to implement restriction policies (e.g. deforestation-free products) that conflict with the trade and development policies of producer countries and companies.

The second complexity lies within a policy domain. The complexity comes from how regulatory framework (as key property of a regime) overlaps and interacts with another regulatory framework. Each policy domain exhibits interactions among different regimes within the same domain. With regard to the production domain, which is the key domain addressed in this thesis, three types of regulatory frameworks can be distinguished, that each govern sustainable palm oil production. The first type is public regulation. ISPO is the most crucial public regulation governing Indonesian palm oil production in the production domain. ISPO has gone through revision several times, including strengthening its legal status (Astari and Lovett 2019, Brandi 2021, Choiruzzad et al. 2021). The second type is private regulation, including the RSPO and International Sustainability and Carbon Certification (ISCC) The RSPO primarily addresses land and environmental performance issues. The ISCC was established in 2010 to certify CPO sold to the EU biodiesel market. The third type of regulatory framework comes from corporate zero-deforestation

commitment as a form of self-regulation. A prominent example of self-regulation is the pledge of six giant palm oil companies to zero deforestation in Indonesia called the IPOP. Other examples are the Palm Oil Innovation Group (POIG) and Sustainable Palm Oil Manifesto (SPOM) (Pirard et al. 2016).

Several disconnects, complementarities, and antagonisms can be identified among the regulatory frameworks in the palm oil production domain. First, the palm oil companies formulate their no-deforestation commitment that builds on RSPO certification, indicating complementarity between self-regulation and private regulation. Since the RSPO and ISPO share many principles and criteria, it is conceivable that the corporate zero-deforestation commitment also builds on the ISPO. Moreover, Astra Agro Lestari, one of the big companies that committed to zero-deforestation, has adopted the ISPO standard as the only sustainability certification. Second, the neglect by Indonesian public authorities of corporate self-regulation has created antagonisms among the Government of Indonesia and big palm oil companies as regulatory bodies. Fearing that the IPOP as a form of corporate self-regulation would threaten smallholder development and their sovereign power, Indonesian public authorities showed their strong discontent with this corporate initiative. Third, disconnects between different approaches to sustainability framings further exacerbated this antagonism (cf. Higgins and Richards 2019): the national mandatory standard was framed by the government as a "legality" instrument, whereas the palm oil companies framed their self-regulation to contribute to voluntary, "clean" and traceable supply chains. The Government of Indonesia got and shared the impression that self-regulation is not about legal compliance. When the palm oil companies engaged with the public authorities to discuss legal foundations for self-regulation, it was already too late. The government did not want to discuss this and reacted in a very adverse way, prompting the palm oil companies to disband their joint initiative. This disconnect means that palm oil

companies face the big challenge of navigating between fulfilling the public requirements and maintaining their zero-deforestation commitment.

Regarding the dynamics or how the regulatory frameworks interact across time, these regulatory frameworks have not evolved stand-alone or in isolation. Each regulatory framework rises as a response to the challenges or problems with another regulatory framework. Before the launch of the RSPO in the early 2000s, Indonesia already had several legislations that regulate palm oil production. However, they either are poorly implemented, inconsistent or too scattered across several ministries (Quah 2002, McCarthy and Zen 2010, Chairuzzad et al. 2021). As a collaboration between NGOs and industrial buyers, mainly from Europe, the RSPO convened its inaugural meeting in 2003. Several years after the first RSPO meeting, the Government of Indonesia established the ISPO with the argument that the RSPO certification is voluntary and that it was biased towards the interest of palm oil consumption countries, ignoring the interests of palm oil production countries (Paoli et al. 2010, Higgins and Richards 2019). The ISPO is structured similarly to the RSPO in terms of principles and criteria (Hospes 2014, Efeca 2016) but explicitly builds on existing public regulations from different ministries. Despite several attempts to promote the ISPO at the international level, this national standard has been facing a lack of global market acceptance because of unresolved issues related to tenure rights and forest conservation within concessions (Hidayat et al. 2018; Brandi 2021).

The limitations of the RSPO and ISPO, together with the emergence of other initiatives such as the Consumer Good Forum's net zero-deforestation pledge, have prompted the rise of corporate self-regulation. Key drivers of corporate self-regulation are the failure of private and public regulatory authorities to make sustainable palm oil mainstream and the fear of palm oil companies of losing market share and export destinations if they do not meet the demand for sustainable products of foreign buyers and consumers (Gnych et al. 2015).

Interestingly, corporate self-regulation may contribute to the enhancement of both public and private regulation. The GoI improved the ISPO in 2015, introduced regulations on peatland protection, and initiated the process of strengthening the ISPO in 2016. The RSPO introduced a new scheme called RSPO NEXT in 2015 that included elements of zero-deforestation commitment. The RSPO NEXT scheme ended in 2020 after the RSPO improved its core principles and criteria in 2018. One could say that corporate zero-deforestation commitment has triggered a race to the top in the governance of sustainable palm oil. This race is an outcome of the interactive supply and demand of regulatory frameworks (Mattli and Woods 2009). Negative social and ecological results show the public the consequences of a poor regulatory framework, which triggers the need for better regulation. However, the race to the top requires a convergence of interests of key actors and authorities to participate in the supply of the demanded regulations (Mattli and Woods 2009, Barrows 2009). This race to the top can be seen as a sustainability pathway in the palm oil sector. Different actors and regulatory frameworks develop positive synergy and connections that reinforce technical, land use, and governance practices. The findings of Brandi (2021), pointing at the change from competitive to collaborative interaction between ISPO and RSPO, confirm that key players and regulatory agencies of the palm oil sector can indeed together construct such a sustainability pathway.

7.2.2. Answer to sub-question 2

What strategies have palm oil companies with zero-deforestation commitment developed to respond to governmental regulations and pressures?

To organize self-regulation in a context in which the government claims a central role as regulatory authority, palm oil companies face different choices. First, palm oil companies have to decide to act individually or collectively. Second, palm oil companies have to choose from a range of options when execute their self-regulation. The three periods of corporate self-regulation that can be distinguished based on my study, shows that companies constantly adapt to new

demands from the government and reactions to their zero-deforestation policies.

The first period (2013-2014) is the period before the start of the IPOP in 2014: companies individually started self-regulation to demonstrate their sustainable palm oil production leadership. At this stage, the palm oil companies used self-regulation as a response strategy to the name-and-shame and engagements of NGOs. Similarly, sustainability demands of industrial buyers and manufacturers incentivized them to go that extra mile. These contexts provided a breeding ground for individual self-regulation of the palm oil companies. In the first period, the companies did not seek policy outcomes from their self-regulation. Therefore, during this period, there was a disconnect between the companies' self-regulation and public authority since the companies' zero-deforestation commitment mainly took place through individual interactions and engagements with NGOs. The disconnect is particularly relevant for two reasons. First, the corporate zero-deforestation commitment mainly aimed to respond to NGO critiques and the value chain-related initiatives such as the Consumer Goods Forum's zero net deforestation pledge (CGF 2010). Second, during the same period, the Government of Indonesia focused on getting the ISPO settled as the mandatory sustainability standard through extension programs to the lower level of governments and other stakeholders at the domestic level and globally through the promotion of ISPO to the global markets (Caroko et al. 2012).

The second period is the IPOP period (2014-2016) when the companies with individual self-regulation started collective self-regulation. The establishment of collective self-regulation was a response strategy to the opportunity provided by the global agenda to end deforestation and the indication of the willingness of highest political leadership of Indonesia to take the lead in the agenda. The companies saw an opportunity to amplify their self-regulation by linking it to the global commitment, such as the New York Declaration of Forests. Collective self-regulation is also a response to possible collaboration at the

implementation level, which shows the role of collective self-regulation as a coordination mechanism. During this period, the IPOP explicitly aims to seek the GoI support in providing legal foundations for self-regulation. The IPOP deployed different political strategies, i.e., information strategies, financial strategies, and constituency-building. Constituency-building is arguably the most dominant strategy because the four initial members of IPOP approached other big companies at the same level of the value chains to join the pledge (horizontal constituency building), resulting in the addition of two members. By collective commitment, they successfully engaged other large companies as new members to get more companies with zero-deforestation commitments. However, the state began to use discursive power to challenge the companies' self-regulation when it perceived that the collective self-regulation threatened its sovereignty over producers, rule-making, and economic organization.

The third period (2016-onwards) started after the IPOP self-termination. In this period, returning from collective to individual self-regulation was a response strategy to the adverse reaction of the GoI toward the IPOP. Having received a negative response from the government to the companies' zero-commitment, the companies navigated around the pressure by disbanding IPOP as a form of collective self-regulation and continuing with individual self-regulation. During this period, the companies did not seek policy outcomes but focused on firm outcomes, i.e. producing deforestation-free palm oil to increase acceptance of their products in sensitive markets. The companies deployed information, financial as well as constituency-building strategies. The emphasis was not on horizontal constituency-building but more on vertical constituency building, i.e., persuading their suppliers to join the zero-deforestation commitment. Instead of bringing other big companies to adopt zero-deforestation commitment, they focused on getting their direct and indirect suppliers and others that could be linked to the palm oil companies.

7.2.3. Answer to sub-question 3
What strategies have palm oil companies developed to respond to the pressures and complaints from NGOs?

NGOs play an essential role in corporate self-regulation in three ways. First, NGOs have supported the companies' self-regulation because they also want to end deforestation. Therefore, their encounters and negotiations with companies triggered the adoption of corporate zero-deforestation commitment. Second, NGOs stand on the side of the companies when the companies are facing adverse reactions from the government. Third, despite sharing the same goals and standing on the side of the companies on the commitment, NGOs remain their roles as watchdogs by critically monitoring the companies' potential breaches of their self-regulation. This specific role as a watchdog has been an important role of NGOs in other settings, such as a multistakeholder process (Nikoloyuk et al. 2010, Ruysschaert and Salles 2018). Using a combination of remote sensing and field data collection, NGOs complain about the alleged breach of the zero-deforestation commitment of the palm oil companies. For the palm oil companies conducting self-regulation, complaints of the NGOs are not good for the companies' reputation. This idea was particularly more evident before the companies made the zero-deforestation commitment. The companies realized, however, that collaboration is better than confrontation for their reputation and the success of corporate self-regulation.

Companies benefit from the complaints of the NGO by knowing the "entities" – the ones mentioned in the NGOs' complaints as allegedly clearing the forest land. The "entities" may have one of the following relationships with the companies. First, the "entities" may be a company subsidiary, where the company and the "entity" are under the same ownership structure. Second, the "entities" may be the direct suppliers of the companies; the "entities" directly sell the palm oil products to the companies. Third, the "entities" may be indirect suppliers to the companies; they sell palm oil products to the direct

suppliers of the companies. Fourth, the "entities" may be under the ownership of direct or indirect suppliers, but there is no purchase agreement between the "entities" and the companies, which are called "linked companies" (ITUC2012). Therefore, when NGOs complain about the ex-IPOP companies, the complaint includes subsidiaries, suppliers, and linked companies.

The complaints of NGOs trigger companies to gather information about the following four issues: the ownership structure of the "entities"; the supply chain relationship between the companies and the "entities"; 3) location of the "entities"; and other sources that triggered deforestation. The companies conduct an information search through field inspections and formal letters to the holding companies of the "entities". The companies also invited the NGOs to seek clarifications.

After their information search, the companies in most cases apply an avoidance strategy, rejecting or denying the complaint. The companies use three main arguments for dismissing the complaints. First, the companies use the ownership argument, where the companies or the suppliers deny having an ownership relationship with the "entities". Second, the companies use the supply chain argument, where the companies or suppliers deny having a supply chain relationship with the "entities". Third, the companies use the location argument, where the companies or the "entities" deny that the land clearing took place inside the concession of the "entities". Another response is what Balsiger (2014) calls a sidestepping strategy. The companies or the "entities" admit that deforestation takes place, but the companies or the "entities" shift the blame to others. Some "entities" blame communities as the actor who clear the forestland. The "entities" also argue that they are fulfilling their promise to build oil palm estate for the tied smallholders (called "plasma"). Finally, the companies or "entities" admit that they intentionally cleared the land because the land is outside the area that the companies have set aside as high carbon stock (HCS) or high conservation value (HCV).

Interestingly, companies do not stop acting after applying the avoidance and sidestepping strategies. The companies use information about the complaints of the NGOs. Even when the companies reject the NGOs' accusations, they use the information as a trigger for vertical constituency building: the companies persuade the "entities" either to adopt the no-deforestation policies of the companies or to formulate sustainability policies containing the no-deforestation element. This engagement indicates that palm oil companies are building a critical mass of "entities" adopting a self-regulatory framework. The companies are willing to de-link the supply-chain relationship when the "entities" do not improve their practices or adopt sustainability policies. The companies are trying to achieve firm outcomes, i.e., producing deforestation-free palm oil, without persuading the GoI to provide legal backing.

7.2.4. Answer to the main question
How do the palm oil companies committed to zero deforestation navigate in the dynamic Indonesian palm oil regime?

The big palm oil companies see the palm oil regime complex as an arena in which they navigate around different actors and regulatory authorities in their quest to achieve deforestation-free palm oil production. The bandwidth and rules of the game of this quest are set by the Government of Indonesia and NGOs. The government is not accepting self-regulation if and when too powerful and challenging the public regulatory authority. As a result, the palm oil companies had to give up their collective form of self-regulation and pursue individual commitments and re-label their commitments as NDPE (No Deforestation, no Peatland and no Exploitation). The NGOs have applauded self-regulation of palm oil companies aimed at zero-deforestation but are also critically monitoring the implementation of these commitment at concession level. Interestingly, whereas the companies aim to do better than public and private authorities in realizing zero-deforestation, the companies face contradictory pressures from the government and NGOs on the launch and

implementation of their self-regulation: the government wants less self-regulation, whereas the NGOs want more, or rather, effective implementation of self-regulation up to the concession level.

The scope, form and development of self-regulation of palm oil companies depends on the room given by public authorities for corporate self-regulation. Self-regulation cannot be understood without studying regime complexity and the role of public governance in it. The self-regulation and zero-deforestation commitment of companies cannot also not be understood without understanding the role of NGOs. First, the first companies that established the no-deforestation commitment had gone through repeated discussions with NGOs. Second, NGOs play an important role in operationalizing the no-deforestation commitment, such as the High Carbon Stock (HCS) approach. Third, although some companies did not pledge to zero deforestation through direct engagements with NGOs, they adopt the scope of the zero-deforestation commitment that follows the operational definitions set by the NGOs through the HCS approach. Fourth, NGOs support the companies when the companies face adverse reactions from the governments. Fifth, through the continuous role of the NGOs as watchdog, they assist the companies in ensuring that they deal with challenges in implementing their commitment and building constituency with their suppliers. Given this extensive role of NGOs, one could even doubt where the term of self-regulation is appropriate enough. The term does take our attention away from the key role of NGOs in triggering, supporting, and correcting corporate self-regulation.

The companies apply CPA to navigate around the pressures of the government and the NGOs. As such, CPA is helpful in comparing the response of the companies to external pressures. The comparison lies in five areas. First, instead of a relational approach, the companies adopt a transactional approach to political activity with both the government and the NGOs. Transactional approach is characterized by a focus on specific issue areas in a short duration. It is well-known

that the palm oil companies are part ownership structures that encompass business in multiple sectors. The indication of the transactional approach is that the recurrent disagreements between the palm oil companies and the GoI do not affect other parts of the palm oil business. In addition, the disagreements also do not affect the business-government relationship in the other sectors. Similarly, the interactions between the companies and the NGOs also characterize transactional approach with the focus on the breach of the zero-deforestation commitment. Second, the companies choose collective self-regulation when they see opportunities to increase the chance of success in seeking government policy support. On the contrary, the companies mainly choose individual participation when interacting with the NGOs and the entities. Third, in the interactions with the government, the companies deploy information strategy with an emphasis on information dissemination. However, the companies use information gathering and exchange as the main information strategy when interacting with the NGOs. Fourth, the companies at one point attempt to target policy outcomes while interacting with the GoI. However, several policy reforms of the GoI indicate the trigger of the self-regulation to policies favorable for the companies. Policy outcomes are not the main target of the companies' interaction with the NGOs. Finally, the companies pursue firm outcomes under the shadow of the state and benefit from the complaints of the NGOs to build a constituency.

7.3. Contribution to literature

My study provides two main contributions to the literature on governance of sustainable palm oil. First, while palm oil companies are often presented as rule takers, violators, and objects of public and private regulations, they are also rule makers that actively influence the regulatory landscape of sustainable palm oil. My study of the navigating strategies of palm oil companies shows that the commonly held notion of the government and the business sector to be "close to" each other, with the government defending the interest of business (e.g., McCarthy et al., 2012; Choiruzzad, 2020) needs nuancing. In their

commitment to self-regulation, the palm oil companies have claimed own regulatory power and triggered negative reactions of the state to corporate self-regulation. In a similar vein, my study shows that the commonly held notion that palm oil companies and NGOs are traditional enemies does not hold. They can be allies in seeking to curb deforestation and in accelerating the slowing down of deforestation at a pace beyond the plans of the government. The studying of navigating actions of companies can provide a more nuanced, if not more comprehensive, understanding of the role of the companies in shaping pathways toward sustainable palm oil.

Second, by using the lens of CPA, my study shows that palm oil companies employ nonmarket strategies in achieving their outcomes to produce deforestation-free palm oil. More particularly, my study shows that the companies not only employ individual nonmarket strategies, which is typical in studies on CPA, but also establish collective action when opportunities arise to show their leadership to the world and gain support from the government. Moreover, the companies have strategic flexibility that enables them to navigate around the challenges from different actors and regulations. Whilst the companies can see potential benefits of having support from public authorities, they can also navigate around them to maintain their agenda when such support is lacking or diminishing.

7.4. Reflection on the theoretical framework and methodology

7.4.1. Reflection on the theoretical framework

The dissertation provides two complementary levels of analysis. The first level comprises the regulatory frameworks governing sustainable palm oil as the arena in which the palm oil companies implement and adjust their self-regulation. The second level is the navigating or strategizing of companies themselves and how the companies interact with and react to public authorities and NGOs. Both levels are interrelated since the companies must understand the arena they need to maneuver and navigate in.

A key challenge to analyze the two levels has been to find theoretical concepts that can encompass both levels and help to unpack change and dynamics. Focusing on concepts that are only relevant to the first level may undermine the richness of the dynamics at the second level, and vice versa. The frameworks to study of transnational business governance interactions (Eberlein et al. 2014) and other forms of interactions (Lambin et al. 2014) are rich and truly can help to describe different levels of analysis. However, they often suffer from explaining the companies' strategizing with self-regulation as well as changes in these strategies, which are central in this dissertation.

With these challenges and limitations of existing theories in mind, the theoretical multiplicity approach has been helpful in two ways. First, such an approach helps to bridge different levels of analysis. For example, using the concepts of regime complex and seeing sustainability pathways as part of dynamics within the regime complex, can help to address both complexities of interactions of public-private regulatory frameworks and changes over time. Another example lies in the combination of sustainable pathways with the role of the state in the global value chain analysis, which can help understand macro-level interactions and how the use of discursive sovereignty and antimonopoly has shaped (the ending of) collective self-regulation of the companies.

Second, the theoretical multiplicity approach enables the analysis of each level without undermining the links to the other level. For example, regime complexity is helpful to study interactions between companies, government, and NGOs whereas CPA is helpful to unpack the black box of decision-making by companies on their mode of self-regulation, when confronted with regulatory power of the state and claims of NGOs. Analytically speaking, CPA complements the regime complex of different regulatory frameworks (Chapter 2-3). CPA provides a lens for analyzing the navigating of the palm oil companies around different regulatory frameworks and, at the same time, explains the dynamics of the regime complex.

7.4.2. Investigating sensitive issues: some methodological notes

Palm oil and deforestation are two research topics that are sensitive to quite some of the key stakeholders in Indonesia. The tension between the government of Indonesia and palm oil producers lies in the attribution of palm oil to deforestation and other negative impacts. In Indonesia, as the thesis has elaborated, the sensitivities of the topic between palm oil and deforestation have triggered negative reactions from the government of Indonesia towards the IPOP. Similarly, the links between palm oil and deforestation have been a constant source of controversy between Indonesia and the European Union. Through its revised Renewable Energy Directive, the EU aims to phase out the import and use of palm oil for biodiesel by 2030, qualifying palm oil as a commodity with a high risk of Indirect Land Use Change (Mayr et al., 2020). Furthermore, a proposal of the European Union on deforestation-free supply chains has similarly triggered a debate on palm oil and deforestation links. Not surprisingly, deforestation is also a sensitive topic for palm oil companies at the concession level. For example, it proved to be very difficult to approach company representatives at local level to discuss the complete account of the processes that led to the IPOP termination. These controversies and sensitivities have two major implications.

First, any effort to approach the government or private sector requires a long time of careful preparations and engagements, not seldomly involving rejections to meet with them in the first place. Therefore, it is important to be prepared to adjust to the project planning and have several contingency plans in mind.

Second, and partly related to the first implication, searching, and finding alternative data sources is crucial. An example is to use an indirect approach and seek so-called "indirect respondents", that is, persons who are not part of the companies or government but may have sufficient knowledge through interactions with both parties. Another example is through organization or participation in workshops, where one can reach out to potential respondents in an

informal setting. Another data collection strategy is to tap the (quite huge) potential for using data that is publicly available but has not been analyzed. For example, the lists of the complaints of the NGOs are available on almost every company's website. It is important to note that these data may be biased, which means there is a clear need for triangulating the data and the interpretation. Finally, another way to get the company representative to speak is to ask them to respond to the preliminary analysis presented in a workshop or focused group discussion. Such activity can serve well to verify earlier collected data or serve as data collection on its own.

7.5. Future research agenda

Whilst the study has generated many new insights, the agenda for future research and policymaking is huge:

First, the concept of a palm oil regime is somewhat geographically defined and somewhat biased towards the upstream part of palm oil production, trade, and regulation. Policymakers, private sector actors, and other stakeholders have tabled sustainable palm oil as a common agenda. However, the way in which sustainability is framed and operationally defined may differ across actors, geographies, and policy domains. For example, the RSPO standard has national interpretations, and RSPO and ISPO differ in determining the free prior and informed consent. In addition to the ISPO and RSPO, EU regulations on due diligence and deforestation-free supply chains have emerged that internationalize and globalize regime complexity. This means that the downstream part of palm oil regimes has to be added to get a fuller picture. Understanding how a regime complex is shaped by different global value chain policies and governance arrangements (be they private, public, or private-public) could help get a more comprehensive understanding of regime complexity and sustainability governance.

Second, further expanding the point on the limitations of the complex regime concept, it is very important to (further) investigate the role of states in governing business and global value chains. Chapter 4 has

shown that global value chain governance arrangements is more than interfirm coordination and has to bring in the state into the analysis. While Chapter 4 focuses on Indonesia as a palm oil-producing country, global value chains are also affected by the state(s) at the other end of the chains. Importing countries, notably the European Union, issue regulations and policies to regulate palm oil value chains under different framings (deforestation-free, human rights, carbon emissions). Future research could focus on how governments at different ends of the palm oil global value chains frame and engage among themselves and with private initiatives in their domestic and international arenas.

Third, there is a lack of studies on the interactions of different regulatory frameworks across policy domains on sustainability. While sustainable palm oil has been conceptualized at private, public, and self-regulation, there is a lack of studies that link these regulatory frameworks with the sustainability at other policy domains. For example, in the finance domain, several financial institutions have established or strengthened their environment, social, and governance (ESG) as a major consideration in investment or financing decisions. Similarly, in the fiscal domain, public authorities have developed frameworks that encompass the role of the private sector in achieving sustainable development targets, such as climate change budgeting and the nationally determined contribution (NDCs). It is not yet known, however, how these measures affect the development of sustainability standards in the land use and production domains. Understanding the links and interactions across policy domains can contribute to a better understanding of the role of sustainable palm oil in national and global development frameworks, such as the net-zero emission and sustainable development goals.

Fourth, and as elaborated in Chapter 2, palm oil faces three sectoral performance issues: conflicts, yield gap, and detrimental impacts. This thesis focuses on deforestation as a major issue and how companies implement self-regulation in producing palm oil that moves away

from deforestation. With regard to corporate NDPE commitment, there has been a lack of studies on how palm oil companies navigate around the implementation of no-peatland and no-exploitation commitment with existing public and private regulations pertinent to both issues. As Berenschot et al. (2022) show, conflict is a major longstanding issue in the palm oil sector. It takes years to resolve conflict cases between companies and communities related to the companies' expansion. Moreover, peatland restoration is a major government agenda due to the important role of peatlands in climate change mitigation. Therefore, studying the interactions among public, private and self-regulatory frameworks on peatland protection and on conflict resolution provide important agendas for future research.

7.6. Future policy agenda

The GoI is updating the nationally determined contribution (NDC) to reach Forest and Land Use (FOLU) net sink by 2030 as part of the Long-Term Strategy for Low Carbon and Climate Resilience 2050 published before the UNFCCC in 2021 (Government of Indonesia, 2021). The GoI has taken significant steps in the land use sector to reduce emissions, such as introducing a moratorium on clearing primary forests and new palm oil licenses. To implement the climate change commitment stipulated in the NDC, the GoI adopts several principles, one of which is through "…highlighting existing best practices: recognizing significant strides in multi-stakeholder efforts in combating climate change, Indonesia intends to scale up the diversity of traditional wisdom as well as innovative climate change mitigation and adaptation efforts by the government, private sector, and communities..." (Government of Indonesia 2021:2). In addition, the GoI is developing a national registry system to monitor the achievement of emission reduction targets. The registry system has an interim target in 2024 to provide most of the required data to prepare the national climate change communication as required by the UNFCCC on the transparency framework.

The NDC recognizes the vital role of companies in meeting the climate change targets. It is unclear if the GoI has changed its stance on the corporate zero-deforestation commitment, although early indication shows that the deforestation trend in Indonesia has been declining in the last five years, partly due to the slowing oil palm expansion (Gaveau et al 2022). Corporate zero-deforestation, or more generally NDPE, is arguably an existing best practice of the companies. One agenda is, therefore, to align corporate zero-deforestation commitment with the climate change targets of the GoI.

7.7. Some recommendations for change agents

I would like to offer some ideas for government officials, companies, and NGOs. For the GoI, dealing with the impact of smallholder oil palm expansion can become a priority agenda. Smallholder contribution to forest conversion is smaller than industrial plantations (Lee et al. 2012). Therefore, policies to clarify land rights and improve smallholders' access to resources, technologies, and markets can help small farmers to innovate more quickly. The GoI can increase its support for smallholder sustainability certification using the CPO Fund. It is important to note that productivity and yield improvements must be in tandem with careful monitoring and regulation of land conversion. The primary purpose is to prevent environmental damage from expanding oil palm estates through land conversion. The GoI can support smallholders in tandem with the companies. For example, the GoI can follow up on the result of the participatory mapping by the companies.

Palm oil companies can conduct three major activities. First, the companies can improve their traceability program by engaging more with suppliers. Companies with zero-deforestation commitments have a high proportion of palm oil traceable to own plantations. Engaging with suppliers can improve the traceability to the plantations of the suppliers. By engaging more with indirect suppliers, the companies can also anticipate potential issues caused by linked companies; the companies belong to the suppliers but have no supply chain

relationship. Second, since the companies also receive fresh fruit bunches from smallholders, the companies can create an equitable partnership that enables them to conduct agricultural practices, improve productivity and yield, and support their readiness to go into certification. Third, the companies have shown some success with their vertical constituency-building programs. The companies can do more horizontal constituency-building strategies, for example, through the association of palm oil companies (GAPKI).

The role of NGOs as watchdogs is critical in the quest toward sustainable pathways. Therefore, maintaining and improving the capacities to exercise their part is essential. Since the technologies to detect forest cover change are improving, the following agenda would be to monitor changes in the plantation concession areas and the ownership structure of the plantations to attribute the land cover change. NGOs can join forces among themselves to provide more significant resources for acquiring data on corporate ownership. They can also collaborate in conducting ground-truthing to identify the actual forest cover change and concession boundaries. Therefore, they can provide more solid evidence on their complaints about the conduct of the companies or suppliers that could breach the zero-deforestation commitment of the palm oil companies.

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Annexes

Annex 1. Main government regulations influencing the palm oil sector in Indonesia

Policy realm	Type of regulation	Number	Scope	Type of interactions		
				Disconnects	Complementarities	Antagonisms
Finance	Central government law	Law No. 39/2014 on plantations, which revokes Law No.18/ 2004	Relating to both direct and foreign plantation development investment, this law sets requirements for the establishment and financing of oil palm plantations.		Complements land-use regulations for plantation development, and requirement to develop 20% of total plantation area as community plantations.	
	Presidential regulation, Ministerial regulation	Presidential Regulation No. 61/2015 on the collection and use of CPO funds	The regulations specify how plantation funds, primarily those deriving from levied CPO exports, are collected, managed, and used. The regulations stipulate the use of funds to support human resource development, research and development, replanting, and biofuel production incentives. Defines the scope of fund use for replanting, and how standard costs for replanting are determined.	Lack of mechanisms to align the use of collected funds to encourage the uptake of more sustainable production practices by oil palm growers. Lack of performance indicators and mechanisms to evaluate the use of funds against expected objectives.	Different company-initiated schemes are emerging that create scope for synergy with CPO funding for smallholder replanting and assisting farmers during grace period.	Farmers are forced to get commercial loans to meet the standard costs of replanting, as set by the authorities. In practice, a large proportion of funds flows to subsidize large-scale corporations in their production of biofuels.
		Presidential Regulation No. 24/2016 on the collection of plantation funds				
		Minister of Finance's Regulation No. 84/ PMK.05/2017 on the use of CPO Fund for replanting				
	Bank of Indonesia regulation	Bank of Indonesia Regulation No. 14/15/ PBI/2012 on the assessment of commercial bank asset quality	Provides guidelines for financial service providers to adopt ESG principles. Mandates banks to adopt prudent principles and to base credit assessments on business prospects, including debtor's performance in	Financial institutions have adopted diverse definitions of sustainability principles and criteria.	Increased adoption of sustainability policies embodying environmental and social responsibility by financial institutions and oil palm companies.	

			controlling and managing environmental impacts.			
	OJK regulation	Regulation of Financial Services Authority No. 51/POJK.03/2017 on the application of sustainable finance for financial services institutions, issuers, and publicly listed companies	The regulation was formed to accommodate the Roadmap for Financial Sustainability in Indonesia 2015–2019. The regulation introduces guidelines for implementing sustainable financing, and OJK mandates each implementer to submit and implement financial sustainability action plans.		Sustainability action plan should contain policies and procedures in accordance with international financial sustainability principles.	
Trade	Ministerial regulation	Finance Minister's Regulation No. 133/PMK.05/2015 on tariff and levies on exported CPO and derivatives	The regulation sets out 24 palm oil and/or crude palm oil derivative products, and the export tariff per ton in USD for each product.	Lack of efficient mechanisms to redistribute export taxes and levies to oil palm producing regions, based on performance.	Complements fiscal policies aimed at incentivizing intensification and biodiesel production.	
		Minister of Trade's Regulation No. 54/M-DAG/PER/7/2015 on verification or technical traceability of palm oil and its derivative products	Provides guidelines for verification and traceability of palm oil and its derivatives. Sets a procedure for verifying or tracing how the exported CPO is meeting administrative, physical, and technical requirements. Stipulates three different ways in which CPO and its derivatives can be traded, through segregation, mass balance, and book claim.	Lack of efficient mechanisms to redistribute export taxes and levies to oil palm producing regions, based on performance. Neither regulation provides detail on how to ensure CPO products are derived from sustainable sources, which some importing countries check against traceability aspects.	Complements fiscal policies aimed at incentivizing intensification and biodiesel production.	
		The Minister of Agriculture's Regulation No. 11/Permentan/ OT.140/3/2015 on the Indonesian Sustainable Palm Oil (ISPO) certification system			Importing countries adopt import policies that primarily rely on international standards (i.e. RSPO, ISCC) to verify that the palm oil and its derivatives have originated from a sustainable supply source.	Consumer goods companies set market constraints that do not recognize ISPO as a reliable system to ensure sustainable sourcing and zero deforestation.
Fiscal	Law and presidential regulation	Law No. 33/2004 on fiscal balance between central and regional governments	Provides the legal basis for a mechanism for revenue sharing between central and regional governments.			No mechanisms are in place to provide oil palm producing regions with fiscal incentives, based on environmental performance and adoption of sustainable palm oil practices.
		Presidential Regulation No. 24/2016 on the collection of plantation funds	Through the presidential regulation, funds derived from CPO exports are	Compliance with sustainability practices is not a condition for fund		

			collected and distributed to support various programs promoting oil palm plantation development.	disbursement.		
Production	Law and government regulation	Law No. 23/2014 on regional autonomy	Local governments are granted power to manage natural resource sectors.	Reorganization causes lack of local government capacity to promote sustainable practices in the oil palm sector.	Power to affect forest conversion and oil palm development is shared between provincial and district governments, improving checks and balances.	
		Government Regulation No. 18/2016 on local government organization	Governors are granted more power to coordinate forestry affairs, including licensing, forestry management, and spatial plans. Heads of districts continue to issue licenses for estate crops, including oil palm plantations.			
	Law and government regulation	Law No. 39/2014 on Plantations	Defines, among other things, sustainability principles in the plantation sector and the role of the authorities in issuing licenses. Companies are obliged to develop plantations over entire concessions within six years of receiving their license; otherwise, the land is returned to the state.	Management performance is not judged in accordance with how growers perform in adopting sustainability practices, but rather the extent to which their established plantations respect the boundaries of their granted concession.		The regulation contradicts private sector attempts to set aside areas for conservation using international recognized methods and criteria (e.g. HCV and HCS).
		Government Regulation No. 11/2010 on control and authority over abandoned land	This regulation states that lands not used as stipulated in the license become abandoned lands, which the state has the authority to take back.			
	Ministerial regulation	Ministry of Agriculture's Regulation No. 11/2015 on Indonesian sustainable palm oil (ISPO) certification systems	The regulation outlines a procedure for certification under ISPO and specifies principles and criteria for sustainable production of palm oil, processes for certification, assessment, and decision making, and mechanisms for conflict resolution. Sanctions are	Sustainability is mainly defined based on the extent to which growers or mills comply with regulations on plantation management, land, environment, labor, and community empowerment.	Major gaps with RSPO standards, relating to setting aside HCV areas, conducting FPIC for plantation development and adopting independent monitoring and verification systems.	While the criterion of "unproductive land" is adopted in the regulation, oil palm plantations with HCV/ HCS continue to be ISPO certified. The regulation is not in line with zero deforestation commitments.

			applied to those failing to become ISPO certified, including downgrading of plantation classification and revoking of licenses.			
	Ministerial regulation	Ministry of Agriculture's Regulation No. 29/Kpts/KB.120/3/2017 on the guidance on smallholder oil palm replanting with support from CPO Fund	Provides guidance for smallholder replanting, human resource development, and establishment of means and infrastructure, with support from the CPO Fund. The Fund can be used to support various farmer empowerment programs, in line with local government development plans.	The regulation sets indiscriminate eligibility criteria, which most independent smallholders are unlikely to meet. It also fails to fully consider the diversity of growers.	Complements company efforts to provide support to independent smallholders. Local governments can also make use of the CPO Fund to facilitate replanting by smallholders.	CPO Fund targets smallholder plantations without adequately distinguishing independent and schemed smallholders.
Land use	Law, government regulation, ministry regulations	Government Regulation No. 10/2010, Government Regulation No. 104/2015, and the Minister of Forestry's Regulation No. P.51/ Menlhk/Setjen/KUM.1/ 6/2016 on the procedure for forest conversion and changes in forest area functions	The first set of regulations legalizes the use of forests and the conversion of forestland for other non-forestry purposes. They specify that production forests that can be converted into plantations or oil palm may include forested or non-forested areas. While "non-productive" is mentioned as a criterion for forests that can be converted, there is no detailed elaboration of how exactly this is defined, vis-à-vis the type of vegetative cover, nor the amount of carbon and biodiversity stored within an area of land. The second set of regulations provide a legal basis for the setting aside of areas within oil palm plantation concessions. Similar to	Internationally recognized certification standards, including zero deforestation commitments, rely on forest areas with high carbon and biodiversity values being maintained within concession areas.	There is increased attention within public policy on the development of criteria for lands suitable for conversion to plantations, and essential ecosystem areas to be protected from conversion. This complements private sector attempts to use HCV and HCS instruments when managing their plantations and lands.	During spatial planning processes, district decisions to allocate lands for plantations are not fully in accordance with the criteria set to protect high carbon stock and biodiversity values. The criteria for determining which forests can be converted into plantations are not fully in line with the no deforestation commitments of the private sector.
		Law No. 5/1990 regarding the conservation of natural Resources, Law No. 23/1997 regarding environmental Management, Environmental Minister's Regulation No. 29/2009 regarding guidelines for the conservation of biodiversity at local level				

			HCV, those areas with high conservation value, and of ecological, social, and cultural importance – referred to as essential ecosystem areas–are declared as lands where conversion needs to be prevented.			
	Law	Law No. 26/2007 on spatial planning	The law outlines procedures for allocating lands across various production and conservation zones for use at different levels (national, provincial, and district) of government. In addition, it includes guidelines on spatial planning, implementation, and oversight.	Conversion of forested lands to plantations is allowed, as long as these lands are within allocated lands (e.g. within the convertible production forest category).		Local government bodies are granted power to review their spatial plans and make changes to land use, which may contradict national priorities.
	Law and government regulation	Law 32/2009 on the protection and management of the environment and Government Regulation No. 71/201423 or No. 57/2016 on the protection and management of peat ecosystems	The law and government regulations set procedures for planning and managing peat ecosystems, determining which peatlands are to be protected and which are to be used for plantations (cultivation).		Stricter requirements to protect peatlands from conversion, which complement commitments related to preventing the expansion of plantations into peatlands.	
	Law and government regulation	Law No. 18/2013 on the prevention and control of forestland encroachment	Provides a basis for preventing and tackling forestland encroachment, such as oil palm expansion into forestland. Forest clearance to make way for oil palm plantations (and other uses) without the Ministry's consent is considered a criminal act, subject to penalties. Provides an opportunity for companies, whose plantations are found to	Preventing encroachment onto state forestlands is not necessarily linked to institutional mechanisms for ensuring the maintenance of forests within those lands.	Corporate efforts to clean up supply chains require clearer signals from government to avoid encroachment onto state forestlands.	Companies that cleared forests for oil palm plantations without a permit may be exempt from punishment by presenting procedural failures during planning processes as their reason.
		Government Regulation No. 104/2015 on procedures for forest conversion and forest function changes				

			be in forestland, to apply for a retrospective permit from the Ministry, as long as the reason for a lack of permit is because of governmental errors resulting from spatial planning processes			
	Presidential regulation, ministerial regulation	Presidential Regulation No. 88/2017 on the resolution of tenure issues over state forestlands Minister of Environment and Forestry's Regulation No. P.83/ Menlhk/Setjen/Kum.1/ 10/2016	This regulation outlines mechanisms for resolving tenure issues when people, either individually or in a group, illegally control state forestlands and use them for settlements, public and social facilities, and plantations. Mechanisms include land exchange, conversion of forests into lands that can be legally used, resettlement, and granting access rights over lands through social forestry schemes. Lands may be dedicated for agricultural use and can become legally used for non-forest purposes. In such cases, farmers who have been in control of lands for more than 20 years may be granted ownership rights, with access rights granted if control over lands has been less than 20 years.	Improperly implemented, policies for resolving tenure issues will encourage a rise in smallholder illegalities, which makes state and company efforts to regulate illegal supply more difficult.	Legalizing the tenure of lands with existing oil palm plantations complements efforts to grant incentives and financial resources to smallholders to improve production practices. This can also facilitate efforts to put in place more transparent traceability systems in production areas where illegal tenure rights were prevalent.	Securing smallholder tenure through social forestry schemes will contradict private sector attempts to ensure larger volumes of supply from smallholders, as social forestry schemes require smallholders to stop planting oil palm and instead depend more on other forest-based livelihood options.
	Presidential instruction	Presidential Instruction No.6/2017 on the postponement and improvement of governance in the issuance of new business licenses over primary forests and peatlands	Instructs certain government ministries and local government heads to postpone the granting of new business licenses on primary forests and peatlands. Includes reviewing licenses already granted	The policy only targets primary forests and peatlands, disregarding secondary forests, which are forests subject to conversion to agricultural uses.	The instruction puts in place the legal and institutional mechanisms to halt oil palm expansion in primary forests and peatlands.	Companies working in the moratorium "no-go areas" whose permits have already been granted continue to operate, with no legal constraints.

			on moratorium areas, improving policies relating to forest conversion and forest business utilization, and intensifying ecosystem restoration programs, taking actions to reduce emissions from primary forest and peatlands, and issuing relevant environment licenses. Governors and district heads are instructed not to issue new permits on forestlands and peatlands located on moratorium area map.			

CPO, crude palm oil; ESG, environmental, social and governance; FPC, free, prior and informed consent; HCS, high carbon stock; HCV, high conservation value; ISCC, International Sustainability and Carbon Certification; ISPO, Indonesian Sustainable Palm Oil; RSPO, Roundtable on Sustainable Palm Oil.

Annex 2. Private sector sustainability initiatives influencing the palm oil sector

Policy realm	Type of incentives	Number	Scope	Type of interactions		
				Disconnects	Complementarities	Antagonisms
Principles	Principles for responsible and sustainable investment	EP, established in 2003, with a third interaction launched in 2013	The EP is a risk management framework adopted by financial institutions to determine, assess, and manage environmental and social risk in project finance. It is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making.		Responsible finance principles adopted by OJK in its regulation on sustainable financing in Indonesia.	
	SCC, some technical guidance was updated in 2015	The "Soft Commodities" Compact was developed in partnership with the CGF. It aims to mobilize the banking industry to help corporations to achieve ZND by 2020.			Complements RSPO. Approaches to implement ZND prioritize avoiding the conversion of HCV/HCS forests.	
Pledges and commitments	Zero deforestation pledges	CGF, net zero deforestation pledge issued in 2010	A private sector platform that brings together approximately 400 members consumer goods manufacturers and retailers in pursuit of business practices for efficiency and positive change. The main environmental sustainability goal is to achieve ZND by 2020 through the responsible sourcing of commodities.		Stimulates compliance with RSPO, protection of HCV and HCS, adoption of FPIC, and no new developments in peatlands.	
		NYDF, issued in 2014	A non-legally binding political declaration that grew out of dialog between governments, companies, and civil society, spurred by the Secretary General's Climate Summit. The goal is to halve natural forest loss by 2020, and to end it by 2030.	Companies' traceability systems are difficult to apply in areas where illegal land tenure persists.	Complements company-specific policies around NDPE, and the RSPO certification system.	Contradicts plantation regulations that prevent the setting aside of HCV and HCS areas.
		ESPO, established in 2015	Project to promote the uptake of sustainable palm oil in Europe. The ESPO works on sustainable palm oil with national palm oil initiatives, as well as the RSPO and umbrella EU associations. Their commitment is to support 100% sustainable palm oil in Europe, under RSPO, by 2020.	Acknowledges the work done by ISPO and MSPO, but not formally endorsed.	Adopts RSPO certified (or equivalent) as a minimum to advance expected targets.	

		SPOM, issued in 2014	An initiative of five palm oil producers. SPOM members committed to: (i) no deforestation, (ii) protect peat areas, and (iii) drive positive socio-economic impact for people and communities. This group announced an immediate moratorium on the clearance of HCS forests, subject to a study and harmonization of HCS criteria with HCS+.	The HCS Convergence Process led to a unified approach between HCSA and HCS+ to implement ZD commitments.	Resulted from the NYDF influencing major corporate groups with oil palm plantations in Malaysia.	
		IPOP, issued in 2014 and disbanded in 2016	Pledge made by five major corporate palm oil groups. IPOP pledged to: (i) improve environmental stewardship, (ii) encourage development of policies and legal and regulatory frameworks to promote zero deforestation, (iii) expand social benefits, and (iv) improve the competitiveness of palm oil.		Resulted from the NYDF influencing major corporate groups with plantations in Indonesia.	Disbanded when the Government of Indonesia accused IPOP of cartel practices.
Codes of conduct	Companies' sustainability policies	Individual commitments to NDPE adopted by corporate groups since 2013	Major corporate groups (e.g. Wilmar, GAR) have committed individually to support sustainable palm oil supply through a NDPE policy, with implementation approaches that are specific to each corporate group.	Lack of alignment of implementation approaches, cutoff dates and targets across corporate groups.	Commitments to halt developments on HCS and HCV areas, and FPIC.	
Voluntary standard systems	Certification systems	RSPO, established in 2004	A multistakeholder system that develops and applies a set of environmental and social criteria to comply with CSPO. Engages and commits all stakeholders throughout the supply chain.	Gaps persist with national mandatory standards (ISPO and MSPO).	Consumer countries adopt import policies that rely on voluntary standard systems (i.e. ISCC, RSPO) in order to verify that supply originates from sustainable sources.	
		ISCC, established in 2006	Independent multi-stakeholder organization to engage producers and buyers on the implementation of ecological and social sustainability in supply chains and respond to the monitoring and control of GHG emissions, mainly linked to the EU-RED.			

CGF, Consumer Goods Forum; CSPO, Certified Sustainable Palm Oil; EU-RED, EU Renewable Energy Directive; ESG, environmental, social and governance; FPIC, free, prior and informed consent; GHG, greenhouse gas; HCS, high carbon stock; HCSA, High Carbon Stock Approach; HCV, high conservation value; ISCC, International Sustainability and Carbon Certification; IPOP, Indonesian Palm Oil Pledge; ISPO, Indonesian Sustainable Palm Oil; MSPO, Malaysian Sustainable Palm Oil; NDPE; no deforestation, no peat, and no exploitation; NYDF, New York Declaration on Forests; OJK, Indonesian Financial Service Authority; RSPO, Roundtable on Sustainable Palm Oil; SPOM, Sustainable Palm Oil Manifesto; ZD, zero deforestation; ZND, zero net deforestation.

Annex 3. Sources of information

	Activity	Date
1	Interview with IPOP Secretariat	8 June 2017
2	Interview with Company 1	1 October 2017
3	Interview with Local NGO 1	2 October 2017
4	Interview with Smallholder association 1	3 October 2017
5	Interview with Provincial government officer 1	4 October 2017
6	Interview with Provincial government officer 2	4 October 2017
7	Interview with Provincial government 3	4 October 2017
8	Interview with District government 1	5 October 2017
9	Interview with RSPO Secretariat	15 November 2017
10	Interview with International organization 1	28 February 2018
11	Interview with Provincial government 4	1 March 2018
12	Interview with International organization	2 March 2018
13	Interview with Local NGO 2	3 March 2018
14	Interview with University 1	3 March 2018
15	Interview with Smallholder association 2	5 March 2018
16	Interview with International NGO 1	5 March 2018
17	Interview with Consulting company	16 March 2018
18	Interview with Company 2	18 March 2018
19	Interview with District government 2	26 July 2018
20	Interview with International NGO 2	6 March 2018
21	Interview with National NGO 1	4 March 2018
22	Interview with Industry association 1	28 July 2018
23	Interview with Provincial government 5	29 July 2018
24	Interview with Provincial government 6	2 August 2018
25	Workshop: Industry association 2, Company 3	17 September 2019
26	Workshop: Industry association 3, Company 3	26 September 2019
27	Workshop: Company 2, Company 3, Company 4, NGOs, ISPO	27 September 2019

Summary

This dissertation is about the rise and development of corporate self-regulation of the palm oil business in Indonesia aimed at zero deforestation. Self-regulation is a fascinating subject not only because of how and why it emerged but also in its interactive character with public and private regulation governing sustainable palm oil.

The research aims to address two knowledge gaps in studies of governance of the palm oil sector. First, very few scholarly studies have taken palm oil companies as the central research subject and focused on self-regulation. Second, there is a lack of a contextual or regime complex perspective, showing how companies navigate their self-regulation around different actors and regulatory frameworks. The main research question is: How do the palm oil companies with zero-deforestation commitments navigate the dynamic Indonesian palm oil regime? Answers to this question were provided by formulating three sub-questions. First, what are the specific dynamics and complexities of the Indonesian palm oil regime? Second, what strategies have palm oil companies developed to respond to governmental regulations and pressures? Third, what strategies have palm oil companies designed to respond to pressures and complaints from NGOs?

Regime complex and corporate political activity are the primary theoretical lenses to generate insights on how palm oil companies committed to zero deforestation navigate between or across various regulatory frameworks and actors. The case study was used as the primary methodological approach to present and analyze the strategies of palm oil companies to navigate around and respond to public regulations and pressures, and complaints from NGOs.

The first case study elaborates on the various regulatory frameworks shaping the palm oil sector. The case identifies existing regulatory frameworks in different domains that deal with three performance

issues in the sector: pervasive land conflict and informality, the yield gap between companies and smallholders, and high carbon debt due to deforestation and peatlands conversion. Further, the interactions of these regulatory frameworks were analyzed to show three characters: complementarities, disconnects, and antagonism. The study shows that the interactions provide opportunities and challenges for the palm oil companies to navigate their self-regulatory frameworks within the palm oil regime complex.

The second case study focuses on the sustainability pathways of the palm oil sector in Indonesia, with Cameroon and Colombia as a comparison. By conceptualizing sustainable pathways as trajectories that connect technical, environmental, and governance practices that reinforce each other, the case shows that there is no single pathway for actors in the palm oil sector toward sustainable oil palm production. Instead, the historical development of the palm oil sector, changes in the political regime, and political frames of the issue together define the scope for sustainable pathways in a country. Furthermore, different forms and combinations of regulation exist in different countries, as the involvement of different actors in the palm oil sector in, for instance, Indonesia is not necessarily the same as the one in Columbia and Cameroon.

The third case study discusses the rise and decline of a collective commitment toward deforestation-free palm oil production. Called the Indonesian Palm Oil Pledge (IPOP), the initiative started in September 2014. IPOP rose due to the risks through the pressures from the NGOs to make the palm companies accountable for deforestation. Simultaneously, the IPOP responded to the opportunities to show leadership in a global agenda to reduce and end deforestation. The IPOP conducted horizontal constituency building and sought public regulatory support for their agenda as their main political objective. The Indonesian national government, however, expressed adverse reactions due to the idea that the IPOP undermined smallholder development, that the IPOP was driven by foreign agenda, and that

IPOP would become too powerful in controlling Indonesia's palm oil value chains. The paper shows that global value chain analysis should go beyond interfirm coordination and pay attention to the role of the state in global value chain analysis.

The fourth case extended the timeframe of the corporate zero-deforestation commitment into three episodes: before, during, and after the IPOP. By distinguishing the self-regulation in three episodes, the case shows that the palm oil companies navigate around the external pressures from the government by strategically choosing the level of participation and political strategies that could provide the policy and firm outcomes beneficial for the companies. First, during the IPOP, the companies formed a collective commitment to amplifying their commitment. Meanwhile, before the IPOP, the companies took individual participation levels to consolidate their commitment. After the IPOP, the companies committed individually to avoid an adverse reaction from the government. Second, in the constituency-building strategies, the IPOP adopted horizontal constituency building to bring new members from the level of value chains. After the IPOP, the companies focused on vertical constituency building by intensifying their engagements with suppliers. This case also brings new insights into the role of NGOs as allies and watchdogs of the corporate zero-deforestation commitment.

The fifth case study discusses the strategizing of the palm oil companies in navigating around the complaints of NGOs. The palm oil companies receive complaints from NGOs criticizing the companies for alleged violations of the corporate zero-deforestation commitment. These complaints pose reputational risks to the companies. The companies respond by obtaining information about the complaints, clarifying the situation, and formulating a response to the protests. The companies mostly deny the complaints or blame someone else. Interestingly, the companies use the information to persuade their suppliers or those connected to the allegations. In this case, the companies turn the threat posed through the complaints into

opportunities for constituency building in their quest to achieve deforestation-free palm oil production.

The findings from the case studies form the answer to the research question. The palm oil companies navigate the palm oil regime complex, an arena in which different actors and regulatory authorities set overlapped boundaries for the companies. As such, these regulations may pose opportunities and risks to the companies. The companies also have to face the critics from NGOs. They have applauded the zero-deforestation commitment of the companies but also closely watched the implementation on the ground. The companies have the strategic flexibility to anticipate opportunities and react to challenges, such as switching between individual and collective commitments, and playing different political strategies.

About the Author

Ahmad Dermawan has an interdisciplinary background, including agribusiness, development, and resource economics. His research interest ranges from the economics and policy aspects of forestry and extra-sectoral influence, decentralization, timber industry, timber plantations, financial governance and corruption, and the governance of the palm oil sector. His primary geographical expertise in Indonesia and Southeast Asia includes works on timber plantations in Vietnam, the pulp and paper sector in China, and land-use changes in Laos.

He started working at the Center for International Forestry Research (CIFOR) in 1998 as a research assistant before completing his undergraduate study in Agribusiness at Bogor Agricultural University. He became a full-time CIFOR staff in 2001. Ahmad holds a master's degree in Development and Resource Economics from the Agricultural University of Norway in 2004. He is currently a member of a global research team on Sustainable Value Chains and Finance.

During his time at CIFOR, Ahmad has led or participated in several research projects on the impact of the 1990s economic crisis, decentralization, timber trade in the Asia Pacific region, risk of corruption in REDD+, the effect of new investment in forest frontiers, smallholder timber plantations in Indonesia and Vietnam, informal timber sector, bioenergy, forest and the global bioeconomy, governing oil palm landscape, and trade, development, and environment. In addition, Ahmad has published numerous journal articles and CIFOR in-house publications.

Ahmad started his Ph.D. research in 2015 on corporate zero deforestation commitment in the palm oil sector. His Ph.D. research was part of the INREF-funded SUSPENSE program on the identification of sustainable pathways for the production, processing, and governance of palm oil and the NWO-funded program on the Next Generation of Global Value Chains. Both programs focused on sustainable palm oil.

List of Relevant Publications

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Nurrochmat, D.R., Dharmawan, A.H., Obidzinski, K., Dermawan, A., Erbaugh, J.T. 2016. Contesting national and international forest regimes: Case of timber legality certification for community forests in Central Java, Indonesia. Forest Policy and Economics 68: 54-64.

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Ahmad Dermawan

Wageningen School of Social Sciences (WASS)

Completed Training and Supervision Plan

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
Interdisciplinary themes in food and sustainability: responsible business conduct	PAP	2021	3
Research Methodology: From topic to proposal	WASS	2015	4
Qualitative Research: Strategies and Procedures (YRM60806)	WUR	2015	3
Writing Research proposal	WASS	2016	6
B) General research related competences			
Data management planning	WUR Library	2015	0.4
WASS Introduction Course	WASS	2015	1
Scientific Writing	WGS	2015	1
Information Literacy PhD including EndNote Introduction	WUR Library	2015	0.6
Reviewing a Scientific Paper	WGS	2019	0.1
Essentials of scientific writing and presenting	Wageningen In'to Languages	2018	1.2
C) Career related competences/personal development			
Project and time management	WGS	2018	1.5
Supervision of master student	WUR	2017-2020	4
'Biodiesel berbasis sawit di Indonesia: Antara harapan dan tantangan'	Palm oil-based biodiesel in Indonesia: Opportunities and Challenges, Depok, Indonesia	2016	1

'Implication of formalization in the timber sector in Indonesia'	IUFRO	2016	1
'Next generation of business and finance schemes for smallholders'	WUR-CIFOR	2017	1
'Enhancing Coherence in the Utilization of the CPO Fund for Biodiesel Development in Indonesia'	CIFOR-FOERDIA	2018	0.5
'Palm oil companies navigating between the laws and forests'	University of Leiden	2018	1
'The future of palm oil in Indonesia (?)'	Jakarta Foreign Correspondent Club	2019	1
'Navigating the implementation of no-deforestation commitment: Findings from the ground'	CIFOR	2019	1
'Turning threats into opportunities: An analysis of the response of palm oil companies implementing no-deforestation commitment to NGO complaints'	University of Tampere	2021	0.5
'Governing sustainable palm oil supply: Disconnects, complementarities, and antagonisms between state regulations and private standards'	Society of Indonesian Environmental Journalists	2021	0.5

'Data Perhutanan Sosial mendukung Pembangunan Kehutanan Berkelanjutan' (Social forestry data to support sustainable forestry development)	Central Statistical Agency, Indonesia	2021	0.5
'Turning threats into opportunities: An analysis of the response of palm oil companies implementing no-deforestation commitment to NGO complaints'	International Society of Ecological Economics	2022	0.5
Moderator, International Student Science Conference	WASS	2015	0.2
Chair session, IUFRO conference	IUFRO	2016	0.5
Facilitator, seminar on "Optimalisation of CPO Funds towards sustainable oil palm development"	Ministry of Environment and Forestry, Indonesia	2017	0.2
Coordinator, workshop on "Next generation of research and development in the field of sustainable agriculture and development"	WUR-CIFOR	2017	1
Coordinator, Expert meeting on "A Roadmap for the future of Indonesia's forests: High impact partnerships to promote zero-deforestation"	CIFOR	2019	1
Concept Note Writing	Ministry of Finance, Indonesia	2020	1
Determination of regional leading sector	IPB University, Indonesia	2021	0.5
How to visualize data into a meaningful insight	Kognisi, Indonesia	2021	0.1
Adjudicator (jury): 18th Economix: Global economic challenges	Faculty of Economics and Business, University of Indonesia	2021	0.2
Total			**39.0**

*One credit according to ECTS is on average equivalent to 28 hours of study load

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