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# **Sustainability pathways of oil palm production: a comparison of Indonesia, Colombia and Cameroon**

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**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.

## **1. Introduction**

Oil palm (*Elais guineensis*) is a versatile crop with many industrial uses, from food, energy, and a number of other industrial uses (Alonso-Frajedas et al. 2016). Oil palm has a number of comparative advantages over other vegetable oils. It has the highest oil yield, which could reach as high as ten times of the yield of soybean, rapeseed and canola oils. Oil palm also has the lowest land requirement to produce one ton of oil, and the lowest production cost per hectare (Corley and Tinker 2015). With only covering six percent of the total global agricultural land, oil palm production contributes to one third of global vegetable oil production. Oil palm also has a long life span. Oil palm 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°N and 15°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°C and maximum between 28 and 34°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 a flexible crop, oil palm is currently one of the most debated crops. For the key producing countries, oil palm has become an important contributor in the economy. Cultivation of palm oil 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 industries.

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.

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 in the deforestation.

Fayle et al. (2010) found that total ant species in oil palm plantations significantly decreased 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, that 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). 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 involves dispossession of land by violent group (Garcia-Ulloa et al. 2012, Maher 2015).

A number of governance initiatives have taken place to minimize the negative ecological and social impacts as well as to enhance positive impacts. Initiatives from public agencies, private multistakeholder process as well as corporate self-regulation to develop standards, best management practices, certification and corporate commitments emerge toward achieving sustainable and equitable oil palm development. Each country experiences different pathways in moving towards sustainable production of oil palm.

The paper aims to identify the pathways toward sustainable oil palm production in three countries: Indonesia, Colombia, and Cameroon. Indonesia and Colombia are the leading oil palm countries in the Southeast Asia and Latin America, respectively. While Cameroon is not the leading palm oil producer in Africa, its stage of development is similar with other countries in the region. The three countries may reflect the different stages of the development in the oil palm sector, different level of complexities of interactions across actors and governance challenges, as well as the progress toward sustainable oil palm production.

## **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, government and private sector actors set the production ambitions or targets for palm oil. On the consumer side, there are demands that oil palm is produced in sustainable manner, which are not destructive to the environment as well as respectful to the rights of the communities. Consideration on sustainability is important, however, the way they are defined and implemented may vary across places. This leads to a variety of pathways to sustainable palm oil production.

Sustainable pathways can be conceptualized as trajectories that connect technical, environmental, and governance practices that reinforce each other, and actors at different levels that regulate, manage, implement and monitor these practices toward sustainable production. This conceptualization has three components: sustainable production as the aspiration, a variety of practices that support each other, and actors at different levels with different roles.

Sustainable production can be seen as a vision or an ambition, a situation where actors aspire to. Generally they include not being destructive to the environment, and respect social conditions. It

is important to note that sustainable production itself is a dynamic concept, the scope of which is something that different actors do not always agree at different scale and time.

Sustainable pathways also involves the combination of technical, environmental, regulatory and governance practices that reinforce each other. In the oil palm context, this entails best management practices using the best materials and agronomic techniques. The practices adhere to the variety of regulations: public, private, and in some cases self-regulations. It also considers the land suitability conditions, land use change, and consideration to peat land. It is established through a process where communities around the plantations are informed and give their consent. It follows the public and private regulations.

Sustainable pathways involve different actors with different roles. Actors have different roles. Government is generally seen as regulator, but there are places where different levels of government play differently in their regulatory roles. Private sector actors implement the regulations, or set their own regulations. At the same time, they also manage resources, including making decision on the land use. Some other actors play the role of monitoring the practices of the private sectors. Smallholders is seen as both private sector actors from the entrepreneurship point of view, but also those who need empowerment as they have much more limited resources to carry out their practices. Positive interactions among them are key in achieving sustainable production.

There is no single pathway toward sustainable oil palm production. Pathways are context-specific. Different forms of regulations exist in different countries, where the involvement of different actors in the palm oil sector in Indonesia is not necessarily the same as the one in the other countries. Different countries also have different regulatory frameworks in place. Historical background, political vision, government understanding on the issue also matter. In Indonesia, public, private, and corporate self-regulation exist. In Colombia, private regulation dominates. Meanwhile, perhaps sustainability has not become an important policy agenda in Cameroon.

### **3. Oil palm production in three countries**

#### **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 grew faster by 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 the foreign investment. The Government of Indonesia, with the assistance of international donors, develop a variety of programs to boost the oil palm development. The introduction of programs for smallholders has increased the participation of smallholders in the oil palm sector. 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 finally regained the position as the world leading exporter of palm oil, surpassing Malaysia.

One of the factors that facilitate the expansion of oil palm in the key producers is the favorable government policies. While being the largest exporter, Indonesia is also one of the world largest consumer of palm oil in the world. Cooking oil, mainly palm-based, is one of the so-called 'nine essential products' so that the government protect its supply to ensure that domestic demand is met. This is one of the reasons the government has supported the increase in the palm oil production.

The government formulated policies to promote private sector investment as well as the involvement of smallholders into the palm oil business through a number of schemes since 1970s. Indonesia was famous with the introduction of a number schemes, such as nucleus-plasma and cooperative scheme. A number of other policy measures also support investments in the palm oil processing industries. More recently, the national energy policy provides rooms for palm oil-based biodiesel to flourish with the biodiesel mandates. These policies are targeted toward reaching a near term target of achieving 40 million tons of CPO production by 2020.

Indonesia also formulates policies to support the development of advanced palm oil processing industries. 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, more subsidies should be allocated for biodiesel.

Currently, the Indonesian palm oil sector is dominated by the large-scale private actors. Of the 11.5 million hectares of planted areas in Indonesia, about 5% of the country's land area, large-scale private companies control 5.9 million hectares. State-owned enterprises, which dominated the planted areas during 1960s-1970s, currently control 0.8 million hectares. In addition, there are 1,601 palm oil processing mills. The remaining 4.7 million hectares are controlled by smallholders. Smallholders account for 40 percent of the total planted area, the largest in the world in terms of smallholder oil palm in a country (Central Statistical Agency of Indonesia, 2015).

In Indonesia, palm oil yield varies across different business models (smallholders vs 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 unreliable seedlings. Meanwhile, smallholders under plasma scheme have their cultivation done by the nucleus companies. They have higher fresh fruit bunches yield by 15 percent compared to independent smallholders (IFC 2013). The best estates have the yield level around 6 tons of palm oil per hectare.

### 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 oleivera* that naturally grows in the 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 5% by 2008 (Pacheco 2012). Currently, Colombia has 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 to organize the growers and ensure the progress of oil palm development. Smallholders formed “Strategic and Productive Alliance”, where association of smallholders form a contract with the source of funding, usually large scale plantations (Potter 2015). There were 55 mills operating in Colombia, about half of which were relatively small (less than 15 tons fresh fruit bunches per hour). Thirteen mills have 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 million tons of palm oil in 2013. 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). 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).

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% biodiesel blending by the same year. A number of policies to reach the targets have been issued, for example 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 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). They 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 colonies, 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 2010, Cameroon has 190,000 hectares of oil palm producing 230,000 tons of palm oil. About 59,000 hectares are controlled by five agroindustries. Independent smallholders control about 100,000 hectares, and the rest are under contract private plantations. 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 palm oil net importer. Cameroon has become an interesting place for oil palm investment both to serve domestic and regional markets, as well as to serve demands from Europe. The availability of cheap land, political support from the government and the government 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 performance of smallholders in Cameroon is also poor. A study by Nkongho et al. (2014) found that only 35 percent of smallholders use certified seedlings, while the rest use either uncertified Tenera or Dura seedlings (Nkongho et al. 2014). Fertilizer application is similar, only 1.1 percent of smallholders apply fertilizer timely, and 68 of smallholders do not conduct fertilizers at all. The yield is quite low, smallholders only produced 7 tons of fresh fruit bunches per hectare.

#### **4 Identifying sustainability pathways**

The previous section highlights that these three countries have set targets for oil palm production. Each of the targets often implies a significant amount of expansion. These expansion mean either opening new land from forests, or other land uses would have to make ways for oil palm. This section discusses the sustainability issues that are emerging in each of the three countries, and how actors respond to these issues.

##### **4.1 Sustainability challenges**

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. Some of the environmental impacts of the oil palm expansion are deforestation, biodiversity loss, carbon stock losses and greenhouse gas emissions. 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 2000s also confirm the contribution of oil palm in the deforestation (Margono et al. 2012). However, there are disagreements on how much oil palm has contributed to deforestation. For example, study by Gunarso et al. (2013) show that undisturbed forests were only about five percent of the land converted to oil palm, smaller than some of the other studies have found (Miettinen et al. 2011; Margono et al. 2012). Meanwhile, in Colombia, about half of the oil palm plantations established in 2002-2008 came from areas previously classified as pastures, and less than 15% of the oil palm replaced natural vegetation (forests, savannah).

In terms of biodiversity loss, Fayle et al. (2010) found in their study in Sabah, Malaysia, that total ant species richness between forests and oil palm plantations decreased from 309 to 110. In general, conversion of habitat has decreased the number of forest species, where only 59 out of 309 forest species persist. Similarly, 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). Other studies in Indonesia also found similar results, that 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 will reduce 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 ton in one planting cycle (25 years) (Murdiyarso et al. 2009; Schrier-Uijl et al. 2013). The greenhouse gas intensity depends on the previous land use. In Colombia, the greenhouse gas intensity depend 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 and violent groups is one of key social impacts (e.g. Budidarsono et al. 2013; Maher 2015). Most of the countries with 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). Lack of smallholder involvement in the large-scale oil palm projects, together with poor working conditions are examples (Hoyle and Levang 2012). In Colombia, the social cost of oil palm involves dispossession of land by violent 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).

#### **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, Worldwide Fund for Nature and a number of actors explored the idea of establishing a Roundtable for Sustainable Palm Oil (RSPO). RSPO was eventually established in 2004. RSPO develops the principles and criteria of sustainable palm oil. It has a vision to transform markets to make sustainable palm oil the norm. RSPO has a mission to advance the production, procurement, finance and use of sustainable palm oil products; develop, implement, verify, assure and periodically review credible global standards for the entire supply chain of sustainable palm oil; monitor and evaluate the economic, environmental and social impacts of the uptake of sustainable palm oil in the market; and engage and commit all stakeholders throughout the supply chain, including governments and consumers. RSPO is voluntary for palm oil companies as well as the estates who wish to have their operations certified.

Currently there are eight RSPO 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). From these principles, there are a number of criteria and indicators against which a palm oil operation is evaluated. It is interesting to see that RSPO sustainability principles include adoption of best practices. While the principles and criteria are generic, countries develop their own national interpretation in order to ensure that the generic principles and criteria are relevant with national contexts. Colombia and Indonesia have their own national interpretations of the RSPO principles and criteria.

The government of Indonesia and Malaysia also establish the principles and criteria for sustainable palm oil. Indonesia established the sustainability standard, called Indonesian Sustainable Palm Oil (ISPO) in 2011, and it has been updated in 2015. In its consideration, the Government of Indonesia recognized that the plantation sector in Indonesia should be developed in accordance to a number of principles, such as sovereignty, sustainability, efficiency and fairness, as well as maintain environmental integrity. ISPO is aimed to ensure that oil palm planters and processing companies have applied the principles and criteria correctly and consistently to produce sustainable palm oil (Ministry of Agriculture Regulation 11 of 2015). Since ISPO is established as a regulation, it is mandatory for processing companies and large scale plantations. Some of the exceptions are for plasma and independent smallholders and eligible oil palm companies that produce palm oil to serve the renewable energy.

Similar to RSPO, ISPO also consists of a number of principles, criteria and indicators. The applicable principles and criteria is differentiated for 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. Despite not being mandatory, ISPO also specify the principles and criteria for plasma and independent 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 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 in Indonesia under the Indonesian Palm Oil Pledge (IPOP) initiative<sup>1</sup>. According to its website, 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 purpose of the pledge is that these companies recognize while the oil palm industry has contributed significantly to Indonesia's economic development, they can work with multiple stakeholders to find solutions to sustainable palm oil that is deforestation free, respect human and community rights, and deliver stakeholder value.

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<sup>1</sup> It is important to note that the members of IPOP has self-abolished 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 on how the three regulations - RSPO, ISPO, self-regulation (zero deforestation commitment) - exist at the same time. By May 2016, there are approximately 115 members of RSPO. 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 are 148 estates or mills that are certified under ISPO. The Government of Indonesia originally targeted that all actors had been certified by 2014, but the level of compliance is low. It was reported that by 2014, approximately 200 companies out of the 881 companies that are eligible pursue ISPO certification had registered, but only 67 of which were certified<sup>2</sup>. In addition to these, six large companies in Indonesia also join IPOP. Although the size of their plantations and the capacity of their mills are not known publicly, it is estimated these companies could control at least 90 percent of the CPO intake in Indonesia (AgroIndonesia 2015).

In Colombia and Cameroon, the discussion on sustainability is centered on RSPO compliance, although Colombia is more advanced in Cameroon in terms of engagement with RSPO. National interpretation of the RSPO principles and criteria exists for Colombia, and 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 their members gradually into certification (Potter 15). 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.

Meanwhile, as of 2016 there has been no RSPO members in Cameroon, and Cameroon also does not produce CSPO. Both Colombia and Cameroon might 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, 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. The same company was also allegedly violated the court order to suspend the operation due to complaint by local people (Greenpeace 2013).

### **4.3 Dynamics: actors, practices and regulations**

Decision making in the oil palm sector is very complex and involves different actors at different levels. The decision making involves three levels. First, it involves broad land use planning, in terms of whether or not allocate land for oil palm, and if so, where it would be located. The second is the decision making on permits, on whether a company or smallholders may or may not operate within the allocated land. Finally, the decision on estate planning, which takes place after the permit is issued by the government and obtained by the permit holder (Paoli et al.

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<sup>2</sup> 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>

2015). Although it looks simple, these decisions will influence the sustainability of the oil palm sector in Indonesia, as well as in Colombia and Cameroon.

These decisions are complicated by at least three issues. The first is related to the increasingly complex government regulations. In Indonesia, the decisions on land use planning go beyond ISPO, as the government who decides whether a particular area will be allocated for particular use. Spatial planning, however, has been a delicate and longstanding issue in Indonesia. Unclear spatial planning has been one of the most important problems in the palm oil sector in Indonesia. With decentralization taking place, decision to allocate land, issue permits for oil palm concession, or operational practices have made the palm oil sector in Indonesia heavily regulated. Similarly, in Colombia, there are competing land uses, and one of the factors that facilitate 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. This support has led to imbalance support of oil palm allocation in the Rural Capital Incentive program, compared to other commodities (Potter 2015).

The second issue is that there are various regulatory systems that coexist and could compete each other. RSPO and ISPO serve similar purposes, and have a number of similar principles and criteria. However, 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 (Ministry of Agriculture and RSPO Secretariat 2016). This might not be the case with Colombia and Cameroon, as these countries do not have the national public sustainability standards that is mandatory, although these countries have legislations that regulate how oil palm must be cultivated and processed.

However, with the establishment of 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", recognizing that the "...future development of oil palm cultivation and palm oil industry be based on sustainable practices that takes into account environmental as well as social considerations in order to create a balance between economic growth, better employment and income for the small holders". The Council, led by Indonesia and Malaysia, invites other countries to participate. This council could play a role to harmonize ISPO and the Malaysian Sustainable Palm Oil (MSPO) standards to become a new standard. If it is materialized, the new standard could provide a platform to stage another competition in standards between private regulation (RSPO) and intergovernmental regulation (CPOPC).

The complexity is becoming higher with the pledge of some giant palm oil groups, like Cargill, Wilmar, Golden Agro Resources and Musim Mas, 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 in Indonesia, it has implications on other countries. Depending on how each member company define and translate the commitment, it may or may not mean directly or indirectly expand oil palm in other countries without meaningful improvement in the practices. Since IPOP has been disbanded and each member carries out its own zero deforestation

commitment individually, it remains to be seen how each companies define, translate, implement the program and monitor its achievements.

The third issue is related to the implications of the existence of different regulatory systems into changes in the technical, land use and governance practices. Land use planning and how it is enforced has been a contentious issue in each of the countries. In Indonesia, the Plantation Law still requires that all land under concession are planted, including those with high conservation values. Governments may sacrifice forest cover to meet production and biofuel targets. Best management practices might still be a dream for independent smallholders, where they are trapped into vicious circle of low inputs, low production, and low income. Smallholders are also generally struggle to meet the requirements of both public and private regulations, and more so with some of the largest will not accept their products if these smallholders establish their plantations through deforestation.

## **5 Creating sustainability pathways**

Given the existing sustainability initiatives and their dynamics, one key insight from the description above is that the environmental and social impacts of palm oil expansion is common across the countries. However, the solutions to mitigate the impacts are not commonly agreed. Actors in Indonesia has embraced to the very complex solutions to mitigate the negative impacts. Colombia generally refer to the principles and criteria under the RSPO. Cameroon is lagging behind both Indonesia and Cameroon in embracing the pathways to sustainable oil palm production, although some efforts are geared toward moving to RSPO.

Taking lessons from Indonesia where all regulatory systems exist, there are some key issues to see how the pathways toward sustainability may emerge. The first is to find common vision across the sustainability initiatives, and cultivate them to find commonly acceptable principles. Indeed, the definition of sustainability is not rigid and is open for multiple interpretation. However, there are commonly agreed aspirations or ambitions with how sustainable oil palm production is conceptualized. All regulations have common vision to have palm oil produce with no harm to the environment, respect the traditional rights of the communities, and to improve the wellbeing of the communities.

When there is a common vision, the next step is to define the pathways or the actor-practice connection that reinforce the technical, land use, and governance practices. Within this, there are similarities as well as differences. Since sustainability standards have a principle of continuous improvements (refer to the principles in RSPO and ISPO), there will always be room for mutual recognition. Mutual recognition, in the global legal pluralism literature, is one of the ways to deal with the pluralism in the legal order (Berman 2009). In the palm oil sector, the efforts to get there have begun since ISPO is established in 2011. However, the common principles among regulations and its operational practices across different regulations might still be taking time to be reconciled.

At the actor level, the decision of some key actors to establish self-regulation might be related to the dissatisfaction in terms of how disagreements in the operationalization of the regulations affect their business or cultivation practices. In that sense, they then take the initiative to

establish self-regulation based on the business concerns of main issues in the oil palm sector. Whether or not they are sustainable according to the other regulatory systems is, however, an intimate issue, since the business decision to establish self-regulation may not only impact themselves, but also those along the supply chain, including smallholders. In this sense, different actors may eventually choose different pathways toward sustainable palm oil production.

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