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Sustainability: Palm Oil
Smallholders are Key to Meeting
the UN SDGs**

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Reducing Poverty, Improving Sustainability: Palm Oil Smallholders are Key to Meeting the UN SDGs

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Abstract

Smallholder farmers produce around 40 per cent of the world's palm oil, the most-traded vegetable oil. Smallholders play an essential role in developing country economies – most strikingly due to their success at reducing poverty and improving social benefits, particularly in rural areas in Southeast Asia. In Indonesian regions where palm oil is prevalent, the poverty rate is substantially lower. The cultivation of palm oil has led to proven benefits for the smallholders themselves and the local community. Incomes are high, job opportunities are plentiful, and the plantations improve health and education infrastructure.

However, palm oil smallholders are at risk of being cut out of global supply chains by Western regulatory bodies, primarily in the European Union. Appeasing wealthy (and politically powerful) farming interests in Europe takes precedence over keeping markets open and meeting broader commitments to the United Nations Sustainable Development Goals (UN SDGs). In doing so, the rich world demands more and more from smallholder farmers in developing nations – certification, contribution to climate goals, traceability. Nevertheless, the smallholders get nothing in return except threats to cut off their market access. This has been described by many, justifiably, as “green neo-colonialism”.

The EU's discrimination against palm oil smallholders is wide-ranging, including the EU Renewable Energy Directive (RED) II and the forthcoming Due Diligence Regulation imposing restrictions designed to undermine Indonesian palm oil in the global marketplace. Moreover, the EU has also attempted to impose tariff barriers, including antidumping claims and countervailing duties on Indonesian biodiesel in recent years.

Unfortunately, the EU does not consider the livelihoods of smallholders or economic development in the Global South. It is not open to genuine cooperation with developing countries to address deforestation (it prefers unilateral regulatory barriers). This policy brief elaborates on how palm oil smallholders contribute to desirable economic and social goals and how the approach of the EU is deliberately undermining those goals.

Keywords: Palm Oil Smallholders, SDGs, Poverty, Sustainability

JEL Classification: O4, Q1, R2

Part One: What is a Palm Oil Smallholder?

Smallholders play a vital role in the agricultural commodity sector, including palm oil. RSPO estimates that more than 7 million smallholders make a living from palm oil, and they collectively contribute almost half of total global palm oil production. Smallholders are a significant factor in major producing countries such as Indonesia and Malaysia, which represent 85% of the global palm oil supply (Rahman, 2020). In Indonesia, the total number of smallholders is 2,685,353 farmers, accounting for about 38 % of palm oil producers nationwide. In 2020, the total production of crude palm oil was approximately 49 million tons, of which 17 million tons or 35% was produced by smallholders (the percentage of production is lower than the percentage of land owing to smallholders having lower productivity than large plantations) (Directorate General of Estate Crops, Ministry of Agriculture Indonesia, 2019). There are roughly 300,000 smallholders in Malaysia, and in Nigeria, 4 million smallholders produce more than 85% of palm oil output (Ayodele et al., 2015). Across all producing countries, smallholders are disproportionately located in poorer and rural districts, meaning that the impact on poverty alleviation and community development is even more pronounced in a positive sense.

In Indonesia, smallholders are defined as farmers who hold plantation areas below 25 Ha. By Indonesian law, any farmer with a plantation area larger than 25 Ha is required to have a Plantation Permit, which declassifies him/her as a smallholder. Indonesian smallholders fall under two broad categories - plasma and independent smallholders, which will be examined in more detail in later chapters.

1.1. Global Definition of Smallholders

The definition of smallholder agriculture varies significantly across countries. The categorization depends on various factors, including living standards, land ownership, access to assets and agricultural resources, and share of family labor (UN FAO, 2017). Moreover, the typology of smallholders should be contextual, reflecting each country's historical and institutional system, and more importantly, taking into account their contribution to national and local economic development. Thus, an optimal approach would be for the international community, namely palm oil-consuming countries such as the EU, US, and the UK, to show flexibility for each country to ensure the interpretation does not lead to the exclusion of smallholders in the global supply chain.

The Food and Agriculture Organization (FAO) argues that a general and operational definition of small-scale food producers remains inconclusive as it often overlaps and is still used interchangeably with other terms such as “small-scale farmer”, “family farmer”, “low-input farmer”, and “low-income farmer”. Although not directly focused on the definition of smallholders, the framework of the World Agricultural Watch (WAW), run by the UN FAO, is working towards elaborating an international typology of agricultural holdings and is preparing country level guidelines for the identification of farm typologies. Meanwhile, the World Bank defines smallholdings as farms “with a low asset base and operating in less than

2 Ha of cropland”. This position, similar in some elements to the EU definition, remains an outlier internationally.

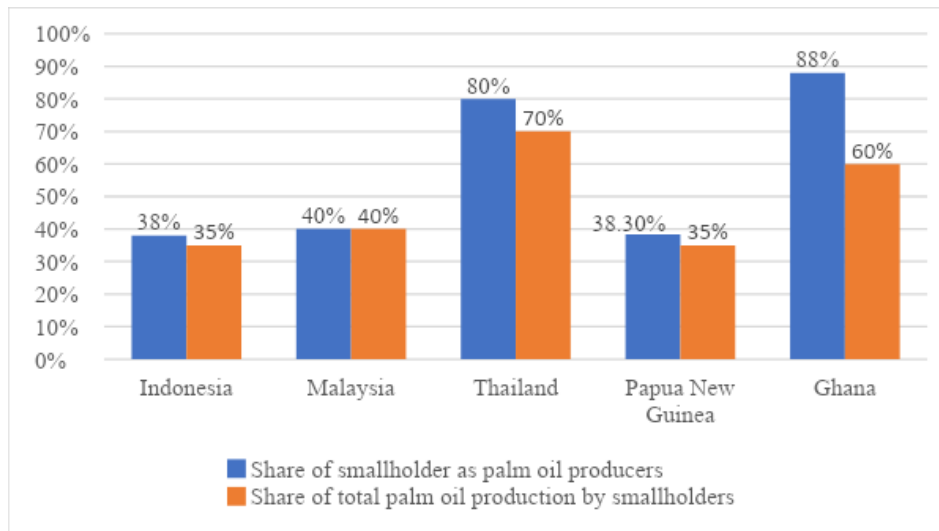
Table 1 Summary of Global Definition of Smallholders

Institution	Definition
UN FAO	The term ‘smallholder’ refers to their limited resource endowments relative to other farmers in the sector. Thus, the definition of smallholders differs between countries and between agro-ecological zones (UN FAO, 2017).
World Bank	Smallholders have a low asset base operating less than 2 ha of cropland (World Bank, 2013).
The EU	Farms with 2-20 ha of utilized agriculture area. The EU defines a ‘small farm’ as less than 8 ESU or “European Size Units”. ESUs are calculated by taking gross margin and dividing this number by EUR1200 (Eurostat, 2018).
US	Small farm as an operation with gross cash farm income (GCFI) under \$250,000 (USDA, 2021).
The UK	Small farms have a standard output of fewer than 50,000 euros (Departement for Environmental Food & Rural Affairs, 2015).
RSPO	Smallholders are who withholdings under 50ha (Roundtable on Sustainable Palm Oil).
CIRAD	A CIRAD project noted that the margin for Indonesian smallholders could range from IDR2,000,000/Ha (EUR125) to 15,000,000/Ha (EUR930). A 5 Ha holding at the lower end would imply a gross margin of EUR625, roughly translating to 0.5 ESU. Using a low margin, a ‘small’ farm would be up to 80 Ha if calculated using ESUs (ABSys, 2021).

Source: Compiled by authors

At a country level, different typologies are presented depending on various factors, including the size of the plantation area and the share of family labor (Cramb & McCarthy, 2016). Not all take the same approach to Indonesia, though most are closer to the Indonesian definition than to that chosen by Brussels. In Malaysia, a smallholder is defined as “a person who owns 100 acres of land or less than 40.46ha” (Senawi et al., 2019). Smallholders are categorized as either independent or organized smallholders, defined as “smallholders under FELDA, FELCRA or RISDA or government agencies that support oil palm and rubber smallholders through resettlement and crop conversions schemes or other assistance”. Moreover, smallholders in Malaysia are often family-owned estates that are highly dependent on family and migrant labor. These definitions follow the adoption of definitions by the RSPO Principles and Criteria for Sustainable Palm Oil Production, which defines smallholders as “farmers growing oil palm, sometimes along with subsistence production of other crops, where the family provides the majority of labor, and the farm provides the principal source of income and where the planted area of oil palm is usually below 50 Ha” (Roundtable on Sustainable Palm Oil).

Figure 1 Overview of Smallholders in Palm Oil Producing Countries



Source: Indonesian Statistics of Palm Oil, MPOB, and RSPO (processed)

The definition of below 50 Ha is widely recognized internationally and should be the standard definition for smallholders globally. It is less arbitrary or discriminatory compared to the EU's current definitions. It does not suffer from difficulties with currency conversion that are problematic for some other definitions (e.g., the USDA).

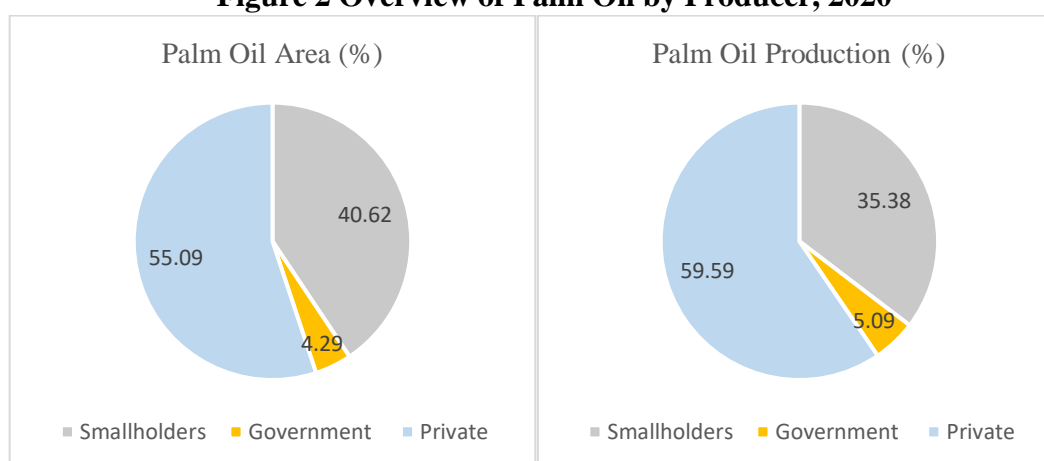
1.2. Overview of Different Smallholder Models in Indonesia

The Directorate of Estate Crops, Ministry of Agriculture Indonesia and the Indonesian Bureau of Statistics categorize palm oil producers into three categories: private (large) estate companies, government-owned estates, and smallholders (Indonesian Bureau of Statistics, 2020). In 2019, the Indonesian palm oil sector comprised 42% smallholder producers, supplying about 38% of palm oil to the total production (The Directorate of Estate Crops, Ministry of Agriculture Indonesia, 2019). Figure 2 depicts the contribution of each producer category to the sector as a percentage of oil palm plantation area and palm oil production. The share of different categories in Indonesia has been consistent since the early development of palm oil (see Appendix), with a significant total of plantation area managed by smallholders relative to large private estates. Table 2 shows the characteristics of smallholders in the ten largest palm oil-producing regions in Indonesia.

Indonesian smallholders fall into two broad categories: plasma and independent smallholders. Plasma smallholders typically are linked with large private companies and receive financial and technical support for harvesting. Under this scheme, smallholders distribute their harvest to the company at a set price. One example of this plasma scheme is the Plasma Transmigration Program by the company Asian Agri Indonesia. The program consists of smallholders from rural parts of Indonesia who were relocated and provided 2 Ha of land

for oil palm plantation and an additional 0.5 Ha for housing and growing crops. While managing the land, smallholders pay installments using the proceeds from their oil palm plantation, and once it is paid off, smallholders will obtain the land title (Asian Agri, 2018). Until 2018, the program has partnered with 30,000 plasma smallholders who own 60,000 Ha of oil palm (Asian Agri, 2018). On the other hand, independent smallholders are smallholders who are not associated/linked to any private or government-owned estates. In most cases, independent smallholders do not participate in any scheme, do not receive technical and financial assistance from companies, and typically are eligible for government assistance.

Figure 2 Overview of Palm Oil by Producer, 2020



Source: Directorate General of Crop Estate, Ministry of Agriculture Indonesia (2020)

On the other hand, independent smallholders are smallholders who are not associated/linked to any private or government-owned estates. In most cases, independent smallholders do not participate in any scheme, do not receive technical and financial assistance from companies, and typically are eligible for government assistance.

Table 2 Palm Oil Area, Production, and Productivity of Smallholders by Top 10 Provinces, 2019

Province	Production	Area	Productivity Yield (Kg/Ha)
Aceh	550,103	238,238	2,780
North Sumatera	2,539,764	723,798	3,994
West Sumatera	567,930	221,670	3,132
Riau	5,145,213	1,815,010	3,359
Jambi	1,578,869	682,175	3,114
South Sumatera	2,507,039	667,483	1,694
West Kalimantan	781,221	441,831	2,201
Central Kalimantan	279,220	170,248	2,704
East Kalimantan	246,252	288,193	3,146
West Sulawesi	508,685	113,675	3,336

Source: Directorate General of Crop Estate, Ministry of Agriculture Indonesia (2020)

The categorization of smallholders in Indonesia also differs from region to region. Smallholders vary widely in size, organizational structure, productivity, access to market, financial assistance, and inputs (Glenday & Paoli, 2015). A report by Daemeter categorized smallholders in Indonesia into the following:

1. small-scale independent farmers linked to supply chains via local agents;
2. larger-scale independent farmers linked to supply chains via local traders or mills;
3. farmer groups or farmer-managed cooperatives that trade directly with mills;
4. smallholder farmer-managed plots linked with company plasma schemes;
5. company-managed, smallholder-owned plantations (leased community-lands).

Some smallholders enter with larger companies under plasma and company-managed schemes. These smallholders typically receive upfront contracts and technical support from companies in exchange for selling their produce to the companies. There is also a growing group of independent smallholders that sell to local intermediary traders. In some cases, they receive support from the government and palm oil companies.

The RSPO guidelines on smallholder schemes set out two types of smallholders. The first one is self-subsistent smallholders, who manage and operate their land, and financially support themselves independently. These smallholders are not legally bound by contract agreements and can be eligible for government support. The second category is scheme smallholders, who are bound by contract agreements. Scheme farmers can cultivate using plantation or large company practices or their practices (RSPO, 2010).

1.3. Global Overview of Smallholders Typology in Producing Countries

Differing definitions of smallholders in the palm oil sector are observed in the national context and between countries. Box 1 gives an overview that identifies different national interpretations of smallholders in palm oil-producing nations. In Malaysia, smallholders are split into two categories: “organized” smallholders and independent smallholders. According to MPOB, organized smallholders represent approximately 16% of palm oil producers, owning 980,994 million Ha of oil palm plantation area, and independent smallholders account for 16.7% with a land area of approximately 986,331 million ha. By definition, “organized” smallholders acquire technical, manpower and market support from government agencies such as FELDA, FELCRA or RISDA. In contrast, independent farmers typically have restricted access to the market or mills as they depend on middlemen. Moreover, while independent smallholders do not receive these benefits, they may obtain financial assistance through the Malaysian Palm Oil Board (MPOB).

BOX 1 Global Overview of Smallholders Typology in Producing Countries

Definitions of smallholders in the agricultural sector vary per country, and even within each variation exist other subcategories that depend on various factors, including the industry's size, availability of area of production, and resources in each country. Below is an overview of the definition and the structure of smallholders in palm oil-producing countries.

Ghana's more detailed farming model classifies smallholders into three groups; nucleus smallholders, out-grower farmers, and independent smallholders (Budu & Sarpong, 2013). Nucleus-smallholders represent approximately 2% of all smallholders, out-grower farmers of 28%, and independent/ private farmers roughly 70 % of all smallholders (DoCampo et al., 2021). In short, the Nucleus smallholder model involves smallholder farmers cropping on the land that belongs to the estate after land acquisition. They are then obliged by contract to sell their output to the estate. Smallholders under this scheme are supervised and receive technical advice and inputs from the management of the estate. Meanwhile, out-grower farmers cultivate palm oil outside the nucleus estate, on their land or as tenants on a third party's land. Under specific terms and conditions, the out-growers receive planting material, fertilizers, and other production inputs from the estate. The contract between the estate and the out-grower farmers stipulates that the estate provides inputs on credit to the farmer (at cost). The farmer, in return, supplies all his production output to the company.

Similarly, smallholders in Peru fall under three categories based on the benefactor of financial and technical assistance (Bennett et al., 2019). Smallholders associated with farmers typically receive support through government assistance programs, and smallholders linked to corporate partnerships receive assistance from large private companies. Lastly, smallholders with no association or “independent” smallholders can be broadly defined as those smallholders that do not have a contract of any kind, who manage their plantations free off technical assistance and agricultural input from private and government estates and establish their plantation using personal financial resources, and available infrastructures such as roads, nurseries, or processing mills provided from previous projects.

The different schemes and typology of smallholders have enabled smallholder farmers to produce and sell palm oil and other crops as a source of income and employment. As noted in many research studies, the development of smallholder farming has also benefited household and community welfare in terms of health, food security and nutrition. Its most prominent and most direct impact is on rural economic development: alleviating poverty and building prosperity. It has also attracted more financing initiatives to developing countries that focus on agricultural development, community development programs, and farmer resilience, which provides financial and technical support in boosting farmers' productivity and creating better livelihoods in the long term. The development of smallholder programs and the continuous support at the local, national, and international level shows the importance of smallholder

farmers in meeting Indonesia's (and the world's) U.N. Sustainable Development Goals (SDGs) commitments.

Part Two: The European Union's Definition is Systematic Discrimination

Over the last decade, the development of oil palm has resulted in the improvement of the lives of many smallholders through poverty reduction and improvement of economic and social outcomes. Smallholders represent many holdings in many developing countries, and their numbers have increased in the last two decades (Khalil et al., 2017). The increasing role of smallholders in the industry reflects their importance for achieving the UN SDGs. Enabling their participation in the global supply chain would benefit from expanding opportunities that could lead to substantial socio-economic and environmental benefits in the long term.

However, the European Union seems to be systematic and continual discrimination against palm oil-producing countries whose regulatory approach is undermining palm oil-producing countries by excluding smallholder farmers. Under the EU's RED II Delegated Act, smallholders are defined as "*farmers independently conducting an agricultural activity on a holding with an agricultural area of less than [2 – 5] hectares for which they hold ownership or lease rights*". This qualification of smallholders is arbitrary and, most importantly, inconsistent with international standards such as the RSPO, which defines smallholders as those with holdings below 50 Ha. Moreover, the UN FAO conducted a study that assessed 122 countries' statistical definitions for smallholders. The report shows that of 71 countries that adopt land size criteria, only 31 countries use a definition of fewer than 2 Ha.

Meanwhile, the remaining 40 – 11 African countries, 9 Asian Pacific countries, and 14 Latin American countries – use the definition over 2 hectares. Suppose we look more closely at palm oil-producing countries. The definition of farmers varies from fewer than 2 Ha in Nigeria, fewer than 5 Ha in Honduras, to fewer than 20 Ha in Colombia. Meanwhile, in Malaysia and Indonesia, the definition depends on government regulations. For example, according to Law 19 of 2013 concerning Protection and Empowerment of Farmers, in Indonesia, government protection is eligible for food crop farmers with a landholding of fewer than 2 Ha (FAO, 2013).

How smallholders are defined varies significantly across countries given their characteristics and therefore cannot be confined into one single definition. As reiterated in the academic literature, which is categorized as a smallholder largely depends on numerous factors such as share of family labour, production inputs, land ownership, and access to assets and resources, and profitability. Moreover, it should also be contextual and consider smallholders' role in the economic and social development in respective regions (Jelsmaa et al., 2017). For example, a CIRAD project estimated the size of oil palm plantations based on gross margin and found that gross margin for Indonesian smallholders can range from IDR2,000,000/Ha (EUR125) to 15,000,000/hectare (EUR930). A 5-Ha holding at the lower end would imply a gross margin of EUR625, translating to approximately 0.5 ESU. Using a low margin, a 'smallholder' would be up to 80ha if calculated using ESUs (ABSys, 2021).

The proposed EU definition of smallholder is demonstrably short-sighted given its potential repercussion on smallholders, national palm oil sustainability efforts, and UN SDG commitments. Suppose the EU is going to define 'smallholders'. In that case, it should do so with a clear rationale and take into account the complexities and differences recognized internationally. The EU should also reflect on how its current definition would undermine the

UN SDGs, particularly SDGs 1 and 2 (IFAD, n.d.). Failure to properly account for the heterogeneity of smallholders in the palm oil industry will undermine the effectiveness and scalability of sustainability initiatives.

To summarize, the role of smallholders in advancing rural economic development in developing countries is irrefutable. So, it raises the question of why the EU is not supporting this and the main motivation behind the EU's legislative barriers against palm oil. One possible explanation is trade protectionism aimed at protecting EU-based producers of rapeseed and sunflower oils. Studies have shown palm oil is a highly productive crop and requires less land and fertilizer to produce, and a ban on palm oil will only lead to increased land use in other vegetable oils. However, banning palm oil from entering the market also means less competition, higher market share, and more profit for wealthy EU farmers and producers. Not only does this undermine free trade principles and the SDG commitments, but it will also hurt European and global consumers through higher prices in the long term.

Part Three: Why do Indonesian Smallholders Choose Oil Palm?

3.1. Economic Outcomes

Palm oil is a crucial contributor to the national and regional economic and social development in Indonesia. As the primary export commodity, palm oil contributed approximately USD 22.9 billion, which accounted for 11% of total export value and approximately US\$5.13 billion in foreign exchange revenue in 2020 (Gabungan Pengusaha Kelapa Sawit Indonesia, 2021). The palm oil industry has also become a significant source of employment, with approximately 16.2 million labourers – 4 million direct farmers and 14.2 million indirect labourers – within the industry (World Bank, 2019). In the context of regional and national development, palm oil has continued to play a central role in raising incomes, alleviating rural poverty, and reducing inequality between Java and the outer islands of Indonesia, namely Sumatera and Kalimantan (Zen et al., 2015). To fully realize the economic and social benefits of oil palm development, it is important to assess the direct impact on smallholders as well as the indirect impact on local communities, including non-farm workers in rural regions where palm oil production is prevalent.

a. On Smallholders

For smallholders, the preference of oil palm over other land-use activities can be attributed to the direct wealth effect from planting oil palm. Studies have consistently shown that smallholder farmers benefit significantly from cultivating oil palm through income gains and improved living standards (Qaim et al., 2020). In addition to direct income gains, the development of oil palm supports the livelihood of smallholders by providing access to agriculture resources, inputs, and technology (Cramb & McCarthy, 2016). Moreover, smallholders also benefit from acquiring agricultural and entrepreneurial skills by learning how to grow cash crops to increase family income and provide better food security and self-sufficiency. As smallholders gain additional income from growing different crops, intercropping also creates jobs for labourers with no access to land, which is also a source of income for non-farmers/rural labourers (Krishna et al., 2017).

In districts where oil palm is prevalent, there is no distinction of the benefits between independent and plasma smallholders (Perkebunan Inti Rakyat) or Nucleus Estate Smallholders (NES), who are under partnership programs with government or

private companies. For example, smallholders under the Asian Agri Plasma scheme reported an annual income of 6,000 USD, significantly higher than non-palm oil farmers who earn an average annual income of 800 USD (Asian Agri, n.d.).

Table 3 Comparison of GRDP and Rural Poverty Rate by Key Production Province

Province	Rural Poverty Rate (%)			GRDP per Capita (in billion Rupiah)			Production (Ton)		
	2008	2015	2020	2011	2015	2020	2008	2015	2020
Riau	12.16	9.95	7.47	71,638	70,770	68,743	4,466,975	7,333,610	9,775,672
North Sumatera	12.29	11.06	9.02	26,711	31,637	36,301	3,870,781	5,099,246	6,601,399
South Sumatera	17.01	14.47	13.25	27,158	31,549	36,782	1,786,469	3,034,697	4,365,004
Jambi	7.43	7.82	6.4	30,857	36,754	40,363	1,283,511	1,947,048	3,096,621
West Kalimantan	11.49	9.51	8.57	20,227	23,457	26,241	1,258,813	1,594,295	3,551,825
West Sumatera	11.91	7.35	7.83	22,639	27,081	30,818	3,870,781	1,002,920	1,390,199
Aceh	25.3	19.56	17.96	22,705	22,524	24,100	744,174	1,030,877	1,158,631
West Sulawesi	18.03	12.7	11.89	16,023	20,251	22,834	303,716	312,524	444,381
Central Kalimantan	10.2	6.02	5.5	26,589	31,619	35,735	782,288	3,424,937	2,298,584
East Kalimantan	15.47	10.13	9.98	20,227	23,457	26,241	334,134	1,526,227	4,331,930

Source: Directorate General of Crop Estates, Ministry of Agriculture Indonesia (processed)

Oil palm expansion has resulted in a higher regional gross domestic product (GRDP) and a lower rural poverty rate at the regional level. For example, in Riau province – one of the key palm oil-producing provinces- rural poverty has decreased from 21% to 10% in five years. Similarly, in other regions such as Jambi and Kalimantan, as seen in table 2 below. One study examined the impact of Indonesia’s oil palm development on poverty rates and monthly per capita household expenditure at the district level. The study found that a 10-percentage point increase in the share of district area under oil palm plantations corresponded to an additional 5.36 percentage point poverty reduction and 8% faster consumption growth when compared to districts with less or no oil palm cultivation at all (Edwards, 2018). The direct income effect was attributed to increased household expenditure on health, education, and good durable expenditures.

b. On Local Community, Including Non-farmers

In rural areas, oil palm development benefits smallholder farmers who work in the palm oil community and non-farm households. One study assessed the effect of land-use change on income inequality in villages in the province of Jambi and showed positive economic gains (Dib et al., 2018). Smallholder/farmer households have a significantly

higher income than non-farmer households who work as regular labourers in plantations. Smallholder and non-farmer households are better off in villages with a large share of the land under oil palm than in villages where rubber and other crops are prevalent. Data showed the poverty rate in villages with dominant land use type was approximately 8%, which was lower than villages with rubber as the dominant land use. Moreover, over half of the rate in villages with few rubbers or oil palm land use have poverty rates at 14% and 20%, respectively. The associated gains in income were significant as non-farmer households typically belong to the poorest population segments in rural Jambi.

Another indirect economic impact of palm oil relates to the local government, particularly public revenues and expenditures (ibid). Since demand for public services is likely lower with rising consumption and falling poverty, the fiscal surplus may be directed to more productive public investment and expenditure. Districts that expanded land area for oil palm plantations showed improvements in electrification and provided public infrastructure and facilities such as marketplaces, schools, health clinics, and places of worship. Studies have shown that smallholders directly benefit from palm oil in Indonesia despite the headwinds such as a lack of technical support and poor agricultural practices. Given smallholders' varying characteristics - from farm size to land ownership and management systems - the increasing number of smallholders highlights the growing complexity of the palm oil sector in the future. Thus, it is imperative to ensure the inclusion of all smallholders in the global supply chain, which includes following the international sustainability standards and consensus.

BOX 2 WHY SMALLHOLDERS CHOOSE PALM OIL: OVERVIEW OF NET PRESENT VALUE

Assessing the cost-benefit analysis of establishing palm oil plantations in Indonesia can help explain why smallholders choose palm oil. By estimating the Net Present Value (NPV), studies have found that establishing palm oil plantations is more profitable given the higher NPV and return on investment (ROI) (Svatonova et al., 2015). Earlier studies in Sumatera (Papenfus, 2002 and Feintrenie, 2010) and Kalimantan (Belcher, 2004) also show higher profitability for palm oil smallholders than other land-use activities rubber, rattan plantation.

While returns to land and returns to labor are interest-rate sensitive as they vary largely on the discount rate applied, returns to land and labor for palm oil smallholders compare favorably to other land-use activities. Findings in Sumatra showed the average labor required to maintain and harvest the plot in palm oil is substantially lower 51 person-days/hectare/year than other land-use activities such as rubber plantation, which is estimated to be twice as large. Meanwhile, palm oil presented higher intensive land use, thus higher NPV on per unit of land basis.

Another critical parameter in comparing land-use activities is the length of the unproductive plantation period. Additional costs are incurred from protecting the seedlings from pests and weeds while generating no income. Palm oil starts producing in the fourth year after planting, which is faster than rubber trees in the seventh year (Feintrenie et al., 2010). Thus, based on profitability and cost viability, smallholders have a greater financial incentive to choose palm oil over other land-use activities.

3.2. Social Outcomes

As previously outlined, the palm oil community has contributed significantly to Indonesia's regional development, primarily through poverty alleviation and job creation. However, more importantly, palm oil has also facilitated improvement in other social outcomes such as health and education. The development of oil palm in rural areas provides smallholders and their children opportunities to obtain better education and a future of off-farm work or activities. Using the National Socio-Economic Survey (Susenas) household data, one study examined the impact of palm oil on education at the district level and observed a positive relationship between palm oil production and education attainment level (Rafi, 2018). The study showed that an increase of 1 ton per person of palm oil production corresponded to an 8% increase in net enrolment ratio in a given district—Similarly, an increase in the average school year by 0.27 years (ibid). UNICEF (2016) also reported the role of oil palm development in children's education in which private companies often provide commuting transport for palm oil workers' children to attend schools, which contributed to higher rates of child attendance in secondary education relative to their rural counterparts in Indonesia (Unicef, 2016).

While studies on outcomes of palm oil smallholders and families remain limited, smallholders and non-farm households whose families benefited from palm oil work exhibited an increase in per capita monthly household expenditure on health spending (Edwards, 2018). In terms of local government expenditure, village data (PODES) reported that the district where palm oil development took place is associated with increased public spending, particularly on education and health infrastructures such as school buildings and health clinics (ibid). New public goods were provided through in-kind transfers or new infrastructure projects,

demonstrating the multiplier effect of palm oil development to the broader local community. The impact of palm oil on socio-economic development, including the betterment of intergenerational education and health outcomes among smallholders, cannot be overemphasized enough. There are also success stories from large private companies such as Golden Agri, which invested approximately USD1.5 million in scholarship programs and provided 2,000 teachers for mentorship, as well as internship opportunities to improve the quality of education and human capital development of smallholders and palm oil labor's children in West Kalimantan (Santiko, 2018).

Part Four: Can Smallholders Palm Oil Improve the Environment?

In Indonesia, there are currently 2.6 million smallholders who contribute approximately 35% of palm oil production and manage 40% of the total oil palm plantation area nationwide (Directorate General of Crop Estates, Ministry of Agriculture Indonesia, 2019). A study by CIFOR estimated that smallholders are likely to grow more rapidly than government and private estates, with an estimated 200% increase from their current agricultural capacity by 2030, making them essential players in achieving sustainability in the palm oil sector (Mosnier et al., 2017). Thus, ensuring smallholders have the resources and endowment to increase productivity while at the same time adopting sustainable agriculture practices is vital and will require action from all stakeholders along the supply chain.

There are two main ways smallholders can improve sustainability. First is the intensification of palm oil production. Currently, Indonesian smallholders produce only 2-3 tons per hectare per year, which is lower than smallholders in other countries such as Malaysia (Julianto, 2017). Most of the current smallholding area is planted with low-yielding palms haphazardly without terracing or fertilizer applications (Tanuwidjaja, 2020). Through intensification, smallholders can increase their potential palm oil yields without expanding the land for cultivation: this is a substantial environmental achievement, which also translates into an additional estimated total of 25.6 million tons of crude palm oil per year for food, fuel and other important resources (Saleh et al., 2018). Under fully fertilized production, this can supply up to 71% of Indonesia's current palm oil production and 43% of projected production in 2045.

In most cases, smallholders, particularly independent smallholders, are less productive, averaging 35-40% lower yields, and consequently generate lower profit compared to farmers in plasma schemes and private estates (Lee et al., 2014). A study conducted by the UN FAO on forest restoration and poverty showed a positive relationship between rising income, reductions in deforestation, and farmers' ability and willingness to conserve nature (FAO, 2020). Supporting smallholders by providing technical and financial support through certification schemes can help ensure compliance with higher sustainability standards while at the same time helping smallholders increase their productivity. Sustainability components required by certification schemes such as ISPO and RSPO will help reduce or nullify the costs and improve sustainable agriculture practices. This can take the form of training from different government agencies/ministries and private companies on subjects including good farming practices and occupational health and safety protocols (Suhada et al., 2018).

At the international level, RSPO is also committed to increasing smallholder inclusion in sustainable palm oil development through RSPO's Smallholder Engagement Platform. The initiative aims to improve smallholders' capacity by providing better access to high-quality training and resources and connecting smallholders with potential project partners (The Jakarta Post, 2021).

BOX 3 DISTINCTION BETWEEN FAMILY LABOR AND CHILD LABOR

Despite the significant contribution of palm oil to the improvement of socioeconomic outcomes of smallholder households and families, there has been an unceasing concern over child labor in the palm oil sector. Children whose families are smallholders or employed as palm oil labor often help their families maintain the land and production of palm oil. Whether a particular type of work or job desk is identified as child labor will vary greatly depending on the child's age, type and hours of work performed, conditions under which "work" is performed and the objectives pursued by individual countries. Thus, it is important to know the distinction between family and child labor to address these issues.

According to ILO, child labor is defined as "work that deprives children of their childhood, their potential and dignity, and that is harmful to physical and mental development". This definition qualifies for mentally, physically, socially, or morally dangerous work harmful to children and interferes with schooling (ILO, 2020). Two ILO conventions outline the fundamental ILO standards on child labor, namely The Minimum Age Convention (No. 138) and The Worst Forms of Child Labor Convention (No. 182). Similarly, UNICEF defines child labor as work that compounds social inequality and discrimination, limiting access to education and harms children's physical, mental, and social growth (UNICEF, 2020).

Meanwhile, family labor refers to "persons who help another member of the family run an agricultural holding or other business, provided they are not considered employees. Persons working in a family business or on a family farm without pay should be living in the same household as the owner of the business or farm, or in a slightly broader interpretation, in a house located on the same plot of land and with common household interests. Such people frequently receive remuneration in the form of fringe benefits and payments in kind or a salary" (EU Commission, 2020). Moreover, this definition includes a son or daughter living inside the household and working in the parents' business or on the parents' farm, with or without receiving formal pay.

Smallholders have proven to be pivotal in improving rural economic and social development through poverty alleviation and farmer resilience. Given their rapid growth, smallholders are key to improving sustainable environmental outcomes in Indonesia's palm oil sector. However, this is often hindered by capital constraints, lack of access to resources, training, and support from the government, which can be overcome through collaborative

actions between the government, private sector, and international community. Nevertheless, the EU regulations aimed at preventing them from entering the global supply chain will impose further constraints that could suppress smallholders' upward mobility and disincentivize them from joining global sustainable initiatives. Why spend time and money on expensive global certification if the result is to be kicked out of the marketplace?

Part Five: Case Study of Work Collaboration between Private Companies and Smallholders


To support the inclusion and development of palm oil smallholders, private companies, the government, and NGOs have worked collaboratively by providing technical support, developing new business models, and creating new value chain structures to facilitate smallholders in the new global sustainable palm oil value chain. Below are some of the case studies which illustrate various partnership schemes in Indonesia:

- a. PISAgro's Palm Oil Working Group is a multi-stakeholder initiative consisting of major palm oil companies such as Sinar Mas, Triputra Agro Persada, financial institutions such as Rabobank Indonesia, and NGOs IDH. It aims to support the inclusion of palm oil smallholders in the global supply chain. At present, PISAgro has engaged with more than 40,000 smallholders, covering approximately 93,000 Ha of land. Some of the activities include knowledge sharing on developing farmer groups/cooperatives, assisting smallholders to get short term loans and access to financial institutions, buying high-quality seeds and fertilizer, and supporting improvement in traceability by developing online tools and KPI reporting (PISAgro, n.d.).
- b. Golden-Agri Resources (GAR) Innovative Financing Scheme: In Riau, Golden Agri has partnered with the government and several state-owned banks such as Bank Mandiri Syariah and BRI Agro to help smallholders secure financing and improve yield productivity. The scheme works by encouraging farmers to form cooperatives and secure supply contracts with GAR's supplier mills in the long term. In addition to long term supply contracts, farmer cooperatives are able to access certification in the form of the Indonesian Sustainable Palm Oil System (ISPO), government land certification, grants, training, and subsidized loans to enable farmers to invest in certified high-quality seeds and best agriculture technology. The scheme currently involves 320 farmers across Riau, managing close to 900 hectares (Agribusiness and Food, 2016).
- c. Technical support initiatives with Cooperatives: In Central Kalimantan, cooperatives such as *Karya Bersama Cooperative* is helping independent smallholders with sustainable practices training. They train farmers who have no access to land on intercropping cultivation and how to grow cash crops such as aubergine, chillies, and water spinach. As a result, farmers improved the quality of their soil, maximized yields and reduced costs associated with land upkeep (Prabowo, 2021). Similarly, *Produsen Mandiri Gaharu Seratus Bosar Maligas Cooperative* in North Sumatera partners with smallholders for knowledge sharing and provides training on sustainable agricultural methods such as organic fertilizer utilization, harvest measurement, and health and workplace safety protocols.

Part Six: Barriers to “Global Smallholders”

The EU’s Renewable Energy Directive (REDII) and proposed regulations such as EU Due Diligence regulation and EU climate taxonomy have consistently demonstrated systematic discrimination against Indonesia’s palm oil industry, and most importantly, Indonesia’s smallholders. The exclusion of many smallholders from the narrow definition proposed by the EU will likely result in reduced access to the global marketplace. This uneven playing field will further weaken smallholders’ bargaining power as they are already at a disadvantage within the supply chain compared to the major conglomerates and the competitor oilseed majors from Europe. Moreover, local communities will also suffer if other sectors whose growth is facilitated by palm oil development, such as manufacturing, transport, and logistics, is harmed by a downturn in palm oil exports. Potential adverse impacts would be seen in employment, the flow of investment to the local economy, and human development in these local regions. The EU cannot escape its share of responsibility if these negative consequences come to pass. Below is an overview of current EU policy barriers.

- a. **EU RED IIB** Under the Directive, the EU plans to phase out Indonesia’s palm oil exports for biofuels usage by 2030, and perhaps earlier if certain anti-palm oil EU officials get their way. Looking at the implication on smallholders, advocating for this trade barrier to benefit EU biofuel producers at the expense of regressive socio-economic development of smallholders in developing countries does not reflect fair trade practices or international development principles. Indonesia is currently challenging the RED II at the WTO. The issuance of the final report on the dispute is expected to be released after the second quarter of 2022 (World Trade Organization, 2020).
- b. **EU Deforestation Regulation and Due Diligence:** The EU Commission proposed regulations to limit demand-side pressures for commodities that it considers linked to deforestation. Possible instruments could include mandatory labelling, voluntary commitments and labelling, due diligence, verification schemes and other methods (European Commission, n.d.). The proposed regulations are designed to form a barrier that will curb trade and exports from Indonesia to EU member states. Some in Brussels have proposed sensible solutions – the Guidance Document on Forced Labour published by the EU Commissions’ Trade department (DG Trade) is pragmatic and reasonable. The concern is that this document will be packed with protectionist and nativist language and restrictions before it completes its passage through the EU institutions. If not, the EU’s proposals may be successful at disenfranchising smallholders in Indonesia and erecting trade barriers but wholly unsuccessful in minimizing deforestation or supporting rural development.
- c. **EU Taxonomy:** The EU Commission’s latest “Climate Taxonomy” is a new set of regulations included in the comprehensive package of measures that aims to reorient investment flows towards more sustainable technologies and businesses (Europe Commission, 2021). Essentially, the regulations will set technical screening criteria, which will determine whether an investment by an EU bank or financial institution can be considered climate-friendly (definition supplied by the EU) related to (1) climate change adaptation and (2) climate change mitigation (European Commission, 2021).



Companies will be required to disclose information about the sustainability of their investments based on the EU criteria. The EU climate taxonomy definitions will probably be drawn narrowly to ensure that competitors such as Indonesian smallholder palm oil are not considered sufficiently sustainable for investment purposes. This narrow view of sustainability is entirely at odds with the working definitions and practical evidence from the United Nations, World Bank, Food & Agriculture Organisation, and many more.

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Appendix

Number of Farmers in Palm Oil Industry by Producer Category

	Smallholders	Government Estate	Private Estate	Total
2018	2,575,314	307,383	3,946,361	6,829,058
2019	2,661,042	313,523	4,104,842	7,079,407
2020	2,685,353	321,752	4,130,822	7,137,927

Source: Directorate General of Crop Estates, Ministry of Agriculture Indonesia (2020)

Share of Farmers in Palm Oil Production by Producer Category

	Smallholders	Government Estate	Private Estate	Total
2018	37.71	4.50	57.79	100
2019	37.59	4.43	57.98	100
2020	37.62	4.51	57.87	100

Source: Directorate General of Crop Estates, Ministry of Agriculture Indonesia (2020)

Production and Total area of Indonesian Palm Oil by Producer, 2000 – 2019

	Private estates		Government estates		Smallholders		Total	
	Production	Area	Production	Area	Production	Area	Production	Area
2000	3,633,901	2,403,194	1,460,954	588,125	1,905,653	1,167,758	7,000,508	4,159,077
2001	4,079,151	2,542,457	1,519,289	609,943	2,798,032	1,561,031	8,396,472	4,713,431
2002	4,587,871	2,627,068	1,607,734	631,566	3,426,739	1,808,424	9,622,344	5,067,058
2003	5,172,859	2,766,360	1,750,651	662,803	3,517,324	1,854,394	10,440,834	5,283,557
2004	6,466,132	2,821,705	2,013,130	674,983	3,847,157	2,220,338	12,326,419	5,717,026
2005	7,883,234	2,915,634	2,235,827	677,792	4,500,769	2,356,895	14,619,830	5,950,321
2006	8,584,884	3,056,248	2,376,872	692,204	5,608,171	2,536,508	16,569,927	6,284,960
2007	9,263,089	3,416,656	2,174,897	685,087	6,358,388	2,752,173	17,796,374	6,853,916
2008	10,657,158	3,825,142	1,820,594	626,666	6,923,042	2,881,899	19,400,794	7,333,707
2009	11,929,930	4,236,761	1,943,212	651,216	7,517,724	3,061,412	21,390,866	7,949,389
2010	12,116,488	4,503,078	1,921,660	658,492	8,458,709	3,387,258	22,496,857	8,548,828
2011	13,043,830	4,657,751	2,154,218	692,065	8,797,925	3,782,480	23,995,973	9,132,296
2012	14,684,783	5,261,624	2,133,007	734,077	9,197,729	4,137,621	26,015,519	10,133,322
2013	15,626,625	5,381,166	2,144,651	727,767	10,010,728	4,356,087	27,782,004	10,465,020
2014	16,843,458	5,603,414	229,336	729,022	10,205,395	4,422,365	27,278,189	10,754,801
2015	18,195,402	5,980,982	1,887,999	743,894	10,527,791	4,535,087	30,611,192	11,259,963
2016	18,024,445	5,754,719	1,861,263	707,428	11,575,542	4,739,318	31,461,250	11,201,465
2017	19,887,837	6,047,066	1,861,263	638,143	13,191,189	5,697,892	34,940,289	12,383,101
2018	25,439,694	7,982,706	2,147,136	614,756	15,296,801	5,818,888	42,883,631	14,416,350
2019	27,330,844	8,061,636	2,306,751	627,042	16,223,527	6,035,742	45,861,121	14,724,420
2020	29,271,334	8,261,639	2,470,529	643,488	17,375,397	6,090,883	49,117,620	14,996,010

Source: Directorate General of Crop Estates, Ministry of Agriculture Indonesia (2020)

Land Size Criteria for Small-scale Food Producers in Palm Oil Producing Countries

	Definition	% of Small Farms
Indonesia	<2 ha	93.3
Malaysia	Defined by government	91.6
Thailand	<3.2 ha	64.5
Nigeria	<2 ha	90
Colombia	<20 ha	78.4
Guatemala	<3.5 ha	86.6
Honduras	<5 ha	71.9
Ghana	<2 ha	90

Source: Grain (2014)