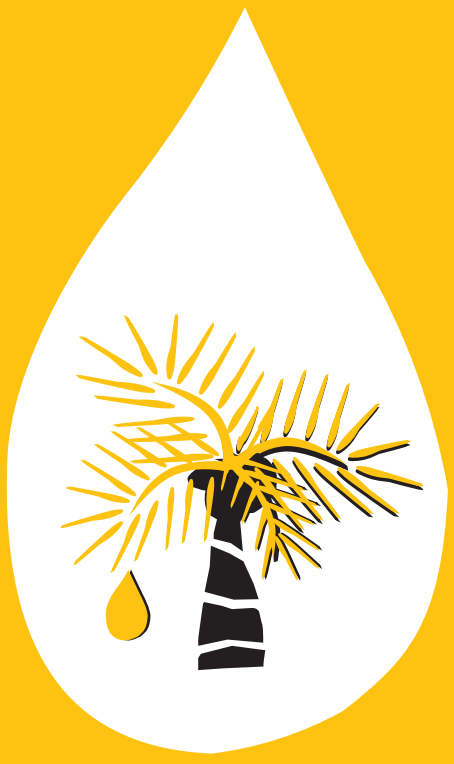
Palm oil Barometer 2022



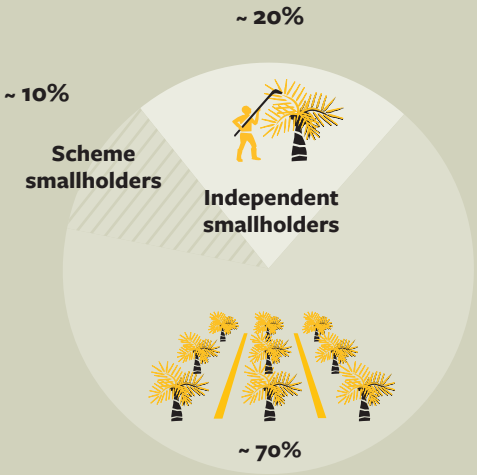
The inclusion of smallholder farmers in the value chain

Solidaridad

THE PALM OIL SUPPLY CHAIN

Primary production

Oil extraction



Intermediaries

Independent mill

Plantation mill

Largest plantations

Sime Darby
FGV Holdings
Golden Agri-Resources
Astra Agro Lestari
Bumitama
Kuala Lumpur Kepong

Refining/processing/ trade

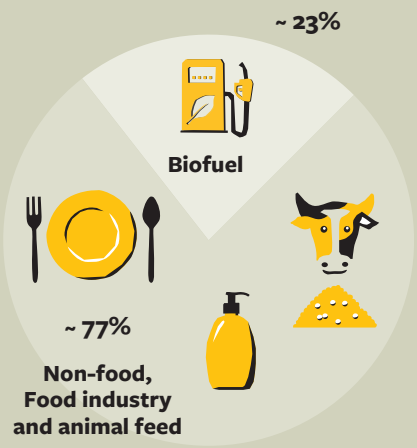
Product manufacturing

Retail

Refineries

Bulk station/blenders

Trade



Consumption

Largest refineries	**Largest oleochemical companies**	**Largest FMCG companies**	**Largest Grocery Retailers**
Wilmar International	AAK	Unilever	Walmart
Musim Mas	BASF	Mondelez	Schwarz Group
Golden Agri-Resources	Clariant	Nestle	Kroger
Royal Golden Eagle	Dupont	Ferrero	Aldi
Mewah International	Evonik	PepsiCo	Costco
Cargill	Johnson&Johnson	Procter&Gamble	Carrefour

Contents

Preface

At Solidaridad we envision a world in which all we produce and consume can sustain us, while respecting the planet, each other and the next generations. The palm oil sector is perfectly placed to deliver on this vision. The oil palm is a high-yielding crop grown by millions of smallholder farmers in many countries across the tropics and, under the right conditions, this crop can generate a living income while the farmers work in balance with nature. However, all too often the conditions are not right. Smallholder voices are rarely heard. They don't feel ownership over their own futures. They receive too little in return for their hard work, and are forced to take unfair financial risks. All these factors put limitations on how great a force for positive change oil palm can be.

This report is written with the input of smallholder representatives from Asia, Africa and Latin America. Through the experiences they share it becomes clear that market dynamics have led to unfavorable prices and incomes for oil palm smallholders. While they struggle, food and consumer goods manufacturers and retailers reap the profits in the supply chain. In addition, we find that governments in consuming and producing countries do not fully support smallholders to farm in the most sustainable way.

This first global Palm Oil Barometer opens the floor to all stakeholders. How can we reach a fair value distribution if farmers' voices are not heard? How do we ensure oil palm smallholders are included in the global market? This report sets the stage for a lively discussion that we hope contributes to feasible solutions that work for the smallholders who feed the world.

Jeroen Douglas,
Executive Director of Solidaridad Network

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1

“ To ensure palm oil smallholder inclusivity, stakeholders throughout the value chain must take smallholder farmers’ experiences and needs seriously. In practice, this means offering them their leadership and assistance.”

DOPPA and DNC, Malaysia, 2022.[1]

Context

1.1 INTRODUCTION

The prevailing image of palm oil today in Europe is that of a crop that devastates the earth, transforming much of the world's tropical forests into cookies, cosmetics and car fuel. Palm oil figures prominently in the press as the crisis surrounding deforestation, biodiversity loss and climate change builds. Often it illustrates a myriad of deeply divisive subjects, including economic development, human rights, and environmental conservation (Meijaard and Sheil, 2019; Qaim et al., 2020). Although the image of industrial scale companies operating oil palms as a monoculture plantation crop holds true, a diverse base of more than three million smallholders produce roughly 30 percent of global palm oil. The contribution of smallholders in the overall supply of palm oil is expected to increase among others because of the implementation of zero-deforestation commitments by the private sector. Governmental moratoriums on large-scale oil palm plantation expansion are leading to increased scrutiny on the growth of bigger estates (CIFOR, 2017).

For millions of smallholder families oil palm contributes to household wellbeing, food security and rural livelihoods. Because it can be harvested year-round, it provides a steady cash flow and is often regarded as the one crop that can help a family out of poverty within a generation (Ayompe et al., 2021). As such, rural poverty alleviation, food security and economic development are important arguments of government ministries, industry lobbies, and companies to motivate the expansion of the oil palm sector. However, the social and environmental concerns of palm oil production include land conflicts, the loss of traditional livelihoods and culture, large scale deforestation, decreasing biodiversity and intensified carbon dioxide emissions from peatlands (Dauvergne, 2018; Qaim et al., 2020). By isolating the environmental crisis from the much wider poverty crisis to which it is directly linked, it is easy to overlook the smallholders' challenges in growing oil palms sustainably (Azhar et al., 2017).

1.2 SMALLHOLDER INCLUSIVENESS

The sector's sustainability agenda tends to focus on large industrial plantations, maintaining that voluntary sustainability standards and zero deforestation commitments are effective ways to improve the sector's governance (Grabs et al., 2021; Ten Kate et al., 2020). The main private sector players also have their own measures in place; defining their own sourcing criteria, making use of traceability systems or working directly with their suppliers, for

example. Contributing specifically to the resilience of smallholder farmers is part of their 'inclusive' business approach and sustainability commitments. Through technical assistance programmes these smallholders are integrated into the value chain and vertically linked to large buyers. For farmers and their organisations, inclusion promises to bring higher incomes, improved access to finance and services, and more equitable distribution of benefits in the supply chain. Inclusion is also expected to have positive effects in environmental sustainability, for example by promoting biodiversity conservation.

In reality, most 'inclusive business' schemes benefit a narrow minority of farmers who have better access to capital, are more educated, closer to infrastructure, and strongly oriented toward commercial agriculture (FIL, 2022; Ros-Tonen et al., 2019). In terms of actions to support rural livelihoods and basic ecosystem services, this approach faces implementation barriers. The underlying focus on continuous growth of production misses the point that small farms cannot be thought of as large farms on a smaller scale. Small producers have different needs, preferences and constraints, and their marginalization means that these unique characteristics are often overlooked. Smallholders are unlikely to have the capacity to meet demand for sustainable and deforestation-free palm oil production without consistent support and incentives from procuring companies or governments (Saadun et al., 2018).

In general, smallholder engagement is a lengthy process that requires investment, planning and long-term involvement of all stakeholders. While there are opportunities for small-scale farmers to gain real benefits from sustainable oil palm production, the large number of heterogeneous farmers means that achieving this potential requires specific policy approaches and financial support structures. There is the risk that poorly designed 'inclusive' business activities and sustainable procurement policies will exclude many smallholder farmers by default. For example, after two decades of Certified Sustainable Palm Oil (CSPO), only 70,000 hectares or 1.5 percent of Roundtable on Sustainable Palm Oil (RSPO) certified land belongs to independent farmers who make their own management decisions (RSPO, 2022a). The EU proposal for a regulation to reduce deforestation embedded in tropical products like palm oil, soy and beef, might hinder smallholder market access without appropriate accompanying measures (Solidaridad, 2021). To complicate it further, the market demand of sustainable palm oil in consuming countries is hindered by its invisibility as an embedded ingredient in most products. Companies rarely communicate with consumers about ethical sourcing, sustainability and certification to give them the assurance that they use sustainable palm oil ingredients in the production process.

1.3 ABOUT THIS REPORT

This first edition of the Palm Oil Barometer explores the local, national and global dimensions of the palm oil production system. It brings particular concerns to the surface around the position of small-scale farming, highlighting the opportunities and challenges that the development of sustainable palm oil chains presents to smallholders. In view of the challenges, we will examine the sector's strategies for change, and individual and collective efforts to create a truly smallholder-inclusive sector.

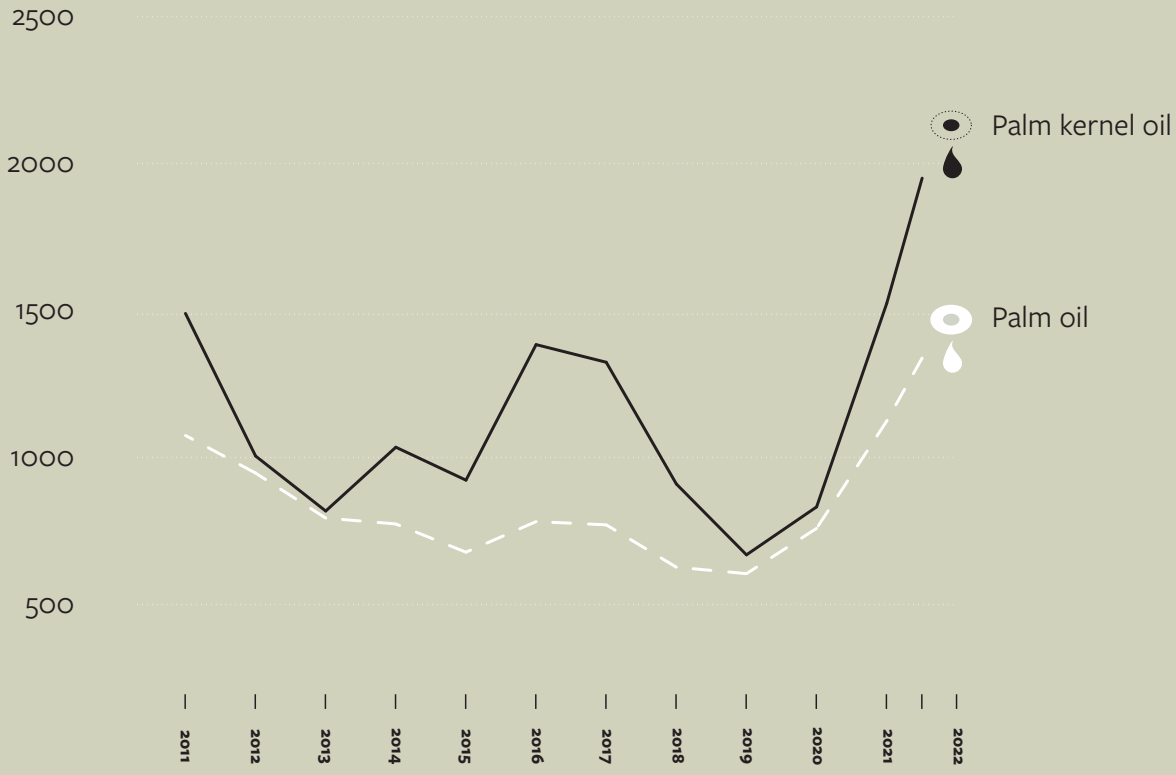
First, this report gives an overview of the palm oil market, where consumption and therefore demand is expected to increase. Against this backdrop we examine the role and position of smallholders in the production of palm oil, by observing how the socioeconomic and environmental aspects are intertwined in the main producing countries.

Second, the report questions the effectiveness of conventional sustainability interventions aiming at upgrading smallholders into modern export markets. The narrow focus of projects tends to overlook the diversity of smallholder livelihoods and denies the complex tangle of economic, social and political factors. Price premiums, market access, and offers of technical assistance are typically cited as incentives for producers to improve their practices. However, the limited scope of these strategies appears unable to drive systemic changes that are truly sustainable, inclusive and impactful at producer level, especially in the demanding environment of unorganized smallholders in Africa, Asia and Latin America (see box 2). Price volatility is another constraint, making it difficult to plan financially, which can have big implications on monthly cash-flow streams (see figure 1). For example, despite the considerable profit margins of embedded palm oil in consumer products, most smallholders consider palm oil prices too low to make ends meet.[2]

Finally, the report looks at the growing support for non-competitive sector collaboration, blending public and private investments to address fundamental sustainability challenges at an impactful scale. Several multi-stakeholder initiatives (MSIs) address the complex sustainability challenges in the sector. These MSIs involve a wide range of stakeholders, including NGOs, retailers, traders, processors and governments from consuming as well producing countries. Such broad stakeholder initiatives come in many forms and formats, like the Accountability Framework Initiative (AFI), the Palm Oil Collaboration Group (POCG) or the RSPO. A better understanding of how smallholders' interests are currently represented might help to go beyond top-down approaches and place oil palm smallholders at the centre of strategies for change.

FIGURE 1 **PALM OIL PRICE AND PALM OIL KERNEL PRICE 2011- MEDIO 2022**

(US$/mt)



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“ To succeed in the global fight against the climate and biodiversity crises we must take the responsibility to act at home as well as abroad. Our deforestation regulation answers citizens’ calls to minimize the European contribution to deforestation and promote sustainable consumption.”

Frans Timmermans,
Executive Vice-President for the European Green Deal.
European Commission (2021 November 17).

Market dynamics

2.1 INTRODUCTION

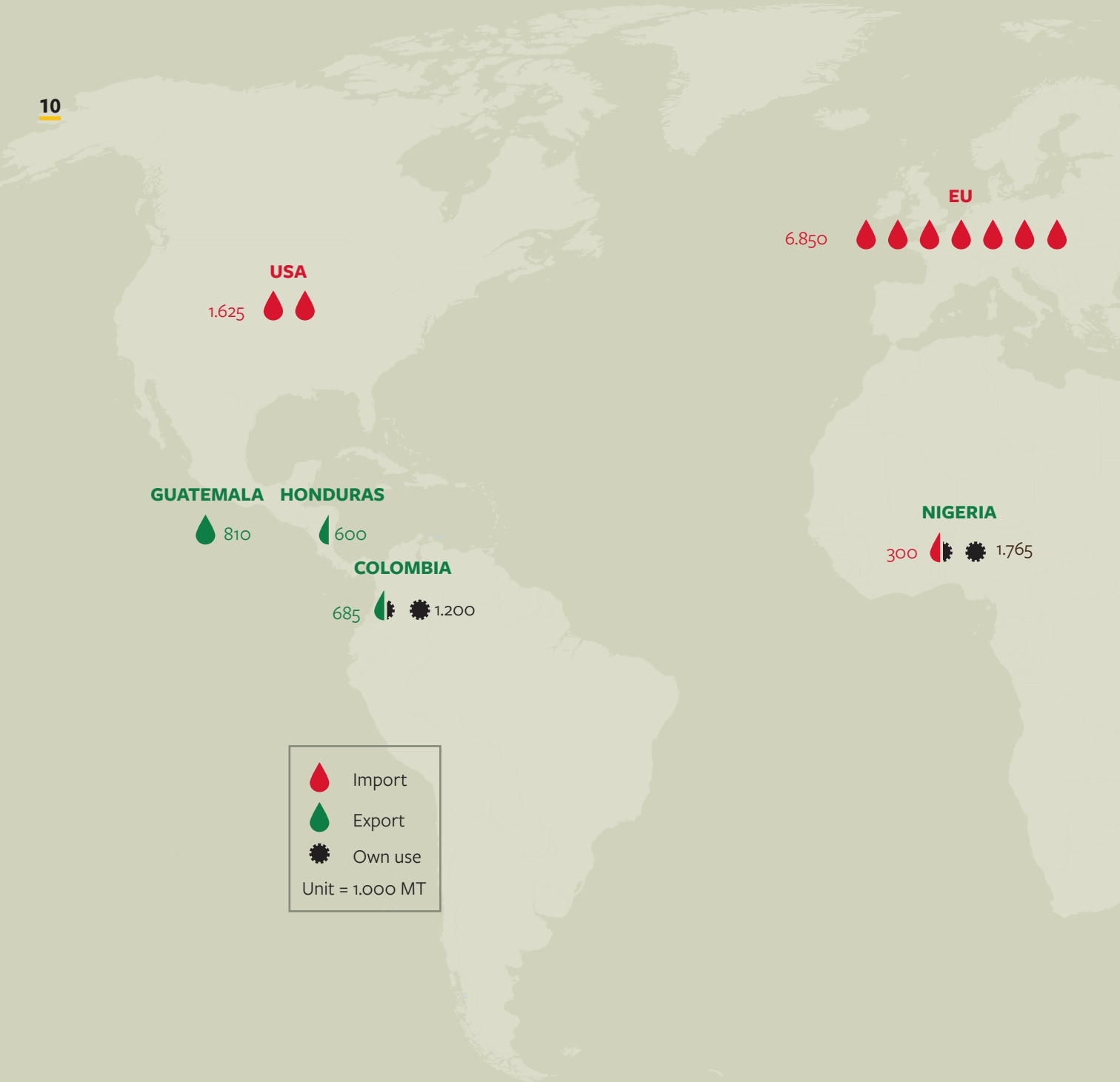
In the last two decades, oil palm expansion has taken place through different agribusiness models, with a preference for medium and large-scale, monocrop plantations, which are either state owned or private (Byerlee et al., 2017). These commercial plantations, that can extend over tens of thousands of hectares, tend to be part of large ventures often owned by multinational companies. The continuous expansion of large oil palm plantations has received much attention as the public face of palm oil production. A recent example is the controversial oil palm plantation project Tanah Merah in Papua, Indonesia. On the island 280,000 hectares of highly biodiverse rainforest is designated for conversion to palm oil production plantations and infrastructure. The pieces are all in place to predict several detrimental effects, including displacement of indigenous people, deforestation and destruction of a global biodiversity hotspot (Earthsight, 2018; Gecko project and Mongabay, 2019). Clearly, continuing with this business-as-usual approach to satisfy demand for palm oil is a far cry from promoting development with optimal social and ecological results.

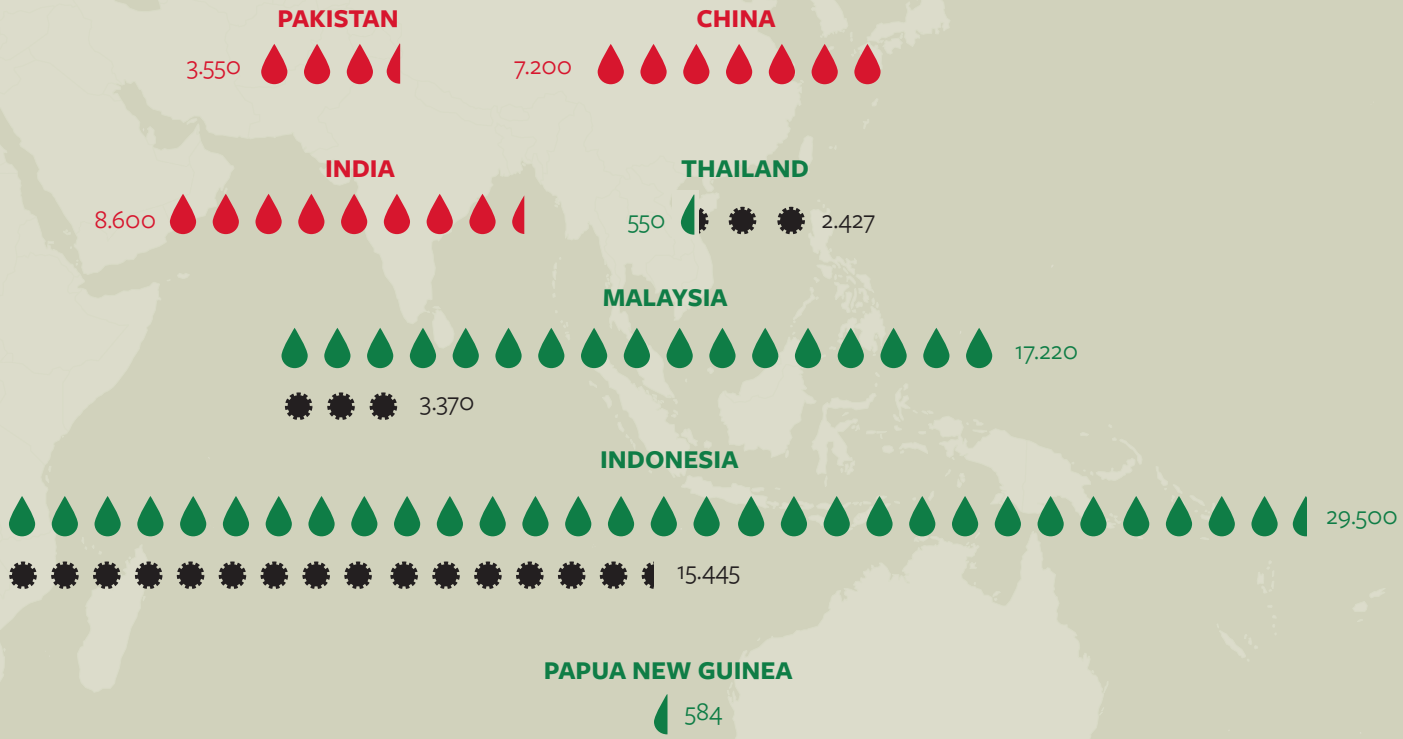
In this context, it's important to realize that approximately three million oil palm smallholders produce fresh fruit bunches (FFB) that are processed into around a quarter to one third of the total palm oil supply.[3] A widespread expectation is that, through market inclusion, small producers can contribute to meeting the global demand for sustainable edible oils. With the right incentives and support, smallholders can even prosper in the face of the palm oil sector's major challenges. To better understand their current and future position we will look at the sector's specific market dynamics in global production, consumption and the drive for sustainability.

2.2 PRODUCTION

Palm oil is a vegetable oil that is extracted from the fruit of the oil palm, a perennial tree crop. The palm bears fruit bunches that can be harvested year-round over a tree's life span of 25 years. Oil palm grows best in the lowland humid tropics of Asia, Africa and the Americas and plantations range from small farming plots of a few hectares to agro-industrial estates that cover tens of thousands of hectares. An assessment of 2019/20 satellite data has resulted in a detailed global oil palm map, which reveals a division between 73 percent industrial and 27 percent smallholder plantations in terms of area (Descals et al., 2021).[4] Plantations are found in 49 countries and the total land dedicated to the crop covers an

FIGURE 2 **GLOBAL PRODUCTION AND CONSUMPTION 2021 (EXPORT/IMPORT/USE)**




PAKISTAN
3.550
CHINA
7.200
INDIA
8.600
THAILAND
550
2.427
MALAYSIA
17.220
3.370
INDONESIA
29.500
15.445
PAPUA NEW GUINEA
584

area of nearly 21 million hectares (Mha). The actual area under oil palm production could be 10–20 percent greater than the area detected from satellite imagery, because young plantations (less than approximately three years old), open-canopy plantations or mixed-species agroforests may have been omitted. With 19 Mha, Southeast Asia has the largest area under production, followed by South and Central America (1.4 Mha), Central and West Africa (1.0 Mha) the Pacific (0.14 Mha). The region with the highest percentage of smallholder oil palm is West Africa with almost 70 percent of total plantings.

In 2021, Indonesia and Malaysia accounted for over 64 million of the 76.5 million metric tonnes of global palm oil production (USDA FAS, 2021). When considering all production regions, Southeast Asia represents 84 percent of total production, Africa is responsible for four percent and Latin America for eight percent of the volume. In just 20 years production has tripled. Global demand is on track to push production to 80 million metric tons by 2026, compared to an annual average of 73,500 million metric tons produced between 2017-2021 (USDA FAS, 2021).

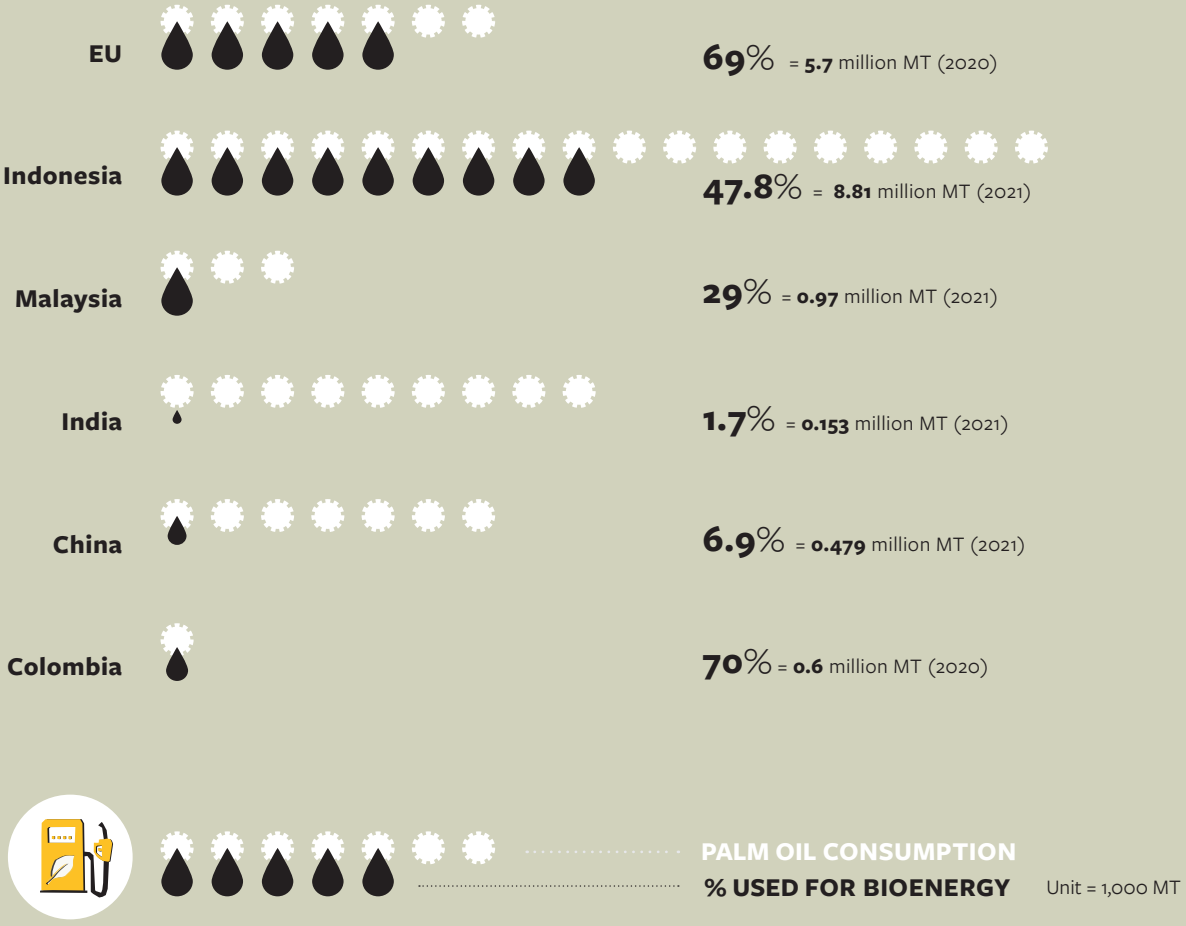
2.3 TRADE

In the movement from harvest to consumption, the oil palm's fresh fruit bunches (FFBs) are milled to derive the crude palm oil and further refined to produce vegetable oil. This needs to be done quickly, usually within 48 hours of harvest, as otherwise the fruit begins to deteriorate and free fatty acids build up (Philips et al., 2022). Often there is an intermediary or trader who organizes the transport, delivery orders, the contractual arrangement and payments between the smallholder and the mill.

In Indonesia and African countries, smallholder access to mills is often hindered by poor road infrastructure and/or long waiting lines at the mills. The price smallholders receive for their FFBs depends on access to the mills and fair-trading practices (see paragraph 3.3). At the palm oil mill, the FFBs undergo a threshing process, separating the fruits from the bunch. The fruit has a unique feature: it contains two oils of strikingly different composition. Both the flesh (known as mesocarp: 90 percent of the total oil) and the kernel can produce oil. Crude palm oil (CPO) is a deep orange-red, semi-solid fluid, while palm kernel oil (PKO) is a white-yellow oil extracted from the kernel (Murphy et al., 2021).

In Asia, the CPO and PKO oils are then transported by truck and boat to refineries, while in Africa substantial volumes are used for artisanal processing and consumption without refining (Rafflegeau et al., 2018). The refinery processes crude palm oil into household cooking oil and other refined ingredients for clients in the food, industrial and fuel industries. Refineries often source CPO from many different mills. For example, nearly 250 palm oil mills and many smaller refineries supply the Wilmar refinery in Pelintung, Indonesia. It also acts as a bulking station – a storage facility gathering truckloads of crude palm oil for bulk transportation to its next stop on the supply chain (Philips et al., 2022). The industry leaders include Wilmar International, Musim Mas, Mewah Group and Sime Darby. Many are vertically integrated (from plantations to refinery) and own a large part of the processing and storing facilities in most oil palm producing countries. They also engage in plantation management, outgrower schemes, export and import of CPO, logistics, storage, risk management and finance (Pirard et al., 2020; Rijk et al., 2021). Wilmar International, for instance, already represents the handling of 40 percent of the global CPO trade. This volume is equivalent to almost all palm oil production outside of Indonesia in 2021.

FIGURE 3 **GLOBAL PALM OIL CONSUMPTION FOR BIOENERGY**



2.4 CONSUMPTION

About 75 percent of refined CPO is processed in the food industry. Palm oil-based products might be used in the form of cooking oil, but often palm oil is embedded as an ingredient in other products like margarine, chocolate, cookies and ice cream. Approximately half of packaged food and personal hygiene products in a typical supermarket now contain palm oil. Palm oil and its derivatives are also processed in non-food ingredients for the home and personal care industry (for example, cosmetics, soaps and detergents) and industrial inputs (oleochemicals, pharmaceutical) industry. Palm kernel oil is mainly used in the home and personal care industry, and the palm kernel meal is absorbed in animal feed (Rijk et al., 2021).

One growing use for palm oil is in the bioenergy market, where edible oils like palm oil and its by-products are used as an alternative to fossil fuels. In 2020, 23 percent (17.5 million MT) of the global production of palm oil was used in biodiesel – see figure 3 for a country specific overview. Between 2021 and 2023 the EU has capped palm oil for transport fuel at

the 2019 level per member state and is phasing out its use by 2030 over concerns that the production contributes to global carbon emissions, exacerbating climate change (EC, 2019). Several EU member states have set their own reduction trajectories that decrease palm oil use sooner than the EU requires. Meanwhile, the demand for biofuels is growing in other markets. Two other major export markets for biodiesel are China and India, while in Indonesia biofuels alone account for almost half of all domestic palm oil consumption (Rijk et al., 2021). Biofuel usage targets promote the demand for palm oil and hence positively influence palm oil prices.[5] For example, Indonesia has high biofuel usage targets to maximize domestic use of palm oil and cut imports of oil. Its targets are 30 percent by 2020 and 40 percent by 2030 (CDP, 2021).

Palm oil demand will continue to grow particularly in Asia, partly because it's cheaper than other vegetable oils and is promoted as being healthier. The projection of global palm oil demand shows an estimated growth between 0.8 and 2.8 percent a year (USDA FAS, 2022; Worldbank, 2022). To meet the demand in the minimal scenario of 0.8 percent growth, production has to rise to more than 94 million MT in 2030.[6] However, the expansion of oil palm faces many challenges (Pirker et al., 2016). For instance, labor shortage has become a structural issue, and large-scale renovation (replanting) is crucial to increase and maintain productivity levels. In combination with zero deforestation commitments and governmental moratoriums on large-scale plantations expansion the widespread expectation is that smallholder farmers will play a growing role, not only to meet the global demand of palm oil, but also as stewards of natural resources and biodiversity.

Calls for corporate responsibility and strict environmental policies have led to several public and private efforts, in both consumer and producer countries. To improve the governance of palm oil production various standards and policies have been developed, such as the global RSPO. At national level there are sustainability standards too, like the Indonesian Sustainable Palm Oil (ISPO) standard, the Malaysian Sustainable Palm Oil (MSPO) scheme, the Indian Palm Oil Sustainability Framework (IPOS), and Sustainable Palm Oil (APSCO) Colombia. Although these standards and certified sustainable palm oil have an important role when it comes to working towards a more sustainable and inclusive palm oil supply chain, there are legitimate critiques on the scope, effectiveness and enforcement of certification standards and the scale of individual private sector initiatives (see chapter 4).

The demand for sustainable palm oil mainly comes from western markets, with Europe being the largest market for certified sustainable palm oil. Currently, this demand is met by the production volumes of certified plantations. It is difficult for independent smallholders to become certified. Direct benefits, like sustainable price premiums or access to new markets, are limited by the extent to which international markets absorb the total volume of certified palm oil. For instance, Europe represents only nine percent of the global palm oil market (USDA FAS, 2022), of which 70 percent is used for bioenergy, which will be phased out by 2030 (IDH and EPOA, 2021). The major importing regions, collectively responsible for about half of total palm oil imports, are the Indian subcontinent (India, Pakistan, Bangladesh) with about 13.5 Mt, China with 7.1 Mt and the EU with 6.8 Mt (USDA FAS, 2021). So far these markets do not set sustainability requirements for the volumes they import.

In Europe and the USA the sector has become almost synonymous with deforestation and biodiversity loss (Meijaard and Sheil, 2019). Consumer campaigns led by NGOs like Friends of the Earth, Greenpeace and Global Witness have raised public awareness about

the negative impacts of oil palm production.[7] Consumer sentiment in western markets has been turning against palm oil. This has led some retailers, manufacturers and consumers to boycott palm oil. For example, the UK supermarket chain Iceland tried to eliminate palm oil from its private label products or the Dutch margarine of Flower Farm branding its products palm oil-free (Southey, 2020).

Despite this, many academics and conservation organizations agree that banning palm oil would simply shift the problem elsewhere, threatening other habitats and species. Instead of a boycott, solutions for palm oil include the development of better governance and land use planning, enforcement of labor laws, price remuneration for sustainable palm oil and appropriate consumer communication.

3

“ Our lives improved a lot when we started cultivating oil palm. My daughter had the opportunity to study in a private university, I built my house, I’m much more comfortable, and we have basic utilities like water, drainage, even cable – none of this would have been possible if it weren’t for oil palm.”

Ana Villasis, a smallholder from the Ucayali region, Peru, 2022.

Smallholder farmers

3.1 INTRODUCTION

Meeting the growing demand for palm oil, while adhering to new zero deforestation commitments and the overall need to be more sustainable, will require a combination of approaches, including increasing yields in existing production areas. Minimizing negative outcomes of oil palm farming requires sustainable production methods that focus on ecologically and socially sustainable development (Cadman et al., 2019; Meijaard et al. 2020). In view of threats including climate change, poverty migration and food insecurity, it is paramount to support integrative approaches to rural development that put local people and nature at the centre.

Hence, a good starting point would be to focus attention on the lands managed by smallholders, to support poverty alleviation, food and nutrition security, resilience and livelihood security. There are excellent examples of well-organized smallholders who produce competitive yields in line with stringent sustainability standards. The higher the quality of the FFB, the greater the quantity of crude oil that can be extracted from it. Improving the yield from FFB is thus crucial for smallholders in getting a better income (Murphy et al., 2021).

Another income challenge smallholders face, although it varies from country to country, is that most of them are poorly connected with market information and each other. This makes it difficult for them to successfully compete with other actors in the value chain. They often lack the time and the money to invest in improved practices to meet social and environmental standards, which in addition may not be clearly communicated to them (Grabs et al., 2021). Irrespective of the optimal strategy, replanting with high-yielding palms or implementing land-sharing agroforestry techniques are challenging for smallholders since they may not be able to access the improved plant varieties required to increase yields (Khasanah et al., 2020; Khatun et al., 2020; Purwanto et al., 2020). In such situations, provision of technical support from government agencies, companies and NGOs may help smallholders choose intensification over clearing more land to increase the acreage of oil palms.

3.2 OIL PALM SMALLHOLDERS

Smallholders are part of the global palm oil supply chain in a variety of ways, with significant differences between countries. As global data on the number and size of smallholder

oil palm farms is not conclusive, it's estimated that some three million smallholders are involved in palm oil production worldwide and their numbers are increasing (Jezeer and Pasiecznik, 2019). There is great divergence between what is considered a small holding from country to country. Oil palm smallholders follow a wide range of land use strategies and models of social organization. Commonly, families operate as independent units and pursue their own livelihood strategy with a combination of different production activities to generate household income (Jezeer and Pasiecznik, 2019). A typical oil palm land size is below five hectares, despite the fact that the threshold for smallholder farmers is set at 25 hectares in Indonesia and at 40 hectares in Malaysia (Pramudya et al., 2022; Mohd et al., 2021).

According to the most up-to-date scientific research (Descals et al., 2021), smallholder farmers account for an estimated 27 percent of the total cultivated land area and between 25 and 30 percent of global production.[8] Large plantations often integrate smallholders through outgrower schemes or rental agreements. These so-called scheme smallholders are specialized in oil palm farming and rely on the plantation company for improved planting stock, fertilization and training. The livelihood basis for the vast majority of independent smallholders is diversified agricultural production, where the linkages between forest, farm and land support human well-being and a range of ecosystem services (Jezeer et al., 2019). These smallholders are developing their operations independently from the estates. They organize themselves in farmer groups, in cooperatives and associations, to collect and sell their FFBs to the mill that offers the best price. Or they depend on intermediaries for selling their produce as well as for access to inputs and credit.

BOX 1 **SMALLHOLDER DEFINITION**

The term oil palm smallholders or farmers often lacks a precise definition, but in practice tends to refer to differences in size and level of reliance on family labor. The farm provides the majority of income to the family, and in turn the family provides the majority of labor on their farm (Jelsma, 2017).[9] This aligns with the RSPO's definition: *Smallholders are those managing palm oil plantations of 50 hectares or less. They can operate either independently or in collaboration with companies. In this definition, the RSPO distinguishes two types of smallholders: scheme smallholders and independent smallholders.*

Scheme smallholders: *do not have enforceable decision-making power on how they operate their land and their production practices, and/or freedom to choose how they use their land, the types of crops to plant, and how to manage them.*

Independent smallholders: *all other smallholders not classified as scheme smallholders. They have the freedom to choose how they use and manage their land including the types of crops to plant.*

3.2.1 Asia

The primary regions for oil palm farming in Indonesia are Sumatra and Kalimantan. The majority of smallholders are located in Sumatra, where the oil palm sector is well established and plantations are mature. There are fewer smallholders in Kalimantan where industrial plantations tend to dominate. In these areas, smallholders develop the lands in the gaps be-

tween larger oil palm concessions (Descals et al., 2021). Although the statistics detailing the number of smallholders is limited, it's estimated that there are 1.46 million smallholders engaged in the Indonesian oil palm sector, controlling about 4.3 million hectares. About 25 percent of these smallholders are tied to companies through different partnership schemes, while 75 percent are independent, managing more than 3.1 million hectares (Rijk et al., 2021). Unfortunately, the number of the smallholders who are members of functioning cooperatives remains unknown, as is the number of medium-scale landholders in production zones (Pacheco, 2017). Despite the lack of reliable data, the Palm Oil Agribusiness Strategic Policy Initiative (PAPSI) predicts that the area of Indonesian smallholder plantations will continue to increase and account for around 60 percent of Indonesia's oil palm plantation area by 2030 (Suhada et al., 2018). This is mainly because Asia will need much more vegetable oil than present and large-scale plantations have already reached optimal productivity. The level of scrutiny is huge (with or without any moratorium) for them to expand into forests. In this scenario, growth is then automatically expected to come from smallholders (Gaveau et al., 2022).

The palm oil industries of Southeast Asia are interconnected. Up until April 2020 as many as 337,000 migrant workers (80 percent from Indonesia) worked on Malaysian plantations. Thousands of them went home during the Covid-19 pandemic, with a steep drop in production of palm oil. As a result, the oil palm yields dropped. Plantation owners are finding it harder and more expensive to hire workers, leaving plantations well below full capacity in the 2022 harvest season (Chu, 2022). Meanwhile, Malaysian and Singaporean companies, either via direct investments or joint ventures with local companies, control more than two-thirds of the total production of Indonesia's palm oil (Pacheco, 2017).

While in Malaysia the peninsula is the historic centre, considerable oil palm expansion has occurred in Sabah and Sarawak (Murphy et al., 2021). In the Malaysian model, the palm oil sector is dominated by a dozen large conglomerates that are often vertically integrated and operate plantations, mills and trade, down to the processing plants in consumer markets like Europe, China and India. The mills have contracts with smallholders who are seen as out-growers, and are managed through a range of contractual structures mediated by government agencies or companies. Large-scale plantations owned by private companies have a share of 61 percent, while 22 percent are under government schemes, half of which belong to out-grower smallholders, and 17 percent owned by independent smallholders (Mohd Hanafiah et al., 2021). There are roughly 300,000 smallholders (farmers who own 40 hectares of land or less), and of this group 260,350 are independent (Rahman, 2020). In new oil palm zones and forest frontiers, the scheme smallholder model tends to dominate. Under this model, the company obtains rights to develop the plantation on local community lands, clears the area and develops the plantation. A major portion of these plantations (80 percent) is often owned by the company while 20 percent is planted for smallholders (Pacheco, 2017).

Thailand is the third largest producer of palm oil. Small farmers owning less than 8 hectares comprise more than 90 percent of the one million planted hectares in southern Thailand. Most of the production comes from 120,000 smallholders, while an additional 180,000 smallholders and their families support their household income with oil palm (EFECA, 2020). Most of the palm oil production in Thailand is used in domestic consumption and biodiesel, with limited volumes for the export market.

In Papua New Guinea, oil palm is a very important export crop. This crop earned about 56 percent of the country's total value of agricultural exports in 2020. By 2030, the Papua New Guinea government aims to have 1.5 million hectares under oil palm cultivation, compared to about 150,000 hectares in 2016 – this implies a ten-fold increase. Large areas of rainforest are currently under concession by palm oil and pulpwood companies, contributing to large scale deforestation and conflicts with indigenous communities. In terms of rural employment, this industry creates livelihoods for about 23,000 smallholders. Notably, oil palm smallholders do not have ownership rights on the lands they operate. This tenurial right is consistent with the country's dominant land tenure system, popularly known as customary land (Eliha and Michael, 2017).

3.2.2 Latin America

The Latin American region's global market share has been gradually increasing. With a total output of 4.6 million MT in 2020/21, this region is second to Asia in global palm oil provision. It has nearly doubled its oil palm area in the last decade, making it the fastest growing producing region in the world (Furumo and Aide, 2017). The Latin American region consumes on average 75 percent of its own palm oil production, with Europe being the most important export market. Particularly in South America, palm oil production has often been promoted by government subsidy programmes and development agencies to substitute illicit crops in the region (Quiroz et al., 2021).

Oil palm expansion across the region shares two characteristics. First, large corporate plantations play a significant role in palm oil production. And second, landless rural inhabitants provide labor for oil palm farming. These workers include migrants from neighboring regions, as in the case of Guatemala or Brazil or from neighboring countries, as in the case of Guatemalan laborers in southern Mexico or Colombian workers in northern Ecuador (Castellanos-Navarette et al., 2019).

Smallholders in Latin America, though fewer than in Asia, play an important role in the production of palm oil, especially in Colombia, Ecuador and Honduras (Lesage et al., 2021). In

FIGURE 4 **OIL PALM SMALLHOLDERS PER COUNTRY**

Colombia 480,000 hectares of land is under oil palm cultivation, an increase of 75 percent during the last ten years. More than 80 percent of the 6,000+ producers are smallholders and the sector has 140 associations in which small, medium and large producers are integrated (FEDEPALMA, 2022). Together they produce almost 1.6 million MT of palm oil. Colombia is projected to produce two million MT of palm oil by 2030, increasing by around 25 percent in relation to current levels, with palm oil-based biodiesel as an important and growing market (Kuepper et al. 2021). Guatemala's oil palm cultivated area is approximately 180,000 hectares, having increased by about 130 percent over the last ten years. Officially, there are only 235 oil palm growers in the country. Smallholders account for 55 percent, while one third are medium-sized producers and 12 percent are large producers. In contrast, in Ecuador oil palm is cultivated by some 6,600 producers, of whom 96 percent are smallholders with fewer than 50 hectares. In 2020/21 the country produced 540,000 tons, a decline of 15 percent over the last five years due to the impact of bud rot disease (Kuepper et al. 2021). Honduras produced 600,000 MT of palm oil in 2020/21. Approximately half the oil palm area is cultivated by 16,000 smallholders with land sizes between five and 25 hectares (Lagunes-Espinoza et al., 2022; Solidaridad Central America, 2022).

3.2.3 West Africa

Oil palm is a perennial crop native to Africa and there are some industrial operations and plantations that have been active there for a long time. However, only recently oil palm industries are expanding in many of West Africa's tropical countries with Nigeria, Ghana, Côte d'Ivoire and Cameroon as the main producers (Paterson, 2021). In most countries oil palm crops are used for local consumption, with Côte d'Ivoire and Cameroon as the only major palm oil exporters (Murphy et al., 2021). Smallholders manage a far greater total land area than industrial plantation producers, cultivating anywhere between one and 50 hectares of land.

The available data on the number and size of oil palm producing plots is not conclusive and accurate data on the number of smallholder farmers is even harder to find. In Ghana, there are more than 20,000 smallholder oil palm farmers. Independent smallholder farmers play a

THAILAND

300,000

CÔTE D'IVOIRE

31,000

PAPUA NEW GUINEA

23,000

GHANA

20,000

HONDURAS

16,000

EQUADOR

6,400

COLOMBIA

4,800

significant role, accounting for about 60-80 percent of production (Khatun et al., 2020). In Côte d'Ivoire there are 44,900 oil palm growers, of whom about 70 percent are smallholders (Guero et al., 2021).

The expectation is that palm oil production will accelerate across Africa (Feintrenie et al., 2016). However, due to current socio-cultural, technical, political and ecological constraints, only around one-tenth of the potential 51 million hectares in the four main producing countries in tropical Africa are likely to be profitably developed in the near future. Although this might change as technological, financial and governance conditions improve.

3.3 PROFITABILITY AND INCOME

Many smallholders are attracted to growing oil palms for its greater yield and potentially higher prices, as well as the fact that it can be harvested year-round, providing a steady cash flow. Compared to other commodities like cocoa, coffee or tea, oil palm is seen as a profitable crop and price is rarely the subject of public debate. It's likely that this is linked to the fact that palm oil is generally more profitable and that, in most cases, smallholders have larger plots than their peers in other crops.

Multiple factors can influence a farms' profitability, including its size, exchange rates, labor costs, market access, fertilizer costs, or lack of access to capital and insurance. In addition, farmers' revenue depends on the quantities they sell, the prices they receive and the production costs. To receive a fair price for their FFBs, smallholders are often reliant on a variety of conditions:

- The implementation of a pricing mechanism formula that's often prescribed by local or national governments.
- The world market price, as the price received by smallholders often relies on global prices.
- Whether the buyer is selling to intermediaries or directly to the mill
- The state and availability of local infrastructure and transport logistics
- The number and capacity of mills that can be reached before the FFB starts to deteriorate.
- The reliability and fairness of weighing scales and quality control procedures.
- The efficiency of the mill, as the price received by smallholders often relies on the Oil Extraction Rate (OER).

Farmgate prices are influenced by the national pricing mechanism policies in Indonesia, Malaysia, Côte d'Ivoire and India (Asante-Poku and Dzifa Torvikey, 2021).[10] From the perspective of smallholder inclusivity, it's important to note that:

- If government authorities set the price for all transactions, it's crucial that the information is widely and freely available to all stakeholders.
- Fixed pricing formulas that include the world price for CPO risk the possible volatility transmission from the world price to the local price. Most smallholders favor stable prices that allow them to generate a living income throughout the year. Pricing mechanisms should take into account the ability of smallholders to earn a living income.

Additionally, farmers are constantly facing rapid changes in the market. In May 2022, the Indonesian government temporarily banned the export of palm oil. As a consequence of this ban, larger companies could no longer export and storage capacity filled up, leading to mills reducing production and limiting purchase from smallholders. Through these dynamics, the volatile market prices squeeze smallholder margins that are already narrow (Llewellyn, 2022).[11]

> *"Before the ban, we would sell our palm fruit for 3,600 to 3,800 rupiah (USD 0.25 – USD 0.26) per kg. Now the price has gone down to 2,210 rupiah (USD 0.15) per kg. [...] Farmers have been forced to accept lower and lower prices for our palm fruit and, in addition to the price of fertilizer rising, the price of pesticides has also doubled. We are now losing money and not making any profit."*
>
> **Vincentius Haryono,**
> **farmer of four hectares of oil palm, Jambi, Indonesia**

> *"Our hope is that the price will rise again, but there is a limit to farmers' patience, and they are not going to want to harvest. It's going to cause social problems if the ban lasts much longer. How are people meant to pay for their daily needs? How are they going to send their children to school? How are they going to buy groceries?"*
>
> **Albertus Wawan, farmer of five**
> **hectares of oil palm, West Kalimantan, Indonesia**

Although the specific country context of palm oil pricing mechanisms plays a role in smallholders' income, it's important to realize that palm oil is a buyer-driven chain. While palm oil is increasingly lucrative, with a value of USD 282 billion in 2020, smallholders only generate USD 17 billion, or six percent of the value in the entire chain (Rijk et al., 2021, see figure 5). Smallholders lack the economic scale to generate the same profit margins as large plantation companies, but data suggest that they generate the same price level per produced metric ton of CPO. With an extraction rate of CPO from FFB of approximately 20 percent, production per hectare can be 3.5 MT of CPO, making it approximately 10 MT of CPO per smallholder. Consequently, with a palm oil price of USD 754 per MT (2020), the average revenue for a smallholder is approximately USD 7,540 per year.[12] With a USD 7,540 per year revenue and an average household of 4.3 people, there's a high chance of poverty with this income level. Thus, the concept of 'profit' is not applicable to smallholders (Rijk et al., 2021). Research in Malaysia illustrates this lack of profit margins, and similar patterns are found in Mexico and Indonesia too:

Malaysia: smallholders consider low prices as a key issue, stating that the average FFB price for the last 3.5 years hardly covers the cost of operations. This is also related to high input costs, particularly agrochemical inputs and labor – due to a shortage of workers, smallholders often have to pay workers higher rates than the commercial plantations. A typical Malaysian oil palm smallholder has an annual income of USD 8,377 per hectare per year and makes a net profit of USD 4,236 per hectare per year. The annual national living wage (2019) for a Malaysian family is between USD 4,021 and USD 5,831. To reach this living wage, an oil palm farmer in Malaysia needs around 1 to 1.4 hectares.[13]

Mexico: a typical Mexican oil palm smallholder has a production area of five to seven hectares, an annual income of USD 2,813 per hectare per year and makes a net profit of USD 989 per hectare per year. The annual national poverty line for a Mexican family is USD 5,124 and the living income for a rural family is USD 9,312. To reach above the family poverty line, an oil palm farmer needs around 5.2 hectares. To make a living income, 9.4 hectares are required. Based on palm oil income alone, this means that the typical farmer with five to seven hectares under production can generate an income that's above the national poverty line, but insufficient to make a living income.[14]

Indonesia, West Sulawesi: a 2021 study shows that in 2018, a year with low palm oil prices, the average total net income from oil palm farming was USD 1,827 per farmer. Oil palm farmers complemented their income with on-farm and off-farm activities to reach a total household income of USD 2,129. The average household spending was USD 1,643. While this might seem a profitable business case, it's important to note that in the same year the annual living wage for a typical Indonesian family was between USD 1,724 and 2,372. All surveyed smallholders reported that low and unstable FFB price is a serious problem for them. The researchers found that lack of management knowledge is another big problem faced by smallholders, followed by herbicides and fertilizer scarcity. [15]

> *"It's getting more and more difficult for farmers with all these changes in the prices. Some feel as if 50 percent of their livelihood has been lost as the prices of the fresh fruit bunches have been slashed and, at the same time, the prices of fertilizers and pesticides have risen by more than 100 percent."*
>
> **Valens Andi, head of the Farmers' Hope Oil Palm Plantation Cooperative, West Kalimantan, Indonesia**

BOX 2 **SMALLHOLDER INCLUSIVENESS**

To discuss inclusiveness in the palm oil supply chain, it's helpful to specify the concept of inclusivity in relation to smallholder farmers. Vermeulen and Cotula (2010) developed a typology of smallholder-inclusive agribusiness models spanning the four dimensions of inclusion; ownership, voice, risk, and reward. The operationalization of these different aspects allows for an integral perspective on inclusiveness and a better understanding of the actual conditions under which smallholders are included in business practices (Schouten and Vellema, 2019).:

1. Ownership: deals with the question who owns what part of the business, and assets such as land and processing facilities.
2. Voice: the ability of marginalized actors to influence key business decisions, including weight in decision-making, arrangements for review and grievance, and mechanisms for dealing with asymmetries in information access.
3. Risk: including commercial (i.e. production, supply and market) risks, but also wider risks such as political and reputational ones.
4. Reward: the sharing of economic costs and benefits, including price setting and finance arrangements.

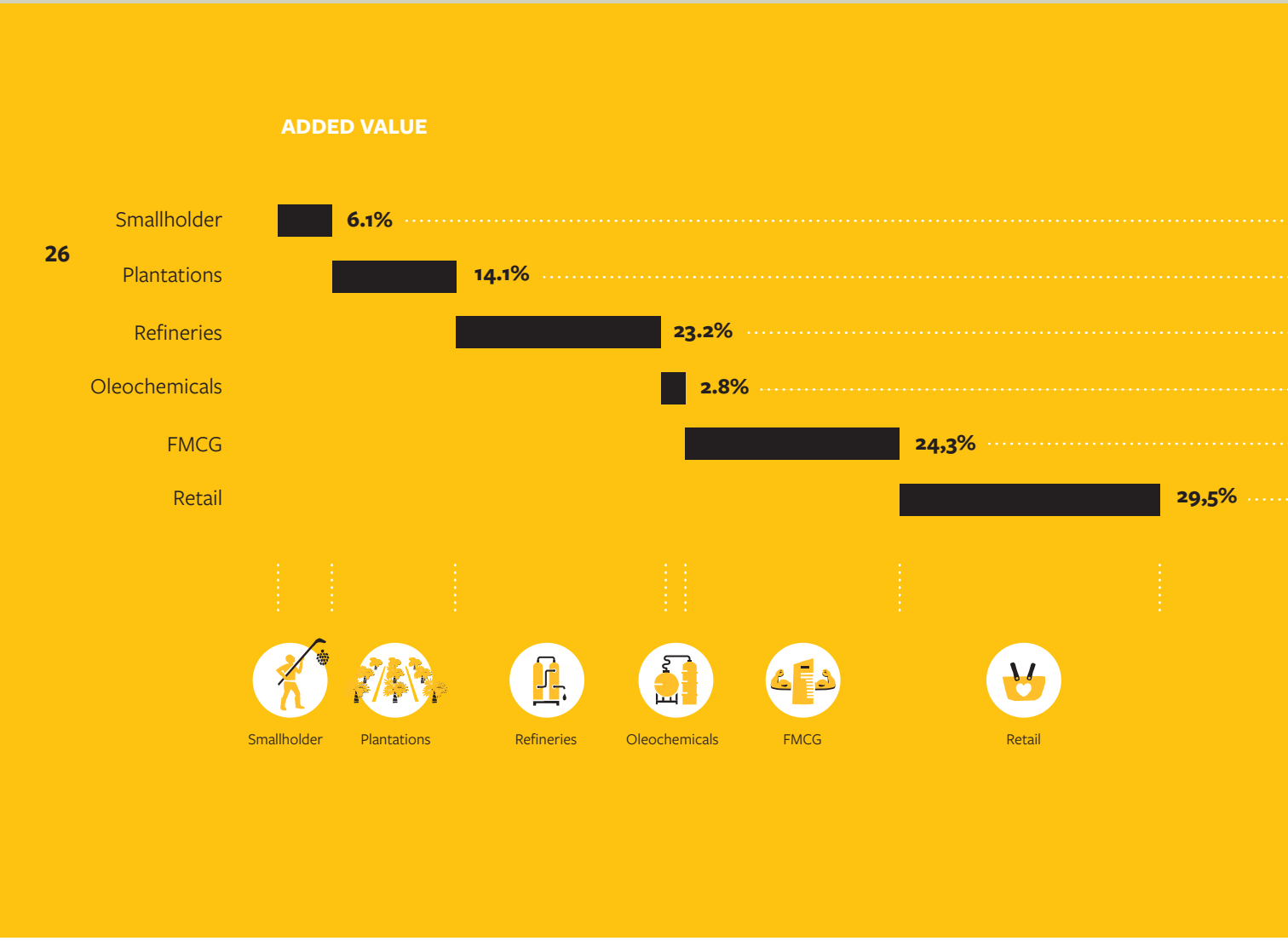
To deliver on all four aspects of inclusive agribusiness, it's crucial to be aware of the close interlinkages. For instance, ownership can influence voice, voice in price-setting crucially affects reward. Ownership influences risk, as a jointly owned business also involves sharing of business risks.

Translating ideas of inclusiveness from scientific thought to the application in the palm oil sector is not without its challenges. Therefore, we do not strictly follow the above operationalisation criteria in this report, instead we highlight interlinked elements like income and value distribution, corporate transparency or participation in MSIs.

3.4 FAIR VALUE DISTRIBUTION

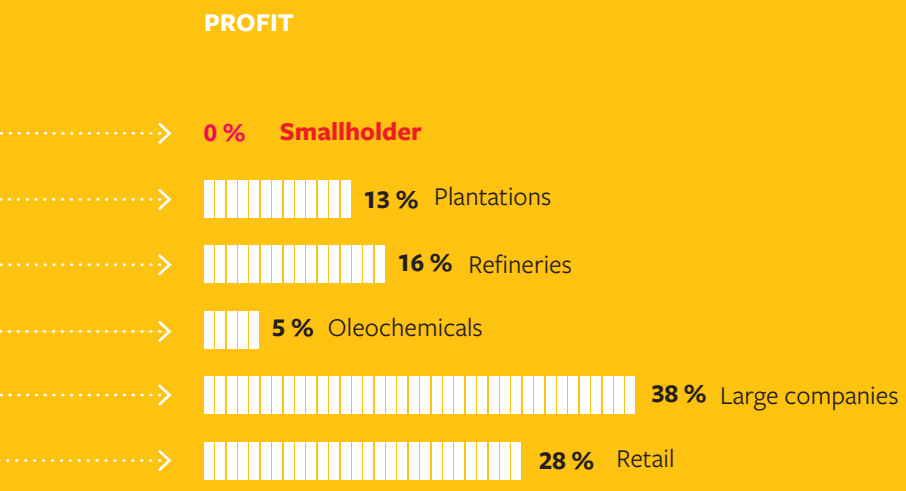
While smallholders are struggling to make ends meet, on the downstream end of the chain, food manufacturers and consumer goods (FMCG) companies and retail manage to generate 66 percent of the gross profits on embedded palm oil. This is critical for understanding the distribution of value in the palm oil chain. The focus to cut costs to optimize profits is in sharp contrast with the individual companies' sustainability commitments, as well as the global climate and UN's Sustainable Development Goal agendas. The underlying concern is that global palm oil buyers show little willingness to compensate producers for operating sustainably, for example, by paying a premium price or investing in long-term trading relationships. For instance, WWF highlights the complete lack of demand for certified sustainable palm oil in the Asian market. This is due to complex challenges such as the persistent lack of transparency on the palm oil footprint of companies in the region, a low consumer awareness and the absence of clear labelling of palm oil products (WWF, 2021). Ultimately, companies' inclusive business approaches should aim to ensure that smallholders are in a position to safeguard the wellbeing and rights of the community and the environment (see Box 2). This would create a more balanced relationship between producers, buyers and service providers. Therefore, the business and corporate social responsibility perspectives are meant to be integrated, not separate.

FIGURE 5 **OVERVIEW PROFITABILITY IN THE PALM OIL VALUE CHAIN**



Smallholder farmers' livelihoods depend on the use of land, forest, other natural resources, their harvest and price levels. As seen from the above country overview, smallholders are not a homogenous group. In most geographies, they range from subsistence farmers to scheme growers and medium enterprise owners. Nevertheless, in their oil palm growing practices all these small farmers must constantly consider multiple needs including diversifying income, ensuring food security, and protecting cultural values (Jezeer and Pasiecznik, 2019). Given the entrepreneurial nature of agriculture, smallholders have to analyze their options, manage risks and make their own decisions – even in the face of information asymmetries and unfavorable policies. Naturally, their priorities might be summarized as improved well-being, stability and creating better future perspectives.

While most smallholders have practical experiences and knowledge of the land, crops and natural resources, there is a lack of knowledge and skills in processing, logistics and commercialization (Prabowo, 2021; Santika et al., 2019). Mainly because of logistics and the need to sell FFB within a short time post-harvest, farmers are strongly affiliated with a limited number of mills or collection centres in their direct vicinity. Combining this with the lack



$

Profit

Explanation: the embedded palm oil supply chain generates a total value of USD 282 billion, USD 52 billion of gross profit, and USD 18 billion of operating profit. Retailers generate the largest value (USD 83 billion) in embedded palm oil. The FMCG sector generates the largest gross profit at USD 20 billion and an operating profit of USD 6 billion. Although smallholders generate USD 17 billion, which is six percent of the entire chain, their share in profits is close to zero (Rijk et al., 2021).

of land tenure and access to affordable bank loans, it's a constant challenge to invest in the farm itself. Lack of finance, risk avoidance and securing livelihood sustenance are at the centre of their decisions, which hinders the adoption of farm-level innovations, like better farm management techniques or adhering to sustainability standards.

The difficulty for most smallholders is having to make livelihood choices while lacking access to information about market demands, social and extension services, environmental regulation, and the global market. All of this information is necessary to improve their productive capacity and align with sustainability standards. A common issue for smallholders cited by oil palm farmer organizations is a lack of financial resources. Typically, available cash is invested in immediate consumption, or reserved for education or health care expenses.[16] A fairer value distribution across the palm oil value chain enables farmers to both escape poverty and make an income that sustains their family's livelihood.

4

“ The palm industry has really contributed to the reduction of poverty in our country. But once we passed the survival stage and started to see some profits, we started to think that there were many other factors that we had to take into account.
Our production should be responsible and environmentally friendly, we must treat our workers properly, and maintain good relationships with the communities around us. We also realized that we needed to take it one step further to be able to access other markets around the world.”

Nelson Araya, General Manager of farmer group Hondupalma, Honduras

Smallholder inclusivity

4.1 INTRODUCTION

The majority of FMCGs have adopted sustainable palm oil sourcing policies, voluntarily committing to social and environmental best practices, including RSPO certified palm oil and no deforestation, no peat, no exploitation (NDPE) policies. Or they are pledging zero-deforestation commitments. However, reaching zero deforestation and smallholder inclusion are very different goals that must be pursued at the same time. Since FMCGs frequently do not know who their smallholder-suppliers are, let alone where they are located or what capabilities they have (or do not have) (Lake et al., 2020), it is difficult to deal with increasingly demanding sustainability challenges. Interest and progress in legal interventions is growing as a potential stronger mechanism for changing corporate practice. An example is the upcoming EU-wide legislation on human rights and environmental due diligence in global supply chains (Drost et al. 2022).

Currently, not all companies' policies are effective and functional, nor do they reflect the scale of investments required for the palm oil sector to make meaningful progress. Most oil palm smallholders are poorly equipped to comply with sustainability standards (Kusumaningtyas, 2019). And, without adequate support, they risk becoming increasingly alienated from both domestic and global palm oil markets. Ideally, the combination of private sector commitments, international trade policies, multi-stakeholder collaboration and financial support are inclusive of smallholder producers. Otherwise these efforts will not halt deforestation. Instead they will fail to help these communities to finance the agricultural improvements necessary to thrive (Pasiecznik and Savanije, 2017; Orbitas, 2020). It would be reasonable to expect an active contribution from all involved to foster smallholder inclusiveness (see Box 2) in any of these initiatives. By recognizing the need for increasing participation and encouraging collective action from local people by building on their ideas, it is feasible to go beyond a short-term technical assistance agenda.

4.2 CORPORATE TRANSPARENCY

Upstream the value chain, in the refinery segment only a few dozen refineries (processors/traders) source from thousands of palm oil mills. These companies are relatively close to the farmers and most of them are directly involved in the design and implementation of training programmes to improve and protect economic, social and environmental conditions at the beginning of the palm oil chain. Typically, FMCGs expect their first-tier suppliers (traders and refiners) to comply with sustainability standards. In turn, they ask for compliance from their suppliers (mills), who ideally ask the same from their suppliers (farmers). In doing so, the industry claims palm oil can be grown sustainably, responsibly and conflict-free (Dauvergne, 2018). By positioning corporate investment, international trade and industrial-scale production as vital for conservation, food security and rural development, this industry-friendly narrative is directing criticism towards unsustainable production, with smallholders in particular being blamed for practices such as deforestation (Austin et al., 2019; Kusumaningtyas et al., 2019).

Figure 6 is based on information available on the SPOTT (Sustainable Palm Oil Transparency Toolkit) online platform. It provides an overview of how the 10 main palm oil refineries, processors or traders address smallholder issues in their operations.[17] This includes how they incorporate smallholders into their commitments, disclose information on the smallholders they source from, and provide details on the levels of support they provide to smallholders in their supply chains (Dodson et al., 2019).

The combination of SPOTT results and companies' own sustainability information shows that companies vary significantly in the transparency and strength of their smallholder farmer inclusion policies and reporting. If sustainable palm oil is to become the norm, corporate commitments and sustainability reports give some insights, but the reporting is rarely easy to compare (Spencer et al., 2019). Furthermore, the available evidence focuses on policies, without any reference to the resulting change in impacts at farm level or in purchasing practices. This lack of transparency inhibits third parties' ability to assess the actual impact of existing smallholder programmes. For example, geolocating production areas can let companies identify potential risks, engage with suppliers, and measure progress. Ideally, these geolocation data would include a level of transparency that identified the specific boundaries of farms where oil palm fruit is harvested (Global Forest Watch, 2022).[18] In reality, for most companies, tracing palm oil to independent smallholder source farms is very complex, time-consuming, and costly (Sargent et al., 2020). An illustrative example is the decision by confectionery and pet food producer Mars to limit the number of palm oil mills in its supply chain from 1,500 to 50 in 2022 (Taylor, 2020). In this scenario smaller farmers and suppliers could be left behind, continuing with bad practices and selling to global buyers that do not have safeguards on forest protection. At the same time, Mars committed to long-term contracts with suppliers who in turn work with a lower number of smallholders in high-risk areas of its supply chain. This shows the balancing act of buyers: while some smallholders might be left behind by a companies' supply chain cleaning, others stand to gain from a stronger relationship.

4.3 VOLUNTARY COMMITMENTS

4.3.1 Certified Sustainable Palm Oil

RSPO is the leading sustainable palm oil certification system. It covers a set of environmental and social criteria with which companies must comply to produce Certified Sustainable Palm Oil (CSPO). It was created in 2004 with the goal of promoting the growth of the sustainable palm oil sector through credible global standards and engagement of stakeholders. Today the RSPO has over 5000 members, encompassing the entire supply chain, from oil palm producers to investors. Only 19 percent of global palm oil production is RSPO certified (RSPOa, 2022).[19]

A major problem is that the RSPO is not yet sufficiently smallholder inclusive (Bitzer and Steijn, 2019). At this stage the number of certified farmers is still low: only 162,500 smallholders (22,338 independent and 140,162 scheme smallholders) are certified and produce almost nine percent of the global CSPO volume (RSPO, 2022b). Scheme smallholders (producing under contract with large palm oil companies) can be certified more easily, but independent smallholders often lack organisation, land titles, and training on specific management practices, which are important preconditions for certification (Pramudya et al., 2022).

To improve smallholder inclusion into the RSPO system, among other measures, a specific Independent Smallholder Standard (ISH) was adopted in November 2019 (RSPO, 2022b). This standard lowers the burden to entry through a phased process for reaching and verifying compliance. Despite many smallholder support programmes, uptake by smallholders and medium-sized companies remains difficult (RSPO, 2022c). Of course, this strategy will only succeed if the global market demand creates clear economic incentives for independent smallholder producers, like price premiums or access to markets.

FMCGs and other companies can directly incentivize smallholders by purchasing RSPO Credits via the online trading platform PalmTrace (RSPO, 2022d). From July 2020 to June 2021, 47 independent smallholder groups raised almost USD 3 million through RSPO Credits. There's a lot of room for growth, since only 64 tonnes or 0.1 percent of the global volume is covered by ISH credits.[20] This support not only builds an end-to-end value chain but also generates resources that can be invested in farmers' businesses, benefitting the wider community (Prabowo, 2021).

4.3.2 Multi-stakeholder initiatives

Certification is just one aspect that can make palm oil production more sustainable – it's not sufficient to resolve all the sector's pressing problems. This requires more collective action of a wide range of stakeholders, including the private sector, governments, civil society and farmer organizations. The most influential sector partnerships and MSIs are presented in figure 7 and include the RSPO, the Consumer Goods Forum's Forest Positive Coalition (CGFFPC), the Palm Oil Collaboration Group (POCG) and the Accountability Framework Initiative (AFI). A potential benefit of these partnerships is that they can help stakeholders to better understand the challenges of others in the sector and identify opportunities to acknowledge successes and share best practices via collaboration. Ideally, they reduce the sector's fragmentation of sustainability efforts and enhance transparency and accountability.

FIGURE 6 **OVERVIEW INDIVIDUAL COMPANY SPOTT CONTENT**

We are making good progress in achieving certification for our scheme smallholders with about 31% of scheme smallholder areas across Indonesia and Ghana RSPO-certified at end 2020.

wilmar

All six of the company's sister companies commit to support smallholders. However PT OSI is the only company to disclose the nature of this commitment. These commitments also do not clearly cover all smallholders i.e. scheme/plasma smallholders

HSA

SPOTT indicator	SPOTT nr.	Wilmar	Musim Mas	Apical Group	HSA Group
Commitment to support smallholders	160	●	●	●	●
Programme to support scheme/plasma smallholders	161	●	●	●	●
Percentage of scheme/plasma smallholders involved in programme	162	●	●	●	●
Programme to support independent smallholders	163	●	●	●	●
Percentage of independent smallholders outgrowers involved in programme	164	●	●	●	●
Process used to prioritise, assess and/or engage suppliers on compliance with company's policy and/or legal requirements ESG	165	●	●	●	●
Number or percentage of suppliers assessed and/or engaged on compliance with company requirements ESG	166	●	●	●	●

We must do more to develop improved metrics and reporting practices, encourage stakeholder collaboration, co-develop and implement better and stronger regulations, and bolster investment incentives. Musim Mas also recognizes the urgent need to make progress against our sustainability commitments across our entire supply chain

MUSIM MAS

We must do more to develop improved metrics and reporLaunched the SMILE programme in October 2020 to help independent oil palm smallholders in Indonesia to improve their yieldsing practices, encourage stakeholder collaboration, co-develop and implement better and stronger regulations, and bolster investment incentives.

Apical

SPOTT assesses 100 palm oil producers, processors and traders on their public disclosure of Environmental, Social and Governance issues (ESG). Here we only highlight some examples of the 7 smallholder indicators. For a complete overview of company performance visit the SPOTT benchmark website: Palm oil: ESG policy transparency assessments - SPOTT.org
>> www.spott.org/palm-oil/

The company reports to have a total of 61,719 smallholders in its entire supply chain across Papua New Guinea, Indonesia and Malaysia, as of 2020.

Sime Darby

The company is hosting workshops and educate its smallholders on the adoption of sustainable agricultural practices in oil palm cultivation.

Mewah

LDC	Sime Darby	Cargill	Mewah Group	IOI Group	Bunge
🟢	🟢	🟢	🟢	🟢	🟢
🔴	🟢	🟢	🟠	🟢	🟠
🔴	🟠	🟡	🟠	🔴	🔴
🟡	🟢	🟢	🟡	🟢	🟡
🟡	🟠	🟠	🟠	🟠	🟠
🟢	🟢	🟢	🟢	🟢	🟢
🟡	🟡	🟡	🟡	🟡	🔴

The company reports to have a smallholder programme called ILHAM with the aim to "boost small farmers' productivity by helping them implement sustainable agricultural practices."

BUNGE

The company states that it has assisted outgrowers for one of its mills achieve MSPO certification, and also provided fertiliser to other smallholders, however clear numbers are not reported.

IOI GROUP

The company reports that in 2020, 40% of mills supplying to its refineries participated in engagement workshops on how to use its self-declaration tool to show compliance with its policy.

LDC. Louis Dreyfus Company

The company reports in ACOP 2018 that "It has a 2 year contract agreement with about 3,000 independent smallholders located in Ketapang to receive their FFB crop", but a percentage could not be calculated as only an approximate figure is reported.

Cargill

A key characteristic of MSIs is that (in theory) participants share decision-making responsibilities. Thus, understanding who participates in the governance of an MSI is an essential first step to understanding who has power within the initiative, in terms of both shaping the initiative's goals and leveraging its resources. Therefore, the involvement of smallholder farmers is integral to an MSI's legitimacy and its potential to have a positive impact on local communities (MSI Integrity, 2017). Smallholders and their organizations are uniquely positioned to help an initiative build local trust and capacity around programme implementation and to create true impact at community level. Farmers could also steer initiatives towards addressing the issues of greatest importance to their communities. Or, they may help advance learning and dialogue within an initiative by directly engaging and providing feedback to company representatives (MSI Integrity, 2020).

Despite the importance of including smallholders in decision making, there are not many MSIs that actually do this. Of the different partnerships, only the RSPO has smallholders represented in its executive board. The other initiatives should acknowledge local people's interests and agenda setting, too, to avoid developing top-down solutions. Clearly, we need to pay more attention to how we can support smallholders in their capacity to make choices in the face of new opportunities, shifting power structures and external sustainability agendas. One of the greatest challenges is that smallholder palm oil growers themselves are often not organized to represent their views in such MSIs. Nevertheless, even existing farmer organizations stress the fact that smallholders should have more influence in the palm oil sector. The organizations particularly ask for support in their efforts to bring local voices into the global debate in search for better informed policies and practices.[21]

4.4 MANDATORY REGULATIONS

Increasingly, governments, civil society, companies, investors and business groups recognize the need to complement voluntary approaches with regulations, in both consumer and producing countries. In 2021, the European Commission launched a proposal to require operators to ensure only deforestation-free products are put on the EU market in an attempt to reduce the EU's impact on global deforestation and forest degradation. On top of that the European Commission presented a proposal in 2022 to require European companies and those operating in the EU to undertake mandatory human rights and environmental due diligence in their global operations and supply chains.

While these more stringent regulatory initiatives seek to address negative social and environmental impacts, it's important to be aware of their potential unintended effects. A lesson from voluntary initiatives is that compliance with certification standards is easier to arrange for bigger players. Smallholders are perceived as a risk, since it's more difficult to assure their compliance with regulations. Furthermore, economies of scale work in favor of large companies, with respect to auditing costs, for example. As such, the costs of organizing compliance and minimizing risk at smallholder level are higher.

In various producer countries national sustainability standards have been developed. For instance, Indonesia, Malaysia and Colombia have developed their own sustainability standards and certification scheme for palm oil: Indonesian Sustainable Palm Oil (ISPO), Malaysian Sustainable Palm Oil (MSPO) and Colombian National Sustainable Palm Oil Program (APSCO). This is also connected to the growing importance of South-South trade, which creates

FIGURE 7 **OVERVIEW MULTI-STAKEHOLDER INITIATIVES**

	Governance	**Reference to smallholder inclusiveness**
Roundtable on Sustainable Palm Oil (RSPO)	One seat allocated to smallholder representation in the board One of four Standing Committees dedicated to smallholders' interests	RSPO recognises the importance of smallholders and the need for improving smallholder inclusion into the RSPO system
Consumer Goods Forum's Forest Positive Coalition (CGFFPC)	Only CEOs of FMCGs and retail companies, no specific role for smallholder representatives	Smallholders need support to help them to earn a living while protecting forests
Retailers Palm Oil (RPOG)	Only retail companies can become members, no specific role for smallholder representatives	We focus on positive environmental and social outcomes, including supporting smallholder farmers
Palm Oil Collaboration Group (POCG)	Brings together companies in the palm oil supply chain, no specific role for smallholder representatives	The Production and Protection Beyond Concessions working group aims to support smallholder production and forest protection beyond concessions through identification of proactive interventions, action protocols and targeted monitoring.
Accountability Framework Initiative (AFI)	International coalition of civil society organizations dedicated to protecting forests, natural ecosystems, and human rights: while there is a private sector advisory group there is no representation of smallholder organisations in this group.	The AFi aims to facilitate smallholder inclusion in ethical supply chains by clarifying how implementation and monitoring of commitments can be adapted to smallholder contexts.

new market opportunities for producers of agricultural commodities that are not subject to the specific sustainability demands from European or American buyers (Schleifer and Sun, 2018).

Although ISPO, MSPO and APSCO are presented as an alternative to sustainability initiatives that are perceived to be dominated by western perspectives, many of the implementation challenges remain (Bakhtary et al., 2021). For instance, in Indonesia the latest revision of ISPO obliges all big and small plantations to have ISPO certification by 2025. Data on ISPO's achievements from December 2020 indicated that only 17 smallholder cooperatives covering 12,809 hectares (or 0.19 percent of the total smallholder plantation area) were certified. Failure to comply will risk independent smallholders being considered illegal (Pramudya et al., 2022).

To ensure such regulatory frameworks don't marginalize smallholders, it is important that producing and consuming governments, as well as companies across the supply chain, provide specific support to meet requirements. This way smallholders are not just part of the problem, they can also be an essential part of the solution to effectively halt deforestation and forest degradation (Solidaridad et al., 2021). The EU could improve the relevance and credibility of voluntary and mandatory standards by partnering and negotiating with local stakeholders and providing support, thereby stimulating a robust sustainability framework for palm oil production and consumption. The new Renewable Energy Directive II (EC, 2019) shows how this can be done. It includes provisions to ensure palm oil used for biofuels is not sourced from deforested areas or peatland, though smallholders with plantations of up to two hectares are exempt. Joint efforts in such a partnership could also reduce perceptions of antagonistic positions, develop trust, and provide a mechanism that combines key priorities of all countries involved (Roozen, 2019).

4.5 ACCOUNTABILITY

To date, individual company sustainability policies and collective initiatives have not been able to significantly improve the position of smallholder farmers in the palm oil sector. For example, the RSPO appears unable to reach smallholders at scale. And the challenging living income and living wage question only recently started featuring the palm oil sector's agenda (Ichsan et al., 2021).

Whilst some companies are demonstrating that they are taking necessary steps to implement a comprehensive sustainability agenda, to become smallholder inclusive, the sector as a whole needs to substantially improve its actions and investments with a lens on the smallholder perspective. While global demand for palm is growing, only half of palm oil producing companies are currently working with their suppliers to manage supply chain sustainability risks. Overall, behind the SPOTT smallholder indicator scores, the actual activities tend to focus on technical assistance and training and seem only able to reach a relatively small minority of farmers. Without significant interventions that compensate for structural disadvantages, it is debatable whether smallholders will be able to successfully compete and become sustainable palm oil producers (see box 2, p25).

Clearly, individual companies and MSIs have to respond to the challenges, set the priorities and ensure that they take action at the appropriate level. For instance, few of them look specifically at the role and position of smallholders and their linkages with competitiveness

and long-term sustainability. However, the promise of a more collaborative, bottom-up approach to tackle the problems is slowly gaining ground. When set up well and under the right conditions, smallholders and their organizations could play a pivotal role in laying sustainable foundations for the future of the palm oil sector. Solutions will not be the same everywhere and probably have to be found in a combination of voluntary and mandatory approaches.

5

“I used to grow corn, but I never had the results I have with palm. With all my children, I was able to finance part of their education with income from my palm plantation. And now I’m building a large house. That’s what palm production has given to me. Many people can benefit from palm. It’s a win for the gas station, for the driver, for the workers, and for the smallholder.”

Cristobal Choc, smallholder farmer Guatemala

Conclusion

Assessed in economic terms, palm oil is an international success story. Looking at the incredible growth of production and demand in the last two decades, achieving widespread sustainability of palm oil is a significant challenge for companies, governments, growers and processors. Although implementation of all sorts of sustainability initiatives is common, at times it seems that accommodating the demands of the most influential palm oil stakeholders in the planning and investment agenda is paramount. Therefore, the sector's sustainability agenda tends to focus on the large industrial plantations, overlooking the pivotal role smallholders play in the industry.

Globally, palm oil production is giving an ever-growing group of three million smallholders access to what is arguably the most desirable prospect: a steady income and livelihood options. Clearly, smallholders are not a homogenous group. They range from subsistence farmers in Côte d'Ivoire, to scheme growers in Indonesia and medium enterprise owners in Colombia. Nevertheless, in their oil palm farming practices all these small farmers must constantly consider multiple needs of diversifying income, ensuring food security, and protecting cultural values. A number of programmes, regulations and supporting schemes are already in place in the palm oil sector. Still, few of them look integrally at the inclusion of smallholders in the value chain, taking into account different interlinked aspects of inclusive agribusiness, like ownership, voice, risk and reward.

In the face of new opportunities and external sustainability agendas, more attention has to be paid to how companies can better support smallholders. Farmers' organizations themselves have a key role to play in contributing to the debate on the future of smallholder oil palm farming. Such a debate, which engages the voices of the farmer as well as the private sector, needs to be fostered in search of better informed policies and practices. Any type of support that targets local interests, rather than national or global goals, would put smallholders in a much better position to fulfil a more active role.

The combined purchasing power held by FMCGs and retailers gives them significant influence over their suppliers' business practices. However, the industry sustainability agenda does not consider a more fundamental shift in the business model to move away from large-scale monoculture oil palm farming systems to production models addressing landscape conservation and climate resilience. In an increasingly land-constrained world, new production strategies for palm oil will depend on integrated land management, and an almost inevitable increase in production costs.

It may be precisely in the articulation between fair value distribution and minimizing environmental degradation that we find the opportunities to retrieve sustainability at smallholder farm level. The sector needs fair prices for farmers, for their livelihoods and for investments to ensure the long-term viability of their farms and environments. Although palm oil is increasingly lucrative with a retail value of USD 286 billion in 2021, smallholder palm oil producers cannot count on deriving a living income from their crop. The tendency of the industry to cut costs to optimize profits reflects the underlying concern that palm oil buyers (FMCGs and retail) exhibit little willingness to compensate producers for operating sustainably, for example by paying a premium price or investing in long-term trading relationships. While some companies are demonstrating that they are taking necessary steps to implement a comprehensive sustainability agenda, the sector needs to substantially improve its actions and investments at the smallholder level. In a scenario of growing demand for palm oil and structural sustainability risks that lie in supply chains, only half of the palm oil producing companies are currently working with their suppliers to manage these risks. Overall, the actual activities tend to focus on technical assistance and training and seem only able to reach a relatively small minority of farmers. Without significant interventions that compensate for structural disadvantages in relation to risk and reward, it is questionable whether smallholders will be able to successfully compete and prosper.

Furthermore, after 20 years, RSPO certified palm oil still only covers 20 percent of the global palm oil sector, of which independent smallholders make up a negligible one percent. Regardless of the apparent deficiencies and limitations of certification standards, the uptake of certified products remains limited. To make sustainable palm oil the norm and not the exception at the demand side, we need to demystify palm oil. Opening up communication to the public about the challenges and why they should buy/ask for certified palm oil is essential. And while most major consumer goods companies (in the EU) have made strong commitments to shift their palm oil sourcing for the better, there is a need for other important markets, such as the US, China and India, to make similar pledges.

However, maintaining that voluntary regulations are sufficiently effective to improve the sector's social and environmental performance is debatable. Millions of people live, and will continue to live, in remote rural areas characterized by fragile environments like forests and peatlands. Smallholders are unlikely to have the capacity to meet demand for sustainable and deforestation-free palm oil production without consistent support and incentives from procuring companies and governments. As the size of the palm oil economy increases relative to its agricultural resource base, it becomes even more urgent to ensure the sustainable management of ecosystems, biodiversity and forests in producing countries.

To minimize risk and take advantage of opportunities, the key point is to acknowledge smallholder farmers' interests and agenda-setting as the point of departure, rather than implementing preconceived ideas. It is not that farmers' representation is thought to be a bad idea by any of the MSIs active in palm oil, quite the opposite. All of them are aware of the importance of farmer inclusivity. The reason for farmer exclusion is probably far more fundamental. Companies and NGOs have other business or sustainability interests higher on their agenda than listening to the opinions of smallholders. The urgency cannot be underestimated and our observations on the role and position of smallholders must inform a rethink in voluntary and mandatory sustainability policies and practices.

5.1 RECOMMENDATIONS

Most people say they want to drive smallholder inclusivity forward. However, so far it hasn't been successful. It's time to take a step back and re-evaluate: how can the palm oil value chain be made more inclusive? We do not have the silver bullet; different approaches will have to co-exist and strengthen each other. Regulation from importing countries alone cannot fix the situation on the ground. Even the most robust certification scheme is obviously not the answer. By themselves, grievance mechanisms do not prevent harm to farmers, communities, workers and the environment. Pre-competitive initiatives can be valuable in setting a minimum sustainability standard, but might be less useful in raising prices. Smallholders do not benefit from an all-or-nothing debate between western NGOs. Smallholder inclusivity requires a smart use of the available approaches. We should stay away from a discourse where a solution is written off because it does not, in itself, fix all issues. For a comprehensive smallholder inclusive approach to drive sustainability in the sector we recommend the following:

INDUSTRY (PROCESSORS, TRADERS, FMCG, RETAIL)

- Invest in the creation of sustainable palm oil value chains by investing in inclusive palm oil production. Do not divest from the palm oil sector if you want to create positive impact in global agricultural sectors.
- Pay a fair price: commit to fair value distribution across the supply chain especially in the primary line of production where smallholders are the supplying base.
- Buy from oil-palm smallholders proportionate to the share of smallholders in national production.
- Do not exclude smallholders when implementing NDPE policies or certification standards.
- Define common metrics for reporting on smallholder inclusivity.
- Support continuous strengthening of national sustainability frameworks.

MULTI-STAKEHOLDER INITIATIVES

- Make smallholders members or representatives of boards and important organs.
- Facilitate smallholder organizations and related social NGOs to participate in defining, challenging and steering the sustainability agenda.

SEE NEXT PAGE

PUBLIC POLICY MAKERS

- Ensure enabling policy environments where smallholder farmers can thrive.
- Include smallholders in decision-making processes.
- Work with different stakeholders including CSOs for accelerating the implementation of mandatory frameworks and national sustainability standards.
- Ensure that measures to avoid imported deforestation, do not unintendedly exclude smallholders.
- Ensure support is available to organize compliance with the reporting on legality, deforestation, geolocation and traceability.
- Initiate multilateral dialogues between palm oil consuming and producing countries to discuss sustainable transformation of the edible oils sector.

FOR SCIENCE AND INNOVATORS

- Form an international panel to provide science based knowledge on sustainable palm oil production.
- Promote and support the application of technical knowledge of regenerative agriculture at the level of oil palm production systems of small producers.
- Generate diversification systems for palm oil smallholders based on their cultural, economic and environmental situation. Make proposal of diversification model for instance, agroforestry system or intercropping systems.

FOR BANKS AND FINANCIAL INSTITUTIONS

- Make smallholder inclusion part of your sustainability criteria.
- Make sure all investments combine NDPE policies with smallholder support to meet requirements.
- Ensure financial instruments work for smallholders.

FOR ALL STAKEHOLDERS

- Acknowledge that there is a shared responsibility in the value chain by developing clear and ambitious targets and having public monitoring and transparent accountability in place.

FUENTES DE FIGURAS

Figura 1.
Worldbank (2022). Mercado de insumos primarios: 'Pink sheet' datos julio 2022. https://www.worldbank.org/en/research/commodity-markets

Figura 2.
USDA FAS (2022). Explorador de aceite de palma: Aceite de Palma 2021. https://ipad.fas.usda.gov/cropexplorer/cropview/commodityView.aspx?cropid=4243000

Figura 3.
IDH y EPOA (2021). Situación actual: el papel de Europa en el impulso del aceite de palma sostenible - Informe sobre el aceite de palma 2020. https://www.idhsustainabletrade.com/publication/report-state-of-play-role-of-europe-in-driving-sustainable-palm-oil/

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Figura 4.
La información de esta infografía es un resumen del número de pequeños productores de palma de aceite a los que se hace referencia en párrafos 3.2.1, 3.2.2 y 3.2.3.

Figura 5.
Rijk, G., Wiggs, C. y Piotrowski, M. (2021). FMCGs, Venta al por menor obtiene el 66 % de las ganancias brutas en la cadena de valor del aceite de palma. Investigación de reacción en cadena. https://chainreactionresearch.com/wp-content/uploads/2021/06/FMCGs-Retail-Earn-66-of-Gross-Profits-in-Palm-Oil-Value-Chain.pdf

Figura 6.
La selección de una empresa para ser evaluada en SPOTT se ha basado en varios criterios, que incluyen: capitalización de mercado y tamaño de los ingresos derivados del aceite de palma; tamaño de la propiedad de la tierra dedicada a la producción de aceite de palma; la atención mediática de la empresa; y el estado de la biodiversidad y la amenaza que representa la producción de productos básicos en el país de operación.
Véase la categoría de indicador "pequeños productores y proveedores" https://www.spott.org/palm-oil-assessment-summary/

Figura 7.
Iniciativa del Marco de Rendición de Cuentas (AFI): http://accountability-framework.org
Coalición de Acción Forestal Positiva del Foro de Bienes de Consumo (CGFFPC): https://www.theconsumergoodsforum.com/environmental-sustainability/forest-positive/
Grupo de Colaboración de Aceite de Palma (POCG): https://palmoilcollaborationgroup.net
Grupo de Minoristas de Aceite de Palma (RPOG): https://www.rpog.org
Mesa Redonda sobre Aceite de Palma Sostenible (RSPO): https://rspo.org

LISTA DE ACRÓNIMOS

AFI	Iniciativa del Marco de Rendición de Cuentas
APSCO	Programa de Aceite de Palma Sostenible de Colombia
CGFFPC	Coalición de Acción Forestal Positiva del Foro de Bienes de Consumo
CPO	Aceite crudo de palma
CSPO	Aceite de Palma Sostenible Certificado
CE	Comisión Europea
ESG	Criterios Ambientales, Sociales y de Gobernanza
RFF	Racimos de Fruta Fresca
FMCG	Empresas de Fabricación de Alimentos y Bienes de Consumo
IPOS	Marco de Sostenibilidad de Aceite de Palma de la India
ISPO	Aceite de Palma Sostenible de Indonesia
IMPI	Iniciativa de Múltiples Partes Interesadas
MSPO	Aceite de Palma Sostenible de Malasia
NDPE	No Deforestación, No Turba, No Explotación Comercial
ONG	Organización No Gubernamental
PKO	Aceite de Palmiste
POCG	Grupo de Colaboración del Aceite de Palma
RPOG	Grupo de Minoristas de Aceite de Palma
RSPO	Mesa Redonda sobre Aceite de Palma Sostenible
SPOTT	Caja de Herramientas de Transparencia de Aceite de Palma Sostenible
VSS	Estándares de Sostenibilidad Voluntarios
TEA	Tasa de Extracción de Aceite
OSC	Organización de Sociedad Civil

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ENDNOTES

1 Quote taken from the oil palm farmer organization questionnaire by Solidaridad, 2022.

2 In light of the steep price hikes in the first half of 2022 this sentiment might have changed.

3 There is a lack of accurate data on the exact production capacity of smallholder oil palm farmers. Better data are direly needed since different studies estimate their contribution to range between 25 and 40 percent of the global volume. Given the general assumption in the sector that smallholder production is slightly lower than plantation production, it is unlikely that smallholders produce up to 40 percent of global crude palm oil on only 27 percent of cultivated oil palm land (Descals et al., 2021). In this report it is estimated smallholder oil palm farmers produce between 25 and 30 percent of all crude palm oil.

4 The study of Descals et al., (2021) identified only closed-canopy oil palm stands, due to the omission of young and sparse oil palm the area estimate is lower than the harvested area reported by the Food and Agriculture Organization (FAO), particularly in West Africa. The article and high-resolution map of smallholder and industrial closed-canopy oil palm plantations can be found here: https://essd.copernicus.org/articles/13/1211/2021/

5 When the price of biodiesel is higher than the diesel fuel price, the Indonesian government is required to introduce subsidies in support of the blending targets. The subsidy is financed by tariffs on palm oil exports. Malaysia aims to implement a biodiesel mandate by the end of 2022.

6 In a 3% growth scenario (based on USDA FAS 2022 projections), with a baseline of 73.5 million MT in 2021, production has to rise with 28 percent in the next 9 years to 94 million MT.0

7 Greenpeace (2018 November 23). Timeline Greenpeace palm oil campaign 2007 - 2018. https://www.greenpeace.org/nl/natuur/11405/timeline-greenpeace-palm-oil-campaign-2007-2018/
Global Witness (2021 October 07, updated 2022 June 14). The true price of palm oil. https://www.globalwitness.org/en/campaigns/forests/true-price-palm-oil/

8 See endnote 3.

9 For a more detailed typology of the diversity of palm oil smallholder farmers in Indonesia see: Jelsma, I., Schoneveld, G., Zoomers, A. and van Westen, A. (2017). Unpacking Indonesia's independent oil palm smallholders: An actor-disaggregated approach to identifying environmental and social performance challenges. Land Use Policy, 69, 281–297. https://doi.org/10.1016/j.landusepol.2017.08.012

10 A forthcoming AidEnvironment study (2022), found that controlled pricing systems like in Malaysia also exist in Uganda, while in Ghana and Nigeria prices are based mainly upon a free market system. The research also shows that in Latin America, countries like Guatemala, Mexico, Honduras and Colombia all have a system where FFB prices are determined monthly or weekly with FFB prices defined as a % of the average global reference (Rotterdam or Malaysia) of the month (or week) before. This % differs significantly per country (e.g. Honduras 15% or 16% depending on the season, Nicaragua 12%, Mexico 12,5%, Honduras 14%) (Solidaridad Central America, 2022).

11 Llewellyn, A. (Al Jazeera 2022, May 16). Indonesian farmers decry palm oil export ban as prices plummet. https://www.aljazeera.com/economy/2022/5/16/indonesian-farmers-decry-palm-oil-export-ban-as-prices-plummet

12 In 2019, the average price per MT palm oil was USD 601, leading to an average revenue for a smallholder of approximately USD 6,010 over 2019. In 2021, the prices were very high: USD 1,131 per MT, which amounts to USD 11,310 annual revenues.

13 Malaysia case: Production, costs and revenues calculations by Solidaridad Asia. Living wage September 2019: https://wageindicator.org/salary/living-wage/archive-no-index/malaysia-living-wage-series-september-2019

14 Mexico case: production, costs and revenues calculations by Solidaridad Central America. Living wage: https://align-tool.com/download-data. Michoacán, northwestern regions of Mexico. 2018.

15 Indonesia West Sulawesi case, according to Solidaridad Indonesia the data are reasonably complete and accurate. Production, cost and revenues from: The Impact of Oil Palm Farming on Household Income and Expenditure in Indonesia, https://koreascience.kr/article/JAKO202109554061437.pub?&lang=en Living wage 2018 indicator: https://wageindicator.org/salary/living-wage/archive-no-index/indonesia-living-wage-series-january-2018-country-overview

16 Information taken from the oil palm farmer organization questionnaire by Solidaridad, 2022.

17 SPOTT Platform: See indicator category 'smallholders and suppliers' https://www.spott.org/palm-oil-assessment-summary/

18 Global Forest Watch (2022 January 25). Universal Mill List. https://data.globalforestwatch.org/documents/gfw::universal-mill-list/explore

19 The RSPO has two different certification systems: https://rspo.org/certification/supply-chains

20 Calculation based on RSPO Palmtrace portal and input from RSPO staff. 64,000 metric tonnes of ISH credits is less than 0,1 percent of the 76.5 million metric tonnes of global palm oil production (USDA FAS, 2021).

21 Information taken from the oil palm farmer organization questionnaire by Solidaridad, 2022.

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