

# Global Market Report: Palm Oil

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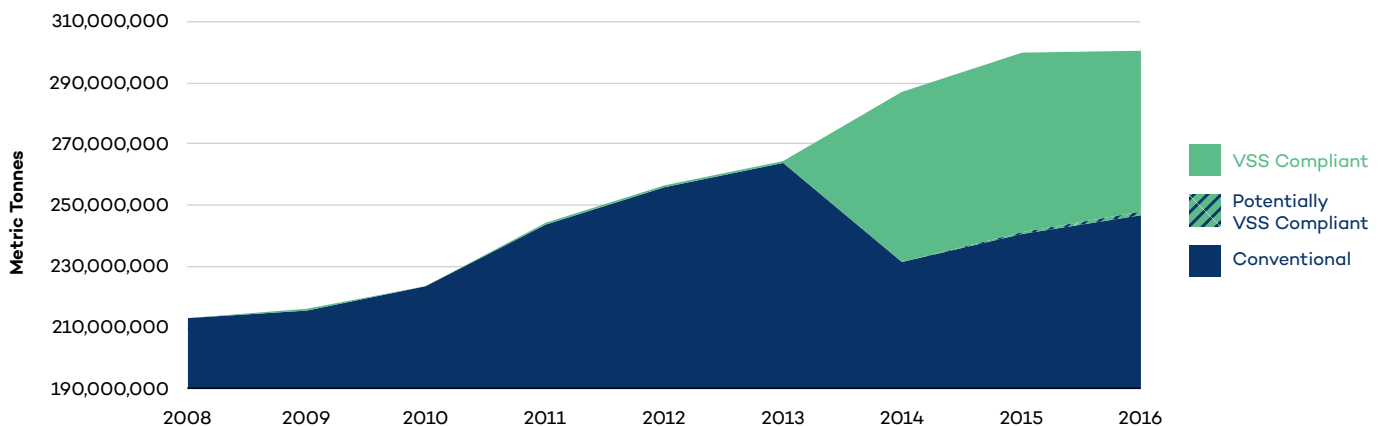
**Palm oil's superior yields, affordability, and versatility drive demand, led by Asian economies.**

Palm oil is the most consumed edible oil in the world, having surpassed all others in 2015.<sup>1</sup> Palm oil and palm kernel oil are extracted from the oil palm's fruit flesh and seed, respectively, providing ingredients for numerous edible and personal care products as well as feedstock for biofuels.<sup>2,3</sup> Breaking consumption down by industry sector, the processed food industry consumes approximately 72% of all palm oil production, the personal care and cleaning products industry consumes 18%, and the biofuel industry

consumes the balance at 10%.<sup>4</sup> Palm oil is generally destined for export: an estimated 75% of overall palm oil production was exported in 2016, which amounted to 48.9 million tonnes.<sup>5–8</sup> The export value of palm oil and palm kernel oil (crude and refined) was worth USD 28.2 billion and USD 3.7 billion, respectively, that same year.<sup>8</sup> The (retail) market value of the sector in 2016 was at least USD 65 billion, and it has made a significant contribution to the world economy: USD 39 billion to the global gross domestic product (GDP) and USD 4.3 billion in tax revenues. The sector was also the source of 2.9 million downstream jobs in 2013/2014, with people employed in industries that use palm oil derivatives to produce food ingredients (i.e.,

VSS-compliant oil palm fruit accounted for at least 17% of total oil palm fruit production in 2016.

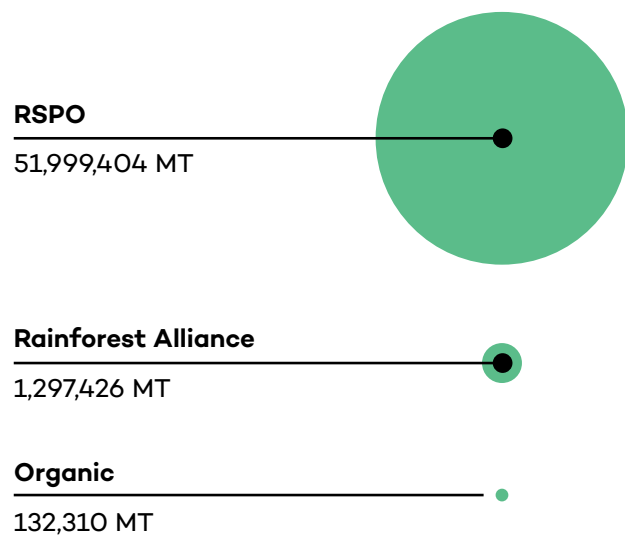
**Figure 1. Global oil palm fruit production trend 2008–2016<sup>15,41</sup>**



Note: VSSs certify both volumes of oil palm fruit harvested at the plantation and crude palm oil processed at the mill. This graph illustrates the growth of oil palm fruit production in the period 2008–2016. VSS-compliant production volumes refer to oil palm fruit produced in compliance with one or more VSSs. Conventional production volumes are those non-compliant with or which are not recognized by an existing VSS. Production volumes that are defined as potentially VSS-compliant cannot be definitively listed in either category with the data currently available. In the period examined, potentially VSS-compliant oil palm is minimal in comparison to total volumes illustrated in the graph based on data collected from the Roundtable on Sustainable Palm Oil (RSPO), Rainforest Alliance, and Organic.

## How much oil palm is certified by each standard?

**Figure 2. Standard-compliant sustainable oil palm production volumes in 2016<sup>15</sup>**



pastries, margarine), animal feed, and personal care products (i.e., cosmetics).<sup>9,10</sup>

The production of palm oil is dominated by Indonesia and Malaysia, which together accounted for 85–90% of total palm oil produced in 2016.<sup>2</sup> Approximately 60% of global palm oil was derived from privately or state-owned oil palm plantations that year, while the remaining 40% was produced by 3 million smallholders who chronically obtain lower yields.<sup>11</sup> Indonesian smallholders are expected to double their production and manage 60% of the country's oil palm plantation area by 2030.<sup>12</sup>

The largest exporting countries of crude palm oil and its fractions (whether or not refined) in 2017 were Indonesia (USD 18.7 billion), Malaysia (USD 9.8 billion), and the Netherlands (re-export) (USD 1.2 billion), while the largest importing countries that year were India (USD 6.5 billion), China (USD 3 billion), and Pakistan (USD 2.2 billion).<sup>6,13,14</sup> Overall, palm oil supply outpaced demand in recent years, with palm oil-producing countries ending up with stocks that increased from over 8 million to 11 million tonnes from 2015 to 2018. From 2018 onward, demand started outpacing supply, with stocks estimated to decrease to close to 8 million tonnes by 2020.<sup>7</sup>

The palm oil sector is projected to grow in the coming years, driven by increasing demand for affordable edible oils and fats.<sup>16</sup> This global demand, for its part, is driven

by the crop's superior yields, which are 5 to 10 times that of other vegetable oil crops, coupled with its long shelf-life, desirable health properties, and versatility.<sup>16–18</sup> The move to ban trans fats has been especially beneficial for demand, prompting the food industry to turn to palm oil as the trans fat-free replacement ingredient of choice.<sup>17,18</sup> However, recent studies contest the potential health benefits of palm oil, as it has higher saturated fats compared to other vegetable oils.<sup>19–22</sup> Breaking down demand by world regions, Asia is by far the largest and fastest-growing consumer of palm oil, responsible for two thirds of global consumption with India, China, and Indonesia accounting for 40% of all palm oil destined for the food industry in 2016.<sup>19,23</sup> This boost in palm oil consumption in India and China has been correlated with growing affluence and shifting consumer preferences in favour of processed foods.<sup>24</sup>

Demand in the European Union (EU) and the United States accounts for approximately 14% of palm oil consumption. Demand is considerably greater in the EU.<sup>25,26</sup> This region registered close to 8 million tonnes of palm oil consumed in 2018 versus over 1.5 million tonnes in the United States, where domestically grown corn and soybean oil have greater market uptake.<sup>25,26</sup> Efforts to promote biofuels in the EU have resulted in steady demand growth for palm oil in the period since 2008, with 50% of all imports destined for biodiesel production.<sup>25,27</sup> However, policy and subsidy support for palm oil as a feedstock for biodiesel production will likely scale back dramatically by 2030 as governments attempt to lower the negative ecological and social impacts of oil palm cultivation, with potential effects on palm oil demand.<sup>28,29</sup>

The increased adoption of voluntary sustainability standards (VSSs) by oil palm producers is another notable development in the market. In 2016, 17.4% of all oil palm fruit production was VSS-compliant, when a decade ago, it was nonexistent. In 2016, 0.4% of oil palm fruit was potentially VSS-compliant. By comparison, conventional oil palm fruit production accounted for 82.2% of the market.<sup>15</sup>

## Palm oil is associated with major social and environmental issues in growing countries.

The market advisory firm Research and Markets predicts that the global market value of the palm oil sector will experience a 5.7% compound annual growth rate (CAGR) from 2019 to 2024, reaching a total

production of 107.6 million tonnes by 2024.<sup>30</sup> However, the overall sector faces important economic, social, and environmental challenges that cannot be overlooked. From an economic perspective, changes in trade policies by the large palm oil importers, such as an increase in applied tariffs or the imposition of countervailing duties to address allegedly unfair trade practices involving biodiesel, can have significant impacts on the sector. For example, India is the largest importer of palm oil, but efforts to promote local production and processing of oilseeds by adopting tariffs or other import-related policies could affect domestic palm oil demands and increase domestic oilseed prices.<sup>31</sup> The European Commission confirmed in August 2019, for its part, the imposition of countervailing duties on imported biodiesel from Indonesia, which is produced primarily from palm oil, to protect its domestic production.<sup>65</sup> To respond to European efforts to move away from importing biodiesel, Indonesia might have to increase its biodiesel exports to other trading partners, such as China and Russia.<sup>66</sup>

From a social perspective, the increasing efforts by India and Indonesia to boost domestic consumption of palm oil and ensure a secure supply of biofuels could have a negative impact on food security. In Asian countries, as in other developing regions, palm oil plays a critical role in diets as a nutritious and affordable food staple that is widely used for cooking daily meals.<sup>32</sup> If palm oil is diverted from the food industry to produce biofuels, this may influence its price and availability for domestic food consumption, which is especially concerning for the Asian region.<sup>21</sup> Oil palm plantations are associated with cases of land-grabbing in Africa, where large palm oil-producing companies have convinced farmers to lease their land and transition to out-grower schemes, which reduces their land access and control.<sup>33,34</sup> As a result of these lease agreements, smallholder farmers and communities have lost access to farmland, preventing them from growing staple commodities and other cash crops that are essential to ensuring a nutritious diet and helping them diversify their income sources.<sup>35</sup> Furthermore, several studies report cases of human rights abuses against palm oil workers in large plantations, who are forced to work long hours and are exposed to hazardous chemical ingredients.<sup>36,37</sup>

From an environmental perspective, there are crucial concerns associated with palm oil production. Oil palm plantations grow in humid tropical conditions, which can be found 8–10 degrees north and south of the

## LIVELIHOODS

Palm oil production is concentrated in Indonesia and Malaysia.

3 million smallholder farmers

2.9 million downstream jobs

equator. This band of suitable growing areas for oil palm may be disrupted by climate change, as oil palm yields are sensitive to weather fluctuations such as droughts and flooding. Another issue concerning palm oil involves the negative environmental impacts of its cultivation. According to many advocacy groups, the sector has become synonymous with deforestation and biodiversity loss, as large tracts of tropical forests and peatlands have been converted for oil palm production, affecting close to 200 threatened species, including the orangutan, the Sumatran tiger, and the pygmy elephant.<sup>38,39</sup> As of 2018, oil palm plantations take up close to 18 million hectares of land.<sup>41</sup> Palm oil-driven deforestation has been most prominent in Southeast Asia and Central and Western Africa. For instance, over 50% of all deforestation on the island of Borneo, Indonesia, between 2005 and 2015 was associated with palm oil production.<sup>39–41</sup> These negative impacts have spurred the launch of the International Palm Oil Free Certification Accreditation Programme in Australia in 2017, which is now approved to certify in 15 countries and is awaiting clearance from five more.<sup>42</sup> To date, over 1,000 products have been certified to be palm oil free.

## MARKET VALUE

Over USD 7 billion for VSS-compliant oil palm based on 2016 oil palm producer prices

## CAGR 2008–2016

Conventional production is up by 1.86% while VSS production is up by 110%.

VSS production in LHDCs started in 2009.

## OIL PALM OIL PRODUCTION IN LHDCs

5% of total oil palm produced

6% of VSS-compliant oil palm produced based on 2016 data

In addition, the expansion of oil palm plantations has been an important source of greenhouse gas emissions via the loss of tropical forests and peatlands, which store significant amounts of carbon.<sup>40</sup> The use of synthetic fertilizers and pesticides for oil palm cultivation can also affect surrounding natural habitats.<sup>40</sup> There is a pressing need to address these challenges for the continuity of the sector and to mitigate its potential for adverse effects. This is particularly important, given that turning to alternative sources of vegetable oils (i.e., soybean, sunflower, and rapeseed oil) could result in even more extensive food insecurity and harmful environmental impacts, given that they require even more land to yield the same amount of oil.<sup>38,40</sup> Different actors and initiatives, including VSSs, are working to address some of these major issues concerning palm oil to improve its sustainability performance.

### Sustainability challenges such as deforestation and biodiversity loss could be addressed through VSSs.

VSSs<sup>A</sup> started capturing a significant share of palm oil production in 2014, providing consumers with purchasing options that would address their concerns over the sustainability challenges the sector faces, such as deforestation, biodiversity loss, working conditions and rights, land grabbing, and smallholder exclusion. VSSs operating in the sector use their principles and certification criteria to demand that palm oil operations protect peatlands, high conservation value forests, and high carbon stock forests, as well as rare, threatened, or endangered species. These operations must also avoid the use of fire for land clearing. On the social level, these operations must involve improved worker conditions, avoid the use of forced labour, provide proof of customary rights and the absence of conflict over these rights, and include plantation workers in decision making.<sup>43,71</sup> In addition to working with large plantations, VSSs are also working to engage with smallholder oil palm producers by developing accessible production standards and support systems to assist them with becoming VSS-compliant. For instance, the RSPO Independent Smallholder Standard adopted in November 2019 involves the provision of smallholder credits, as well as the establishment of a smallholder

support fund, both of which aim to improve the livelihoods of smallholders by making it easier to access international markets.

VSSs have had significant success on the supply side, particularly in recent years: VSS-compliant oil palm experienced a CAGR of approximately 110% from 2008 to 2016, accounting for at least 17% of oil palm production overall. The RSPO, Rainforest Alliance, and Organic are the main VSSs in the oil palm sector when ranked by oil palm fruit production size. In 2016, at least 52 million tonnes was VSS-compliant, with oil palm valued at USD 7 billion. This value is derived from the average producer prices per country, as reported by the Food and Agriculture Organization of the United Nations, which is then applied to the volume of VSS-compliant oil palm produced per country.<sup>15,44</sup> The majority of VSS-compliant production, at approximately 90%, comes from Asia (Indonesia, Malaysia, and Papua New Guinea) with some important volumes coming from Latin America (Brazil, Costa Rica, and Guatemala,).<sup>15,45</sup> Although not factored into Figures 1, 2, and 4, the International Sustainability and Carbon Certification (ISCC) is another important VSS operating in the palm oil sector. The ISCC began in 2010. It certified over 350 palm oil processing plants in 2017 and 22 million tonnes of palm fresh fruit bunches in 2016, some of which may have also been RSPO certified.<sup>46</sup>

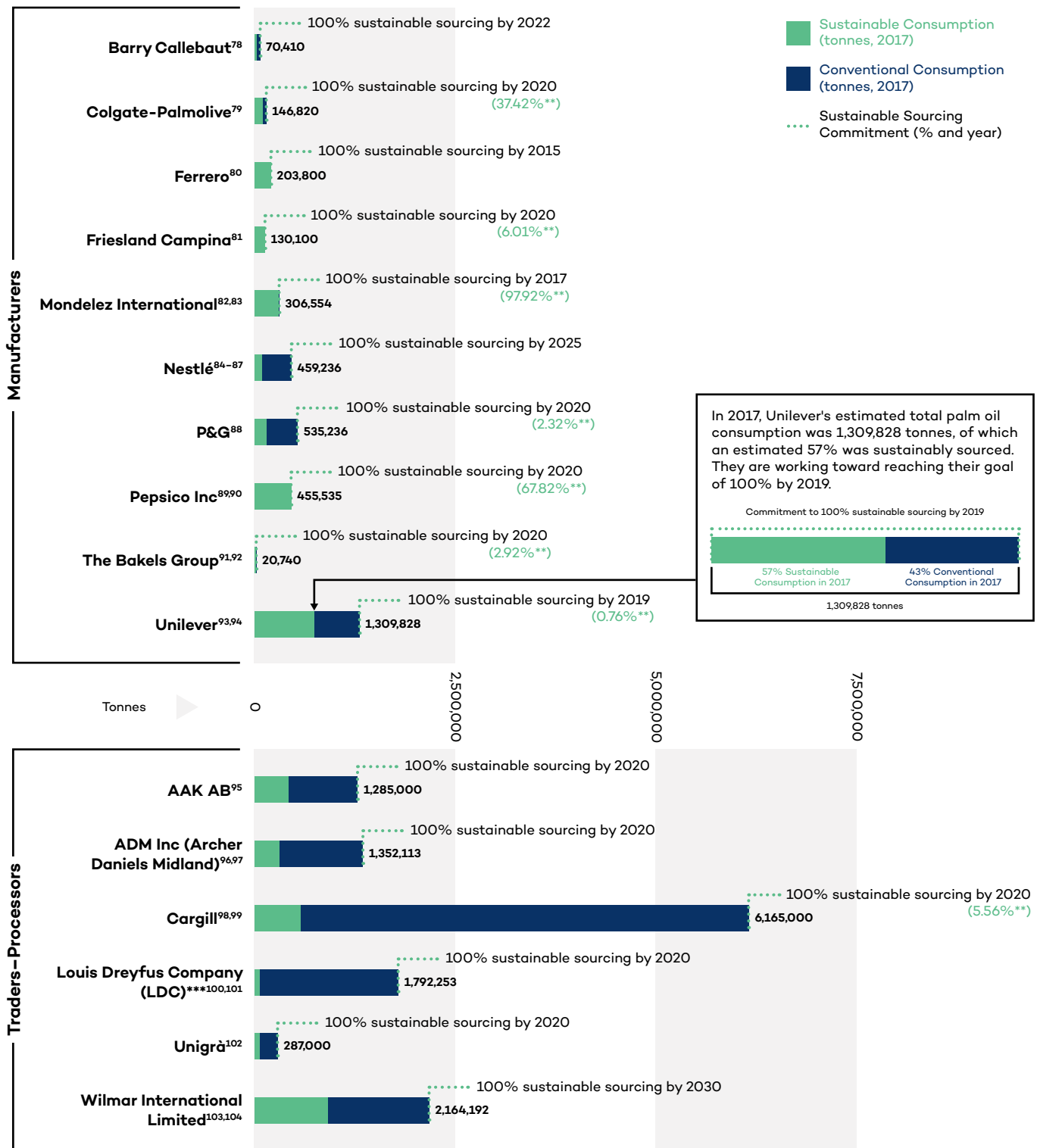
On the demand side, 10 main manufacturing companies of food and consumer goods purchased 3.6 million tonnes of palm oil in 2017. From this total, 2.205 million tonnes was VSS-compliant (RSPO) palm oil. Based on the sourcing commitments, an additional 0.5 million tonnes of sustainable palm oil (RSPO) could be sourced by 2022. The leading buyers' sourcing commitments are driven mainly by their interest in lowering reputational risks with end consumers, given the linkages between palm oil cultivation and global deforestation and biodiversity loss.

Demand for VSS-compliant palm oil continues to grow, though it remains lower than supply, as only about half of RSPO-certified palm oil produced in 2018 was sold as RSPO-certified.<sup>47</sup> Demand for VSS-compliant palm oil is currently concentrated in Europe and the United States, where different supply chain actors have

<sup>A</sup> The United Nations Forum on Sustainability Standards defines VSSs as “standards specifying requirements that producers, traders, manufacturers, retailers or service providers may be asked to meet, relating to a wide range of sustainability metrics, including respect for basic human rights, worker health and safety, the environmental impacts of production, community relations, land use planning and others.”<sup>105</sup> To review the purpose of various VSSs and the set of requirements producers need to comply with under each scheme, please access SSI Reviews at [www.iisd.org/ssi/](http://www.iisd.org/ssi/)

Progress toward sourcing more sustainable palm oil.<sup>78-104</sup>

Figure 3. Major palm oil-consuming companies, their sustainable sourcing commitments, and progress as per RSPO ACOP 2017.\*



\*Aggregated volumes include crude and refined palm oil, palm kernel oil, and derivatives and fractions.

\*\* Share of sustainable consumption certified under book and claim system. Book and claim is a non-physical traceability system that allows the sale and purchase of certificates of volumes of palm oil certified under a VSS. However, the certificates are decoupled from the product and are transferable to the market to drive demand of VSS-compliant palm oil.

\*\*\* Sourcing volumes refer to LDC-Asia PTE; sustainable sourcing commitments refer to LDC Global.

Please note that this table focuses on RSPO sourcing volumes only, based on the availability of data. There are buyers that may source from other schemes or might have their own corporate scheme that operates in palm oil (i.e., Nestlé).

established targets that involve sourcing 100% VSS-compliant palm oil (European Palm Oil Alliance and North America Sustainable Palm Oil Network).<sup>46,47</sup> These commitments are driven by several factors, including supply chain risk management, such as reputational risk associated with sourcing palm oil and managing supply disruptions. Another motivating factor is enhancing transparency in a multi-tier supply chain with regards to sourcing origin and growing oil palm conditions, for instance, that might influence consumer's buyer behaviour. Developing demand for VSS-compliant palm oil in Asia, including in the largest palm oil-consuming countries, India and China, remains a challenge as it is a distinct market with highly fragmented distribution, and it is the most affordable vegetable oil used for everyday cooking.

Palm oil consumers in these countries are less aware of the environmental impacts associated with this commodity and may thus be reticent to pay a premium for VSS-compliant palm oil.<sup>48</sup> This is particularly critical, considering that an important volume of palm oil is sold as cooking oil in Asia, an end-product rather than a food ingredient, and may be sold unbranded. This adds another challenge to boosting domestic demand of VSS-compliant palm oil, given that such demand normally relies on consumer awareness of sustainability issues concerning the sector and the use of product labels as a way to distinguish these goods from conventionally produced alternatives.

Despite these challenges, both India and China have committed to raising VSS-compliant palm oil sourcing to 30% and 10% of their total palm oil consumption, respectively, by 2020;<sup>47,72,73</sup> as of June 30, 2018, both countries had sourced only slightly over 1%.<sup>47</sup> Recognizing the need to balance supply and demand to incentivize sustainable palm oil production, RSPO recently passed sustainability requirements for all membership categories, such as retailers, consumer goods manufacturers, and traders, including the definition of sourcing targets of RSPO-certified palm oil year on year.<sup>49</sup> These will take effect in 2020, and members will be required to disclose their uptake of RSPO-certified palm oil as part of their Annual Communications of Progress (ACOP) reporting.

As global pressures mount to curb deforestation and biodiversity loss associated with palm oil production, the sector will need to respond. While unable to prevent deforestation and related habitat loss completely,

producing VSS-compliant palm oil may contribute to limiting some of the worst effects of palm oil production on the environment. These VSSs emphasize transitioning to more environmentally responsible production methods aimed at protecting high conservation value and high carbon stock forests, as well as rare, threatened, and endangered species.

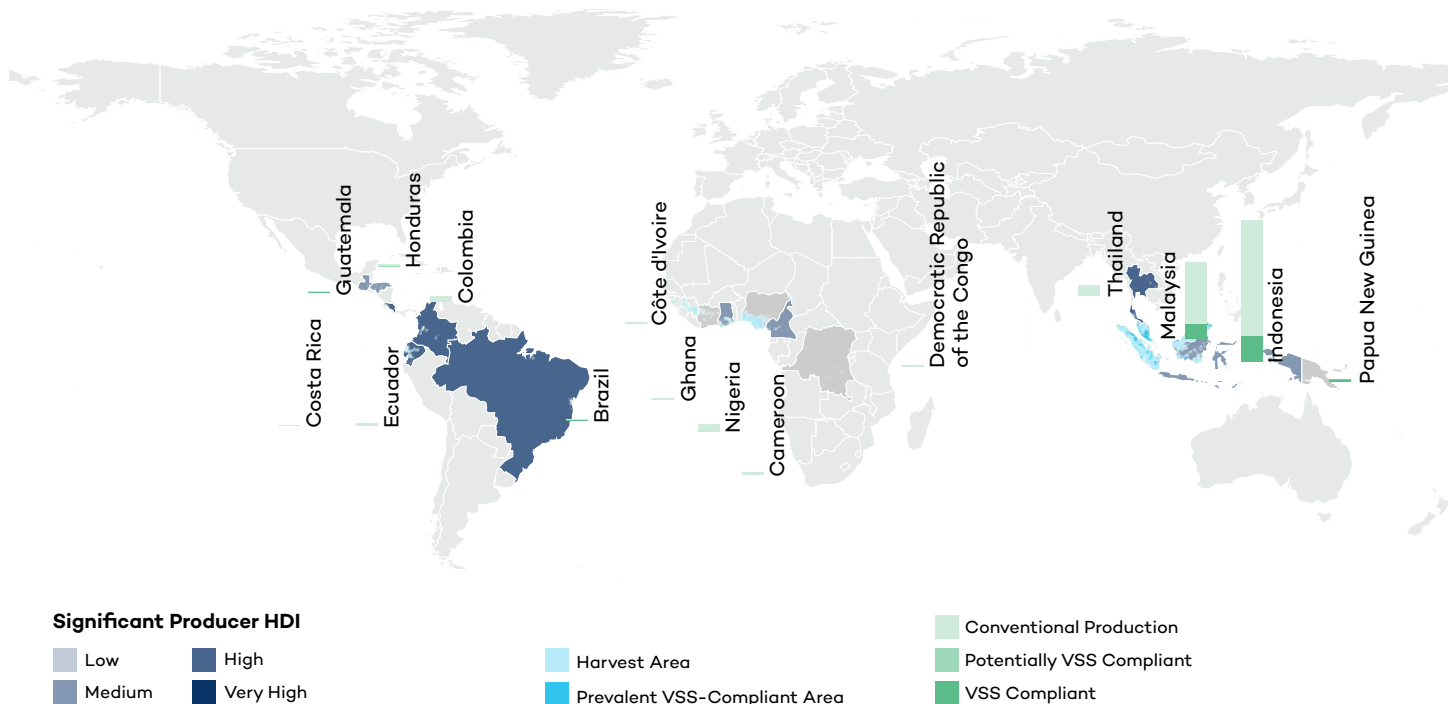
In addition to the number of global VSSs operating in the palm oil sector, such as RSPO, Rainforest Alliance, Organic, and ISCC, Malaysia and Indonesia also established national certification systems, namely the Indonesian Sustainable Palm Oil standard (ISPO) and the Malaysian Sustainable Palm Oil (MSPO) certification schemes in 2011 and 2015, respectively. Both have been set up to advance the production of more sustainable palm oil and include criteria concerning plantation and natural resource management, biodiversity conservation, and reduction of greenhouse gas emissions.<sup>43</sup>

Despite the growth of VSSs operating in the sector and their increased adoption, there are still concerns over whether their criteria are sufficient to ensure full protection of forests and peatlands. These criteria are reported to be more robust in ISCC and RSPO.<sup>43,51,71,75</sup> With regard to biodiversity conservation, a recent study illustrates the need for strengthening VSS safeguards in this area, especially in the cases of ISPO and MSPO.<sup>50</sup>

In addition, evidence suggests that VSSs operating in the palm oil sector need to improve their capacity to enforce compliance with their criteria, both in the case of large palm oil plantations and smallholders. For instance, studies report cases where RSPO has been ineffective in preventing land grabbing, while evidence suggests that ISPO-certified companies have cleared forests outside their concession areas.<sup>51</sup> VSSs are increasingly adopting a continuous improvement approach, which may contribute to addressing these limitations and strengthening their criteria coverage and environmental safeguards. Furthermore, all actors involved with certified palm oil operations must ensure full compliance with practices embedded in the standard and implement corrective mechanisms with operators that fail to comply with their requirements. Technological innovations can be used to ensure compliance in a more effective way, for instance, satellite-based sensor technology is currently being used to monitor illegal logging in palm oil operations. Regular access to this type of information can support VSS-setting

## Oil palm-growing regions of the world

Figure 4. Distribution of oil palm production in the top 15 producing countries in 2016<sup>15,41,68,69</sup>



Download high resolution version of the map at <https://www.iisd.org/sites/default/files/publications/ssi-global-market-map-palm-oil.pdf>

bodies, governments, and palm oil buyers to intervene in palm oil operations to ensure full compliance with sustainable practices embedded in the standard.<sup>77</sup>

**Current market trends and prospects could drive the expansion of VSS-compliant palm oil production in developing economies, but lowering sustainable palm oil costs and increasing public awareness in producing countries are key.**

There are several factors that might drive the expansion of VSS-compliant palm oil. On the demand side, rising global population may result in increasing demand for vegetable oil. To fulfill this growing demand, palm oil may be the option that causes less of a negative impact on the environment when produced sustainably. “Palm oil requires one-tenth of the land, one-seventh of the fertiliser, one-fourteenth of the pesticides and one-sixth of the energy to produce the same quantity of vegetable oil” compared to soya, which is the second most

consumed vegetable oil.<sup>38</sup> Palm oil accounted for 39% of global vegetable oil, yet it was grown on just 7% of land dedicated to oil vegetable crops in 2014.<sup>16</sup>

Still, oil palm expansion will result in additional tropical forest losses, with dire consequences for biodiversity and climate change. Between 1990 and 2015, 150 million hectares of tropical forest was lost, out of which an estimated 5% was directly due to palm oil expansion.<sup>52</sup> Indonesian forest fires in 2015, partly driven by unsustainable oil palm expansion, lowered Southeast Asian air quality, cost USD 16 billion, and resulted in 100,000 premature deaths.<sup>38</sup> Recognizing these challenges more broadly may motivate the continued expansion of VSS-compliant oil palm production and palm oil consumption, given that these standards include commitments to prevent deforestation, an important step for protecting forests and peatlands.<sup>38</sup>

In parallel to the increased demand for vegetable oils, there is also a growing push from consumers (especially

in Europe and the United States) and governments alike to address the socio-environmental impacts of the palm oil sector, which might boost the expansion of VSS-compliant palm oil production. Consumers have become more concerned with the state of the planet and, in many cases, are considering what their purchasing decisions mean for environmental and social conditions. At the international level, these issues have also grown in prominence, particularly following the adoption of agreements such as the United Nations' Paris Agreement on climate change and the ongoing deliberations to develop the Convention on Biological Diversity's post-2020 global framework.<sup>43</sup>

National and regional-level efforts are underway to address palm oil concerns, with policy-makers also looking to international agreements and conventions for guidance. Even so, existing legal frameworks are also being used to challenge efforts by some countries to mitigate palm oil use. The recent move by the EU to curb the palm oil imports in its biofuels by 2030 due to deforestation and climate change concerns is a case in point; while EU policy-makers justify this move as crucial to achieving the bloc's own sustainability objectives, as well as its international environmental commitments, it is worth noting that the policy change prompted Indonesia to file a complaint with the World Trade Organization questioning whether the policy is consistent with global trade rules.<sup>53,67</sup>

This push is not coming only from consumers and policy-makers, but also from the private sector. Concurrently, corporations have made hundreds of forest conservation commitments in recent years, which might drive the increase in VSS-compliant palm oil consumption and oil palm production. According to Forest Trends, a non-governmental organization, over half of the nearly 500 companies sourcing palm oil in 2017 had commitments in place to avoid deforestation.<sup>54</sup> Many of these companies have committed to sourcing RSPO-compliant palm oil. Monitoring and enforcing the adoption of more sustainable deforestation-free production practices in palm oil plantations is critical.<sup>55</sup> If properly implemented, VSSs can contribute to achieving these commitments and avoiding deforestation associated with palm oil production.

On the supply side, countries with suitable oil palm fruit growing conditions, including India and Papua New Guinea, are expanding oil palm plantations in pursuit

of their economic development and could increase their production of VSS-compliant palm oil.<sup>56,57</sup> They seek the economic gains associated with palm oil production despite its environmental ramifications, even though these environmental consequences may also have adverse impacts on these countries' economic development. Malaysia and Indonesia, the largest oil palm producers, are also using palm oil as one of their main vehicles for development, given the crop's superior yields that can, in turn, support poverty reduction efforts and economic growth. Ensuring that oil palm expansion achieves these economic gains while avoiding environmental impacts will be crucial for the industry to improve its image and legacy. The adoption of VSSs in palm oil operations could contribute to achieving this objective, as part of broader development strategies that ensure forest protection and legal compliance.<sup>74</sup>

Beyond these market-related factors, a core consideration in assessing opportunities for expanding VSS compliance in the sector and maximizing its potential to contribute to achieving a country's development objectives is the human development level of oil palm-producing countries, as assessed by the Human Development Index (HDI). Out of 44 countries growing oil palm in 2016/17, 17 ranked as Low Human Development Countries (LHDCs) under the HDI, and, from this group, six were producers of VSS-compliant oil palm. These LHDC countries, which included Côte d'Ivoire, Nigeria, Madagascar, Sierra Leone, Solomon Islands, and Papua New Guinea, accounted for 5% of the total oil palm grown in 2016 and were responsible for 6% of the total VSS-compliant oil palm produced worldwide that same year.

VSS-compliant production among some of these LHDCs started in 2009 and has experienced significant growth since 2014. The expansion of VSSs in the sector has been especially important in Papua New Guinea, which has been producing almost 3 million tonnes per year of VSS-compliant oil palm since 2014. According to 2016 figures, RSPO is by far the VSS with the largest volume of oil palm production coming from LHDCs, followed by Organic.<sup>15</sup>

*The expansion of VSS-compliant oil palm production in LHDCs is especially important for curbing tropical deforestation, as oil palm can only be cultivated along a narrow, biodiversity-rich band close to the equator. If properly implemented, the adoption of VSSs in the sector could result in important environmental and societal*



development benefits, given that these standards require producers to implement more sustainable oil palm cultivation practices. In turn, these efforts can help limit deforestation and biodiversity losses from production, along with improving the working conditions of labourers and smallholder farmers in the sector.

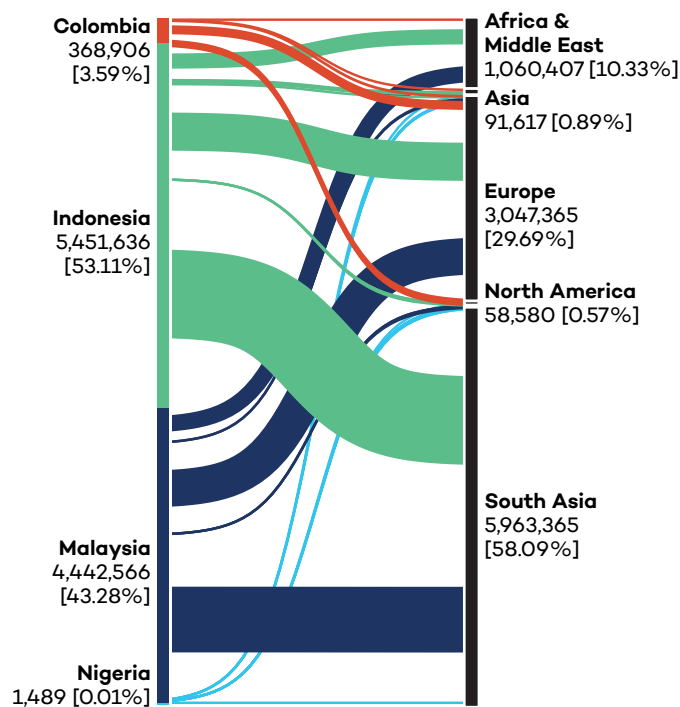
There are promising signs of VSS expansion among countries that are already producing significant shares of the world's oil palm and have begun to adopt VSSs, including some countries that are LHDCs. Of the top oil palm-growing countries, Colombia, Indonesia, Malaysia, Nigeria, and Thailand offer good prospects for increased VSS-compliant oil palm production, considering their total palm oil output and existing presence of VSSs.

In terms of the opportunities for expanding VSS-compliance in oil palm-producing countries and the

potential for maximizing sustainable development outcomes, the countries that show the most potential for growth are Côte d'Ivoire and Nigeria. This was determined by considering their share of total oil palm production, the presence of VSSs, and their HDI value. These two are followed by the Democratic Republic of the Congo, Guinea, and Benin, according to our analysis based on 2016 figures.<sup>15</sup> Positive development outcomes through the expansion of VSSs can also take place in the largest oil palm-producing countries, such as Indonesia, Malaysia, and Thailand. While these are not LHDCs, their smallholder oil palm farmers continue to experience poverty, and pursuing greater VSS compliance might contribute to improving their livelihoods and overall economic growth.<sup>58-61</sup>

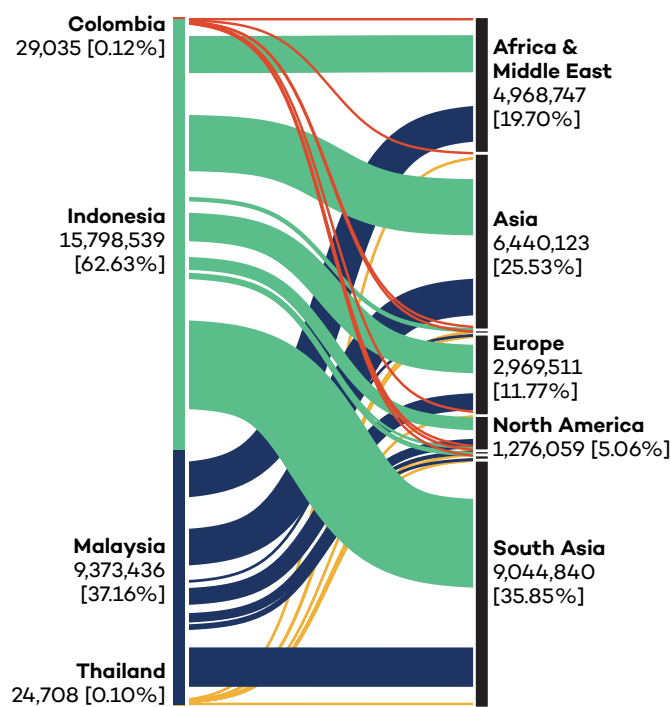
Indonesia and Malaysia dominate the global production and export of palm oil. South-Asia remains the leading importing region of palm oil.<sup>41,70</sup>

**Figure 5. Trade flows of the largest crude palm oil-producing countries in 2016 (in tonnes)**



Note: The four countries listed on the left represent 86% of total palm oil fruit production in 2016. The percentage in brackets represents the proportion of the total volume of crude palm oil exported in 2016 by the four countries. The percentage in brackets for each region on the right represents the proportion of the total volume of crude palm oil imported in 2016 from the four countries.

**Figure 6. Trade flows of palm oil and its fractions, whether or not refined, from the largest palm oil producing countries in 2016 (in tonnes)**



Note: The four countries listed on the left represent 88% of total palm oil fruit production in 2016. The percentage in brackets represents the proportion of the total volume of palm oil and its fractions, other than crude, exported in 2016 by the four countries. The percentage in brackets for each region on the right represents the proportion of the total volume of palm oil and its fractions, other than crude, imported in 2016 from the four countries.

Expanding sustainable palm oil consumption beyond the leading consuming markets will be challenging in the near future. Consumers in the largest palm oil-consuming countries have limited awareness of the environmental concerns associated with palm oil, and thus may not pay more for VSS-compliant vegetable oil. India and China, the largest importing countries, currently consume very little sustainable palm oil, as noted previously.<sup>62</sup> Measures to raise public awareness and to reduce the production costs of VSS-compliant palm oil to adjust consumer price may be required to increase demand. Examples of such measures include communication campaigns and training programs, lowering VSS compliance expenses (i.e., operating costs, audits, and transportation costs), and providing government incentives and support for more sustainable palm oil consumption and production. Such measures could assist with the expansion of VSSs into LHDCs, where oil palm producers may not have the resources to become VSS-compliant. The investment community can also influence the expansion of VSS-compliant palm oil production in LHDCs through several sustainable finance strategies such as environmental, social, and governance investment and impact investment.

A coordinated approach with all actors involved in the sector is needed to expand production of VSS-compliant palm oil, including in LHDCs. The jurisdictional approach to certification that RSPO is currently developing in Ecuador, Indonesia, and Malaysia in coordination with governments is an example of this integrated approach. It aims to address the environmental and social issues of oil palm production in a defined landscape instead of focusing on individual plantations. This is done by strengthening the engagement of stakeholders such as governments, buyers, and palm oil producers.<sup>63,64</sup> This landscape approach to certification may provide a pathway forward for a more holistic effort to increase sustainable forms of palm oil production and consumption.

### FIGURE 3 ESTIMATIONS MADE FOR CALCULATING SOURCING VOLUMES FOR THE FOLLOWING COMPANIES:

#### Wilmar International

- **Purchase Volume Total 2017 (2,164,192 tonnes):** This figure represents data for palm oil production only from plantations in Malaysia and Indonesia, as stated in Wilmar's 2017 sustainability report.<sup>103</sup>
- **Purchase Volume Standard-Compliant Certified 2017 (910,754 tonnes):** This figure includes 770,110 tonnes of crude and refined palm oil and 140,644 tonnes of palm kernel oil according to the RSPO ACOP 2017.<sup>104</sup>

#### Cargill

- **Purchase Volume Total 2017 (6,165,000 tonnes):** This figure was estimated by multiplying the company's palm oil market share (around 15% of the global palm oil trade in 2013, extrapolated to 2017)<sup>75</sup> by the global palm oil traded in 2017 (40,200,000 tonnes), including crude palm oil and derivatives, as reported by Chatham House.<sup>8</sup>
- **Purchase Volume Standard-Compliant Certified 2017 (574,939 tonnes):** This figure was obtained from the RSPO ACOP 2017,<sup>76</sup> including volumes of crude and refined palm oil (430,004 tonnes), palm kernel oil (57,769 tonnes), and palm-based derivatives and fractions (87,166 tonnes). These volumes refer to own plantations, suppliers, smallholder farmers, and countries in which Cargill operates and trades.

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The Sustainable Commodities Marketplace Series provides a market performance overview and outlook for key agricultural commodities that comply with a number of voluntary sustainability standards (VSSs), focusing on global sustainable consumption and production. Each year, the series focuses on a different overarching theme, with individual reports for that year devoted to providing a market update for a chosen commodity. These reports are designed to be accessible and relevant for a range of audiences, including supply chain decision makers, procurement officers, policy-makers and producers. The series builds on *The State of Sustainable Markets 2018: Statistics and Emerging Trends*, a joint publication from IISD, the International Trade Center (ITC), and the Research Institute of Organic Agriculture (FiBL), which examines over a dozen sustainability standards for various commodities.

This *Global Market Report* analyzes recent trends in palm oil production, consumption, trade flows, and other relevant areas. The report also emphasizes the potential for expanding VSS-compliant production in Low Human Development Countries, given factors such as share of global oil palm production, VSS presence, and Human Development Index value. It uses 2016 data across all three factors, given that this was the latest year with data available for VSS-compliant oil palm when we conducted the analysis. By comparing the growth rates and patterns of standard-compliant versus conventional consumption and production of palm oil, this report provides insights on how sustainable and conventional markets are performing at a global level and highlights which countries have the potential to produce more VSS-compliant oil palm.

The State of Sustainability Initiatives (SSI) is an international transparency and capacity-building project that aims to improve strategic planning and sustainable development outcomes related to VSSs. It does so by providing in-depth, credible, and needs-based information on VSS characteristics, market performance, and potential contributions to addressing development challenges.

External Peer Reviewer: Aimee Russillo, Independent Consultant, Liseed Consulting

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Published by the International Institute for Sustainable Development.

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